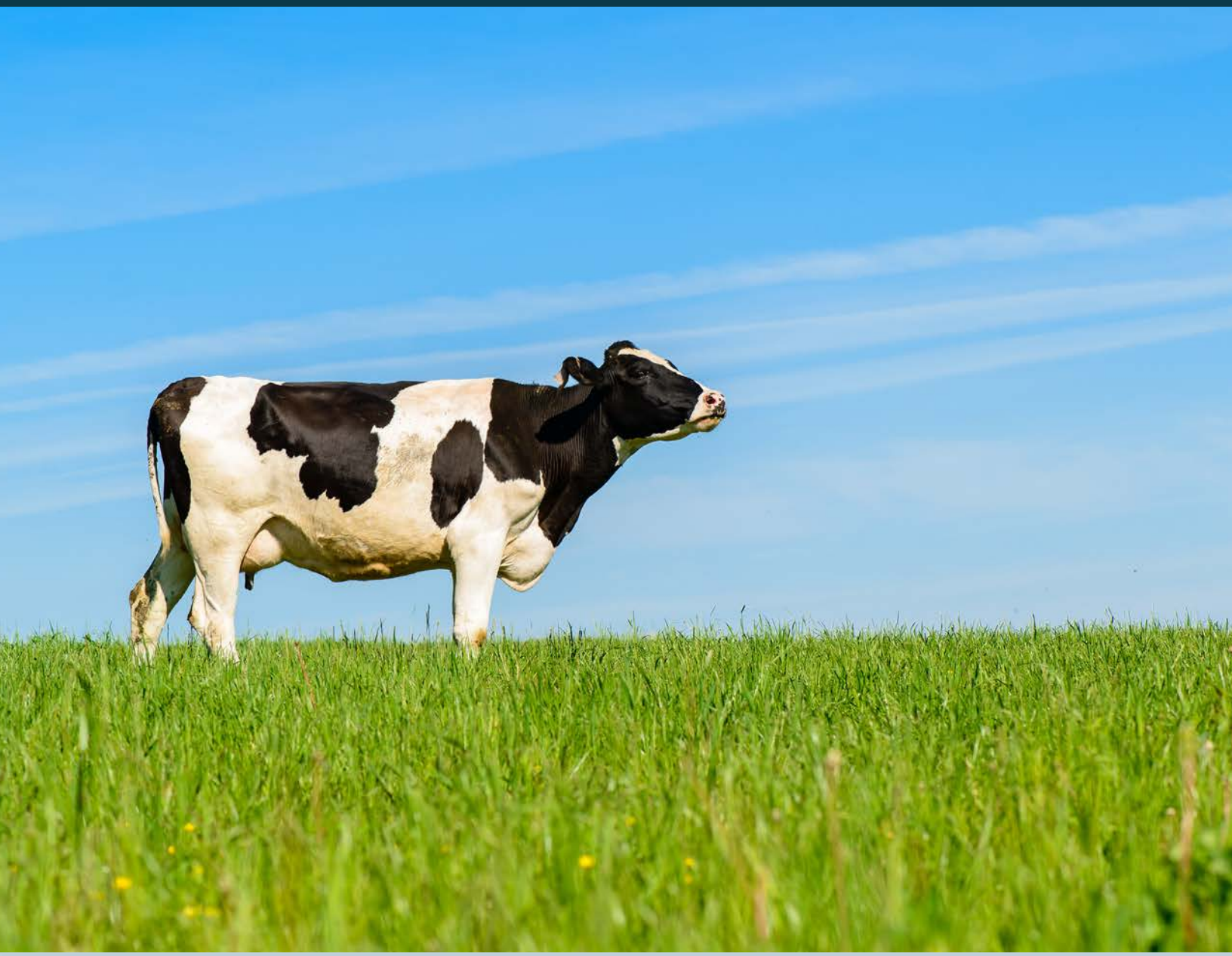
Environmental Impact Report for Sozinho Dairy #5

April 2026



Prepared By:

4Creeks, Inc.
324 S Santa Fe, Suite A
Visalia, CA 93292

Prepared For:

Kings County
1400 W. Lacey Blvd
Hanford, CA 93230

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Kings County
1400 W Lacey Blvd., Bldg. 6
Hanford, CA 93230

Section 1: Executive Summary

Project Title: Sozinho Dairy #5

1.1 Project Overview

The Sozinho Dairy #5 Project (Project) involves facility modifications at an existing dairy operation located in a rural unincorporated area of Kings County, California, just east of the City of Hanford. The Project aims to enhance operational efficiency, animal welfare, and environmental sustainability through targeted improvements to the Site's infrastructure. Key components include the construction of new animal housing structures to improve comfort and operational ease, expanded feed storage areas, and the implementation of advanced wastewater treatment systems using vermifiltration and mechanical separation.

The Project builds upon the Initial Study/Mitigated Negative Declaration (IS/MND) prepared for Sozinho Dairy #5, upgrading the analysis to a Environmental Impact Report (EIR) to address public and agency comments and provide a comprehensive evaluation of environmental impacts. These impacts include air quality, biological resources, greenhouse gas emissions, hydrology and water quality, and others, ensuring compliance with the California Environmental Quality Act (CEQA).

The Project is designed to align with the Kings County General Plan and regional environmental goals, such as those outlined by the San Joaquin Valley Air Pollution Control District (SJVAPCD). It incorporates mitigation measures to minimize impacts, including dust and odor control, energy-efficient equipment, and compliance with water quality standards enforced by the Central Valley Regional Water Quality Control Board (RWQCB). The Project's objectives focus on improving wastewater treatment, reducing greenhouse gas emissions, and enhancing nutrient recycling, all while maintaining the Site's agricultural character and avoiding significant growth-inducing impacts.

1.2 Environmental Impacts

This section summarizes the significant environmental impacts identified in the IS/MND for the Project, as well as additional impacts raised through agency comments during the public review process. It also outlines the mitigation measures incorporated into the EIR to reduce these impacts to less-than-significant levels, referencing supplemental analyses such as the Air Quality Impact Study and Biological Evaluation.

1.2.1 Significant Environmental Impacts Identified in the IS/MND

The IS/MND identified potentially significant impacts in the following environmental areas, which required further analysis and mitigation to ensure compliance with the CEQA:

- **Air Quality:** The IS/MND noted potential impacts from construction and operational emissions, including criteria pollutants (e.g., PM_{10}, $PM_{2.5}$, and ozone precursors) and toxic air contaminants (TACs), given the San Joaquin Valley Air Basin's nonattainment status for federal and state air quality standards. The lack of quantified emissions using the California Emission Estimator Model (CalEEMod) necessitated further evaluation.
- **Biological Resources:** Potential impacts to special-status species, such as burrowing owls and tricolored blackbirds, were identified due to the presence of suitable burrows and agricultural land near the Project Site. The IS/MND indicated that construction activities could disturb these species, requiring mitigation to reduce impacts.
- **Hydrology and Water Quality:** The IS/MND highlighted potential impacts to groundwater quality from wastewater management and stormwater runoff, particularly given the Project's reliance on on-site wells and the need to comply with RWQCB standards.
- **Cultural and Tribal Resources:** Although no known cultural resources were identified, the IS/MND noted the potential for uncovering subsurface archaeological or Native American remains during construction, requiring mitigation to address inadvertent discoveries.
- **Greenhouse Gas Emissions:** The IS/MND identified potential impacts from greenhouse gas (GHG) emissions due to operational activities, such as manure management and vehicle use, which required assessment against SJVAPCD thresholds and state reduction goals.
- **Energy:** The IS/MND assessed potential impacts related to energy consumption during construction and operation, including electricity and fuel use for new infrastructure such as process water treatment systems and animal housing. Further evaluation was required to determine if the Project would result in wasteful, inefficient, or unnecessary consumption of energy resources.
- **Transportation:** The IS/MND evaluated potential impacts from increased vehicle trips during construction and minor operational changes, including additional service vehicles for calf hutches and periodic cleanouts of process water treatment beds. This necessitated analysis of vehicle miles traveled (VMT), level of service on local roadways, and compliance with county transportation standards to avoid conflicts with circulation plans or congestion management programs.

1.2.2 Impacts Identified from Agency Comments

Agency comments received during the IS/MND public review process (Appendix B) identified additional concerns requiring further analysis in the EIR:

- **SJVAPCD (Comment Letter 2):** The SJVAPCD emphasized the need for a detailed air quality analysis using CalEEMod to quantify construction and operational emissions, a Prioritization Screening and potential Health Risk Assessment (HRA) for TACs, and

evaluation of a Voluntary Emission Reduction Agreement (VERA) if emissions exceeded thresholds. Concerns about Valley Fever risk due to Coccidioides immitis in Kings County soils were also raised.

- **Kings County Fire Department (Comment Letter 4**): The Fire Department required compliance with California Fire Code standards for all-weather access roads, fire extinguishers, employee training, and address identification to ensure fire safety and emergency access.
- **Kings County Environmental Health Services (Comment Letter 6):** Highlighted the need for a revised Hazardous Materials Business Plan (HMBP) and registration as a hazardous waste generator, as well as Valley Fever prevention measures in the dust control plan.
- **Kings County Public Works Department (Comment Letter 7):** Required that all infrastructure, including roads and drainage systems, conform to Kings County Improvement Standards, with specific attention to asphalt concrete drive approaches, encroachment permits, and on-site drainage containment.
- **Department of Conservation (CalGEM) (Comment Letter 8):** Provided guidance on responsibilities for plugged and abandoned oil, gas, or geothermal wells, including site evaluation, access maintenance, leak testing, and compliance with abandonment standards, noting no wells are present on or near the Project site but recommending protocols if any are encountered.
- **CDFW (Comment Letter 9):** CDFW recommended detailed biological surveys and mitigation measures for special-status species including Swainson's hawk, tricolored blackbird, western burrowing owl, and Crotch's bumble bee, emphasizing protocol-level surveys, no-disturbance buffers, and obtaining incidental take permits if avoidance is not feasible. Additional guidance was provided on nesting birds, cumulative impacts, and reporting to the California Natural Diversity Database.
- **CDFW (Comment Letter 10):** CDFW recommended detailed biological surveys and mitigation measures for special-status species including Swainson’s hawk, tricolored blackbird, western burrowing owl, Crotch’s bumble bee, and western spadefoot. All recommendations have been incorporated through revised Mitigation Measures BIO-3.1–BIO-3.2 (nesting birds), BIO-4.1–BIO-4.2 (Crotch’s bumble bee), and added the new BIO-5.1–BIO-5.3 (western spadefoot).
- **SJVAPCD (Comment Letter 11):** The SJVAPCD requested revisions to the Mitigation Monitoring and Reporting Program to assign sole responsibility for implementation and monitoring of mitigation measures AQ-5, AQ-8, AQ-11, and AQ-12 to the Kings County Community Development Agency. The District also recommended clarifying the occupancy status of on-site residences in the Health Risk Assessment (HRA) and evaluating on-site solar deployment as an emission-reduction strategy. The Project is subject to District Rules 2010, 2201, 4002, 4601, Regulation VIII, and Rules 4102, 4550, and 4570 (confined animal facilities) and is exempt from Rule 9510.
- **Central Valley Regional Water Quality Control Board (Comment Letter 12):** Central Valley Water Board staff requested additional documentation regarding the existing

reception pit to confirm preventative measures against wastewater infiltration to groundwater. The project will address this through submission of a BIDA project design report and a Post-Construction Report containing as-built documentation and material specifications, ensuring compliance with Order No. R5-2013-0122.

1.3 Alternatives Summary

Section 6 of this EIR analyzes a range of reasonable alternatives to the proposed facility modifications at the Site, as required by CEQA Guidelines. The alternatives evaluated include the *No Project Alternative* and the *Reduced Scale Alternative*. Each alternative is assessed for its environmental impacts compared to the proposed Project, with consideration of their ability to meet Project objectives, such as enhancing wastewater treatment, improving animal comfort, and ensuring regulatory compliance.

No Project Alternative

This alternative assumes no modifications occur at the Site, and existing dairy operations continue without the proposed upgrades. It avoids construction-related impacts, such as temporary disturbances to air quality, biological resources, and hydrology. However, it fails to achieve key Project objectives, including advanced wastewater treatment through vermifiltration, enhanced nutrient recycling, and operational efficiencies. Existing operations would rely on less efficient systems, potentially leading to higher long-term energy use and GHG emissions due to the absence of methane-reducing technologies like BIDA beds. This alternative is environmentally inferior to the proposed Project, as it does not improve water quality, reduce emissions, or enhance animal welfare.

Reduced Scale Alternative

This alternative involves implementing a smaller scope of modifications, such as reducing the number of BIDA beds from five to three and scaling back other infrastructure, like feed storage areas and animal housing. It reduces the construction footprint, slightly lowering impacts on air quality, biological resources, and hydrology during construction. However, it compromises the Project's ability to fully achieve objectives related to wastewater treatment efficiency, nutrient recycling, and operational improvements. The reduced capacity for wastewater treatment could result in less effective management of process water and higher methane emissions compared to the proposed Project. This alternative is also considered environmentally inferior due to its reduced effectiveness in meeting environmental and operational goals.

Environmentally Superior Alternative

The proposed Project is identified as the environmentally superior alternative. It incorporates advanced wastewater treatment (e.g., five BIDA beds), optimized operational efficiencies, and compliance with stringent regulatory standards (e.g., SJVAPCD, RWQCB). These features result in greater reductions in GHG emissions, improved water quality, and enhanced environmental protection compared to the alternatives. The Project's design minimizes impacts to less-than-

significant levels through mitigation measures, such for biological resources, air quality, and fire safety, ensuring comprehensive environmental management.

Trade-Offs

The No Project Alternative avoids short-term construction impacts but fails to deliver long-term environmental benefits, such as reduced methane emissions and improved groundwater quality. The Reduced Scale Alternative slightly reduces construction-related impacts but sacrifices efficiency and environmental benefits, making it less effective in achieving CEQA compliance and Project objectives. The proposed Project, while requiring construction, offers superior long-term environmental outcomes through advanced technologies and mitigation.

1.4 Conclusions and Recommendations- To Complete

Conclusions and Recommendations

The EIR recommends the proposed Project as the environmentally superior alternative due to its ability to meet all Project objectives while minimizing environmental impacts to less than significant levels through mitigation. The No Project and Reduced Scale Alternatives, while reducing some short-term impacts, do not provide the same level of environmental protection or operational efficiency. The Project's incorporation of BIDA beds, energy-efficient equipment, and compliance with Kings County Improvement Standards and California Fire Code ensures it is the preferred option for sustainable dairy operations.

Section 2: Introduction

Sozinho Dairy #5

2.1 Background and Purpose

The Sozinho Dairy #5 Project, involving facility modifications at the Site, is subject to the environmental review requirements of the California Environmental Quality Act (CEQA). CEQA mandates that projects with potential significant environmental impacts undergo thorough assessment to identify, mitigate, and disclose these impacts to the public. Initially, the Project was evaluated through an Initial Study/Mitigated Negative Declaration (IS/MND). This IS/MND can be found in Appendix A. The IS/MND aimed to determine whether the Project's impacts could be mitigated to less-than-significant levels. However, it was determined that a Environmental Impact Report (EIR) was necessary.

Kings County, as the lead agency under CEQA, determined that the Project required a Conditional Use Permit and a full Environmental Impact Report (EIR) due to existing facility operations at the Site that are not fully covered by the General Plan's Dairy Element or the Countywide EIR. CEQA requires an EIR for projects that fall outside the scope of existing environmental reviews, such as the Dairy Element, to ensure a comprehensive evaluation of potential impacts.

2.2 CEQA Requirements

The CEQA *(Public Resources Code [PRC] Sections 21000 et seq.)* and its implementing Guidelines *(California Code of Regulations [CCR], Title 14, Sections 15000 et seq.)* establish a comprehensive framework for assessing the environmental impacts of proposed projects. For the Project, an EIR is required due to the inability to tier from the Kings County Dairy Element PEIR. This section details CEQA's requirements for an EIR, emphasizing the need for an independent environmental analysis, and discusses the CEQA Guidelines for environmental analysis, public review, and mitigation monitoring.

2.2.1 CEQA Requirements for an EIR

CEQA mandates that an EIR be prepared for any project that may have a significant effect on the environment *(PRC Section 21080(d)).* An EIR is a detailed, public document that identifies a project's significant environmental impacts, evaluates feasible alternatives, and proposes mitigation measures to reduce or avoid those impacts (*CEQA Guidelines Section 15121*). For the Project, an IS/MND was prepared to determine whether the Project's impacts could be mitigated to less-than-significant levels. However, it was determined that a Environmental Impact Report (EIR) was necessary.

The EIR must also include a detailed project description *(CEQA Guidelines Section 15124),* an analysis of alternatives *(Section 15126.6),* and a discussion of cumulative impacts *(Section*

15130). The analysis must be supported by substantial evidence, defined as facts, reasonable assumptions, and expert opinions based on credible data (Section 15384). Mitigation measures must be feasible, enforceable, and sufficient to reduce significant impacts to a less-than-significant level where possible *(PRC Section 21081.6).*

2.2.2 CEQA Guidelines for Environmental Analysis

The CEQA Guidelines provide a structured approach to environmental analysis, ensuring that the EIR addresses all potential impacts in a consistent and thorough manner. The analysis must evaluate both direct and indirect impacts, as well as short-term and long-term effects (*CEQA Guidelines Section 15064*). For the Project, the EIR will assess impacts based on the Project's proposed modifications, including the addition of Biofiltro wastewater processing beds (BIDA beds), animal housing improvements, and organic matter processing areas.

The environmental analysis must consider the Project's consistency with applicable plans, policies, and regulations, such as the 2035 Kings County General Plan and the San Joaquin Valley Air Pollution Control District's rules (*CEQA Guidelines Section 15125(d)*). It will also incorporate baseline conditions from the IS/MND for Sozinho Dairy #5, supplemented by updated technical studies, as referenced in the IS/MND document. The EIR will use significance thresholds established by agencies like the SJVAPCD for air quality and the Central Valley Regional Water Quality Control Board RWQCB for water quality to determine the severity of impacts.

The analysis will address potentially significant impacts identified in the IS/MND**.** For each impact, the EIR will propose mitigation measures that are specific, enforceable, and tailored to the Project's design and location (*CEQA Guidelines Section 15126.4*)

2.2.3 Mitigation Monitoring and Reporting

CEQA requires a Mitigation Monitoring and Reporting Program (MMRP) to ensure that mitigation measures are implemented and effective (*PRC Section 21081.6*). The MMRP for the Sozinho Dairy #5 Project will outline specific monitoring actions, responsible parties, and compliance schedules for each mitigation measure identified in the EIR.

2.2.4 Lead Agency and Contact Information

- Lead Agency: Kings County Community Development Agency
- 1400 Lacey Blvd., Bldg. 6, Hanford, CA 93230
- Phone Number: (559) 852-2670

2.3 EIR Scope

This section outlines the methodology for the EIR prepared for the Project. The EIR is developed in accordance with the CEQA Guidelines and focuses on addressing agency comments, evaluating project alternatives, ensuring regulatory compliance, and analyzing environmental impacts.

2.3.1 Scope of the EIR

The EIR evaluates the environmental impacts of the proposed Project, which involves facility modifications to enhance animal housing, feed storage, process water treatment, and organic matter operations without herd expansion.

The EIR focuses on environmental topics that the Project's IS/MND and outside agencies comments identified as potentially significant impacts requiring further analysis. Based on the IS/MND, and agency feedback, the EIR prioritizes the following areas:

1. **Air Quality:** Assesses construction and operational air quality impacts, including criteria pollutants and toxic air contaminants, using CalEEMod to ensure compliance with SJVAPCD thresholds in a nonattainment region.
2. **Biological Resources:** Evaluates impacts on sensitive species like burrowing owls, incorporating mitigation measures (e.g., BIO-3.1) to maintain less-than-significant impacts based on the Live Oak Associates' Biological Evaluation.
3. **Cultural Resources:** Analyzes potential impacts on archaeological and tribal cultural resources, with mitigation measures (e.g., CUL-1, CUL-2) to address inadvertent discoveries despite no recorded resources on-site.
4. **Energy:** Assesses energy use for wastewater treatment and operations, ensuring compliance with the California Energy Code and PEIR energy efficiency recommendations.
5. **Greenhouse Gas Emissions:** Quantifies GHG emissions using CalEEMod, ensuring consistency with SJVAPCD's Climate Change Action Plan and state goals, with potential VERA mitigation.
6. **Hazards and Hazardous Materials:** Addresses hazardous materials and waste management, incorporating HMBP revisions and Valley Fever prevention measures per agency comments.
7. **Hydrology and Water Quality:** Examines groundwater and stormwater impacts from vermifiltration beds, with mitigation (e.g., HYD-2) ensuring compliance with RWQCB standards.
8. **Transportation:** Evaluates truck traffic impacts, ensuring access roads and drive approaches meet Kings County Improvement Standards.
9. **Utilities and Service Systems:** Assesses water, wastewater, and solid waste management, ensuring compliance with CalRecycle and Kings County composting regulations.

2.3.2 Objectives of the EIR

The EIR's objectives are to:

1. Address agency comments from the Central Valley RWQCB, SJVAPCD, Kings County Fire Department, Kings County Environmental Health Services, Kings County Public Works Department, and other agencies to ensure regulatory compliance.
2. Assess feasible alternatives, including the No Project Alternative, Reduced Scale Alternative, and Alternative Site Layout, to identify the environmentally superior option.
3. Incorporate and monitor mitigation measures to reduce potentially significant impacts to less than significant levels, as outlined in the Mitigation Monitoring and Reporting Program.
4. Ensure compliance with CEQA, the Kings County General Plan, and applicable state and local regulations, including SJVAPCD rules (e.g., Rules 2010, 2201, 4550, 4570) and the California Fire Code.
5. Provide a transparent public review process, incorporating responses to comments received on the IS/MND.

2.3.3 Regulatory Compliance

The EIR ensures compliance with:

- **CEQA Guidelines:** Addresses all required environmental topics and incorporates public and agency feedback.
- **Kings County General Plan:** Evaluates deviations from the Goals, Objectives, and Policies laid out in the 2035 Kings County General Plan.
- **SJVAPCD Rules:** Complies with Rules, permitting, and mitigation measures that address air quality impacts.
- **Central Valley RWQCB:** Ensures compliance for dairy and composting operations.
- **California Fire Code:** Incorporates requirements for access, extinguishers, and emergency response.
- **CalRecycle and Hazardous Materials Regulations**: Addresses composting limits and Hazardous Materials Business Plan requirements.

2.4 Public Review Process

The public review process for the Sozinho Dairy #5 Project's EIR will comply with CEQA requirements. A 45-day public comment period will be provided for the Draft EIR, allowing agencies, organizations, and the public to submit comments on the environmental analysis. The comment period will commence upon release of the Draft EIR, with notices published in the local newspaper, CEQAnet Web Portal, Kings County Recorders Office and on the Kings County Community Development Agency website. Public meetings may be held to gather input. All comments received will be addressed in the Final EIR, which will include responses and any

necessary revisions to the Draft EIR. The Final EIR will be made available for a 10-day review period prior to certification by Kings County, the Lead Agency.

2.5 Document Organization

- **Executive Summary:** Summarizes the Project, key environmental impacts, mitigation measures, alternatives, and recommendations.
- **Introduction:** Provides background, purpose, CEQA requirements, agency roles, EIR scope, public review process, prior analyses, and methodology.
- **Project Description:** Details the Project's location, proposed actions, operational characteristics, objectives, and required approvals.
- **Environmental Setting:** Describes the physical, land use, air quality, biological, hydrological, and other environmental conditions of the Project area.
- **EIR-Level Environmental Analysis:** Evaluates impacts on air quality, biological resources, cultural resources, energy, greenhouse gas emissions, hydrology and water quality, hazards, transportation, and utilities.
- **Alternatives to the Proposed Project:** Analyzes the no-project alternative, reduced scale alternative, alternative site layout, and identifies the environmentally superior option.
- **Cumulative Impacts:** Addresses the Project's impact combined with other projects in the area.
- **Other CEQA Considerations:** Addresses growth-inducing impacts, irreversible changes, and mandatory findings of significance.
- **Mitigation Monitoring and Reporting Program:** Outlines the MMRP, detailing monitoring for air quality, biological resources, hydrology, fire safety, and other mitigation measures.
- **List of Preparers:** Lists the project team, lead agency staff, and consulted agencies.
- **References:** Cites regulatory documents, technical studies, and agency correspondence.
- **Appendices:** Includes the Initial Study/MND, responses to comments, technical studies, and other relevant documents.

2.6 Methodology

The EIR will have the following methodologies:

- **Baseline Establishment**: Uses the environmental setting from the IS/MND, updated with current data from technical studies, and agency correspondence.
- **Impact Analysis:** Assesses impacts against CEQA significance thresholds, incorporating CalEEMod for air quality and GHG emissions CAPCOA Prioritization for health risks and site-specific data for biological, cultural, and hydrological resources.
- **Public and Agency Input:** Incorporates comments from the IS/MND public review period and ongoing coordination with agencies to refine analyses and mitigation.

- **Mitigation Measures:** Builds on IS/MND mitigation measures and incorporates new measures to ensure impacts are less than significant.
- **Alternatives Evaluation:** Compares the proposed Project to alternatives (No Project, Reduced Scale) based on environmental impacts, feasibility, and alignment with Project objectives.
- **Cumulative Impacts:** Evaluates the Project's contribution to cumulative impacts in the context of the PEIR and regional development, particularly for air quality, water quality, and biological resources.

Section 3: Project Description

Sozinho Dairy #5

3.1 Project Location

The proposed Project is in a rural unincorporated area of Kings County, just east of Hanford. The Site is on the southwest corner of Houston Avenue and 7th Avenue. The Project Site is approximately 79.08 acres on APNs 016-200-005, -029, -028 and -035. The Site is topographically flat and surrounded by agricultural uses and some rural residences to the north. The surrounding areas are zoned as General Agriculture – 20 Acre Minimum (AG-20). Kings County designates the Site as General Agriculture – 20 Acre Minimum and is under agricultural use. The Site has existing features such as process water retention ponds, open lot corrals, freestall barns, a milk barn, a maternity barn, multiple residences, a hay barn, a shop, and a manure stacking area.

3.1.1 Regional Setting

Located in a rural agricultural area in eastern Kings County, the Project area is zoned General Agricultural 20-acre Minimum zone district (AG-20). The land surrounding the site is dedicated to field crops. The 2035 Kings County General Plan Land Use Element shows this portion of the County within Agricultural land use (County of Kings, 2010). Kings County is ranked eighth among California counties in agricultural production with a gross value of all agricultural crops and products produced in 2023 being $ 2,155,882,000. Milk has been a leading farm commodity in Kings County in recent years. According to the Kings County Agricultural Commissioner, the value of milk production in 2023 was $698 million (Kings County Department of Agriculture, 2023).

Climate during the winter in Kings County is dry and mild with the high temperature ranging from 55 to 65 degrees. Fog is not uncommon during the winter months and may settle for up to two weeks. Summer in Kings County is dry and hot with average daytime July and August temperatures hovering just below 100 degrees. Annual precipitation is approximately ten inches with a majority of the rain falling between November and April (County of Kings, 2010).
The Project area is subject to characteristic seasonal airflows. During the summer, air currents from the Pacific Ocean enter the Valley through the San Francisco Bay and Delta region and are forced down the Valley. These air movements are primarily to the southeast at velocities of six to ten miles per hour. During the winter, cold air flowing off the surrounding mountains results in currents toward the northwest and velocities ranging from zero to five miles per hour. These airflows result in extensive horizontal mixing of air masses in the Valley. However, vertical dispersion is constrained by temperature inversions, an increase in air temperature in a stable atmospheric layer, which may occur throughout the year.

Air Basin: The Project lies within the Kings County portion of the San Joaquin Valley Air Basin (SJV Air Basin). The air quality of the Valley is directly related to the ability of its atmosphere to dilute and transport pollutants. The climate and meteorology of the Valley are conducive to the creation and entrapment of air pollution. Air pollution within the Valley is, in part, a result of the enclosed air basin, which experiences long periods of inversion, a relatively light wind flow, and a generous amount of sunlight. The San Joaquin Valley Air Basin is comprised of eight counties: San Joaquin, Stanislaus, Merced, Madera, Fresno, Kings, Tulare and central and western Kern. The Basin periodically exceeds State and/or federal standards for levels of ozone and fine particulate matter.

Natural Vegetation: The natural vegetation communities of the southern San Joaquin Valley historically supported a diverse assemblage of plant and animal species. The conversion of native and naturalized plant communities by agricultural development, road construction, dam construction, and urbanization has significantly reduced available wildlife and plant habitat. As a result of this conversion, several species of both plants and animals have been extirpated from the southern San Joaquin Valley, and populations of other species have declined significantly.

Topography: The topography of the Project area is essentially flat with slopes, prior to agricultural land leveling, averaging ten feet to the mile toward the southwest.

Flood Zone: The Federal Emergency Management Flood Insurance Rate Map shows the site is not within a 100-year flood zone.

Groundwater: The southern San Joaquin Valley, approximately 10,000 square miles, is a broad structural trough bordered by the Sierra Nevadas on the east, the Coastal Ranges on the west and the Transverse Range on the south. The occurrence of groundwater is directly related to the geology and soils in the region. Fresh groundwater is principally contained in the unconsolidated continental deposits of the Pliocene to the Holocene age, which extend to depths ranging from less than 100 to more than 3,000 feet. The main source of groundwater in the San Joaquin Valley is precipitation on the valley and its tributary drainage basins. Replenishment of the unconfined and semi-confined groundwater bodies can be by seepage from streams and by underflow in permeable materials flooring the river and stream canyons that border the valley. The groundwater basin in the southern San Joaquin Valley is the Tulare Lake Basin which covers the area south of the San Joaquin River and includes Kings County and the western (valley portions) of Fresno, Tulare and Kern Counties.

3.1.2 Cumulative Projects

There are no other proposed projects within one mile of the Project.

3.2 Proposed Action

Sozinho Dairy #5 is proposing facility modifications to provide animal housing for increased animal comfort and operational ease, feed storage, implement process water treatment infrastructure to manage existing on-site process water, and establish organic matter operations for nutrient recycling and drying materials generated from animal operations and process water treatment for land applications. The facility is not proposing a herd expansion.

3.3 Project Description

Sozinho Dairy #5 is proposing facility modifications to provide animal housing for increased animal comfort and operational ease, feed storage, implement process water treatment infrastructure to manage existing on-site process water, and establish organic matter operations for nutrient recycling and drying materials generated from animal operations and process water treatment for land applications. The facility is not proposing a herd expansion. The facility is proposing the following:

Organic Matter Operations (3) and Product Storage

- Manure Processing Area: A 200,000 ft² area for managing manure off the proposed mechanical separators.
- Post Manure Organic Matter Processing Area: A 40,000 ft² area will be used to dry and improve manure for land application. Worms will be introduced to enhance nutrient availability and soil benefits.
- Post BIDA Bed Organic Matter Processing Area: A 150,000 ft² area for handling, storing, and drying material removed from the BIDA beds before land application.
- Processing and Product Storage Area: A 30,000 ft² area used for screening material from the organic matter areas into smaller particle sizes for various types of land application.

Process Water Treatment and Management

- One (1) Reception Pit: An existing structure located within the production area of the Dairy that serves as a designated pit for receiving process water from operations and directing process water into appropriate treatment or processing systems (including mechanical separators and BIDA beds).
- Two (2) mechanical separators: Machines used to remove solid particles from process water.
- One (1) Tank and One (1) Concrete Pad: A proposed 14' x 20' tank on a concrete pad for solid separation and collection.
- Two (2) Earthen Berms: Dirt Berms in the wastewater retention pond for additional process water separation and settling.
- Two (2) Lift Stations: A designated pit for receiving process water from operations, directing process water into appropriate treatment or processing systems.
- Five (5) Process Water Processing Beds totaling 216,000 ft²: Also called Biodynamic Aerobic (BIDA) beds which utilize a combination of worms, microbes, and wood chips

to remove contaminants within the process water through vermifiltration. Process water will not be stored in the proposed BIDA beds but will be used for filtration and additional process water treatment.

Animal Housing and Operations

- Three (3) Feed Storage Areas: A designated area for storing silage for animal feed. One is located approximately 650 feet south from the northeast corner of the property and is 13,500 square feet. The second is located in the northwestern corner of the facility and is approximately 84,000 square feet. The third is located in the northeast corner of the facility and is approximately 185,400 square feet.
- Twelve (12) Rows of Calf Hutches: Animal housing for calves ages 0-3 months of age.
- One (1) Freestall Barn: Animal Housing for heifers/cows over existing exercise pens for increased animal comfort and operational ease.
- One (1) Maternity Barn: Animal housing for calving cows over an existing open lot corral for a safe, clean and comfortable environment for pregnant cows to give birth. It offers a controlled space where cows can calve with reduced stress and risk of injury while being monitored.
- Twelve (12) shade structures over existing open lot corrals for animal comfort.
- One (1) Open Lot Corral: An approximately 44,625 square feet (175' x 255') animal housing corral for increased animal comfort and operational ease.
- One (1) Commodity Barn: A commodity barn for the storing of agricultural products.
- One (1) Shop: A shop for the repair of equipment used on the dairy.

The proposed modifications aim to improve wastewater treatment by using vermifiltration to produce higher quality process water for reuse, storage, and land application. The proposed BIDA beds will further treat the process generated water and benefit local groundwater quality. At the same time, the facility will enhance animal comfort and health through improved housing and operations, while streamlining daily activities with designated feed storage areas and operational upgrades, ensuring a seamless and efficient workflow.

Service and delivery vehicles occur regularly at the dairy to provide feed, haul milk, haul animals, provide mechanical services, provide veterinary services and breeding services, and fuel deliveries. With the addition of the proposed facility improvements, a minor amount of limited additional maintenance and service vehicles will visit the site a few times per week.

Every other year, the vermifiltration beds will be cleaned out, requiring additional services to haul woodchips from the processing beds to the facility stacking area for processing and land application. This process requires two trucks per day for 14 days to move processed wood chips on-site for land application. The wood chips will be moved to a drying area on-site and then will be transported and land applied following processing.

The addition of calf hutches will require one additional service vehicle per day. However, this improvement is expected to reduce the number of truck trips, as it eliminates the need for calves to be picked up and returned. No additional service vehicles will be required for the feed storage area, as this location was relocated on-site and existing operations will be utilized, maintaining or potentially reducing the overall truck trips.

The vermifiltration beds and separators will be operated 24 hours per day treating process water generated on site. The calf hutches will be operated within the existing employee operational hours. The modifications will require two additional employees on-site. One of the employees will be required to monitor and maintain the BIDA beds. The other additional employee will be used for calf hutch maintenance and feeding.

There will be minimal air pollution from the proposed project. Overall, the project will improve air quality due to the improved quality of process water entering the retention ponds on-site and enhanced facility flush water. Confirmation of the air study is being verified at a nearby operational vermifiltration bed dairy facility.

The odor in the beds will be minimized through tillage of the beds every two weeks. The tillage promotes movement in the beds, so the woodchips and process water filtering through the beds are not stagnant, which allows constant air exposure. The drainage channels will also be cleaned regularly so the beds drain properly, and odor is not released.

The dust will be controlled using gravel or decomposed granite around the vermifiltration beds. The amount of vectors near the vermifiltration beds will be reduced by tilling the beds to allow airflow and absorb excess moisture. The removal of plants, manure buildup, and puddles of process water near the beds will also aid in the reduction of vectors.

3.4 Project Operations

The Project operates as an existing dairy facility with proposed modifications to enhance animal housing, process water treatment, and organic matter management without expanding the herd. The facility operates 24 hours per day, with vermifiltration beds and mechanical separators treating process water continuously to improve water quality for reuse and land application. Animal housing, including calf hutches, freestall barns, and maternity barns, operates within existing employee schedules, with two additional employees managing BIDA beds and calf hutch maintenance. Service and delivery vehicles visit regularly for feed, milk hauling, animal transport, and maintenance, with minimal additional trips from the proposed improvements. Every two years, vermifiltration beds are cleaned, requiring two trucks daily for 14 days to move processed wood chips on-site for drying and land application. Odor and dust are controlled through regular bed tillage, gravel/decomposed granite surfacing, and a Fugitive Dust Emissions Control Plan, reducing vectors and ensuring compliance with SJVAPCD regulations. All operations adhere to Kings County Improvement Standards, California Fire Code, and environmental regulations, including waste management and

hazardous materials handling per CalRecycle and Kings County Environmental Health Services. Operational activities will fully comply with San Joaquin Valley Air Pollution Control District rules, including Rules 2010, 2201, 4002, 4601, Regulation VIII (including Rule 8021), 4102, 4550, and 4570, as further detailed in Section 5.2.3. Required permits will be secured prior to implementation.

3.5 Project Objectives

The Sozinho Dairy #5 Project aims to:

- Enhance wastewater treatment through vermifiltration and mechanical separation to produce higher-quality process water for reuse and land application.
- Improve local groundwater quality by implementing advanced treatment systems, such as BIDA beds, to reduce contaminants.
- Ensure compliance with environmental regulations, including Central Valley RWQCB General Order WQ 2015-0211-DWQ, SJVAPCD rules, and CalRecycle standards for composting and hazardous materials management.
- Improve animal comfort and health through upgraded housing, including freestall barns, maternity barns, and shade structures, without expanding the herd.
- Streamline operational efficiency with designated feed storage areas and organic matter processing for nutrient recycling and land application.
- Minimize environmental impacts by controlling odor, dust, and vectors through regular tillage, dust suppression measures, and compliance with the Fugitive Dust Emissions Control Plan.
- Maintain compatibility with surrounding agricultural land uses and adhere to Kings County Improvement Standards and California Fire Code requirements.

3.6 Required Approvals

The following discretionary approvals are required from Kings County for the proposed Project. It should be noted that this list is not exhaustive and additional permits and approvals may also be required:

- Kings County Conditional Use Permit
- Kings County Building and Encroachment Permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Central Valley Regional Water Quality Control Board (RWQCB), Storm Water Pollution Prevention Plan (SWPPP) 2-4
- Central Valley RWQCB, Notice of Intent for Coverage under General Order WQ 2015- 0121-DWQ, General Waste Discharge Requirements for Composting Operations.
- Kings County Fire Department: Approval of site layout for emergency vehicle access, fire suppression, and safety standards.
- Kings County Environmental Health Services: Approval of Hazardous Materials Business Plan (HMBP) and hazardous waste generator registration.
- CalRecycle: Compliance verification for composting operations under Title 14 CCR §17855(a)(1).

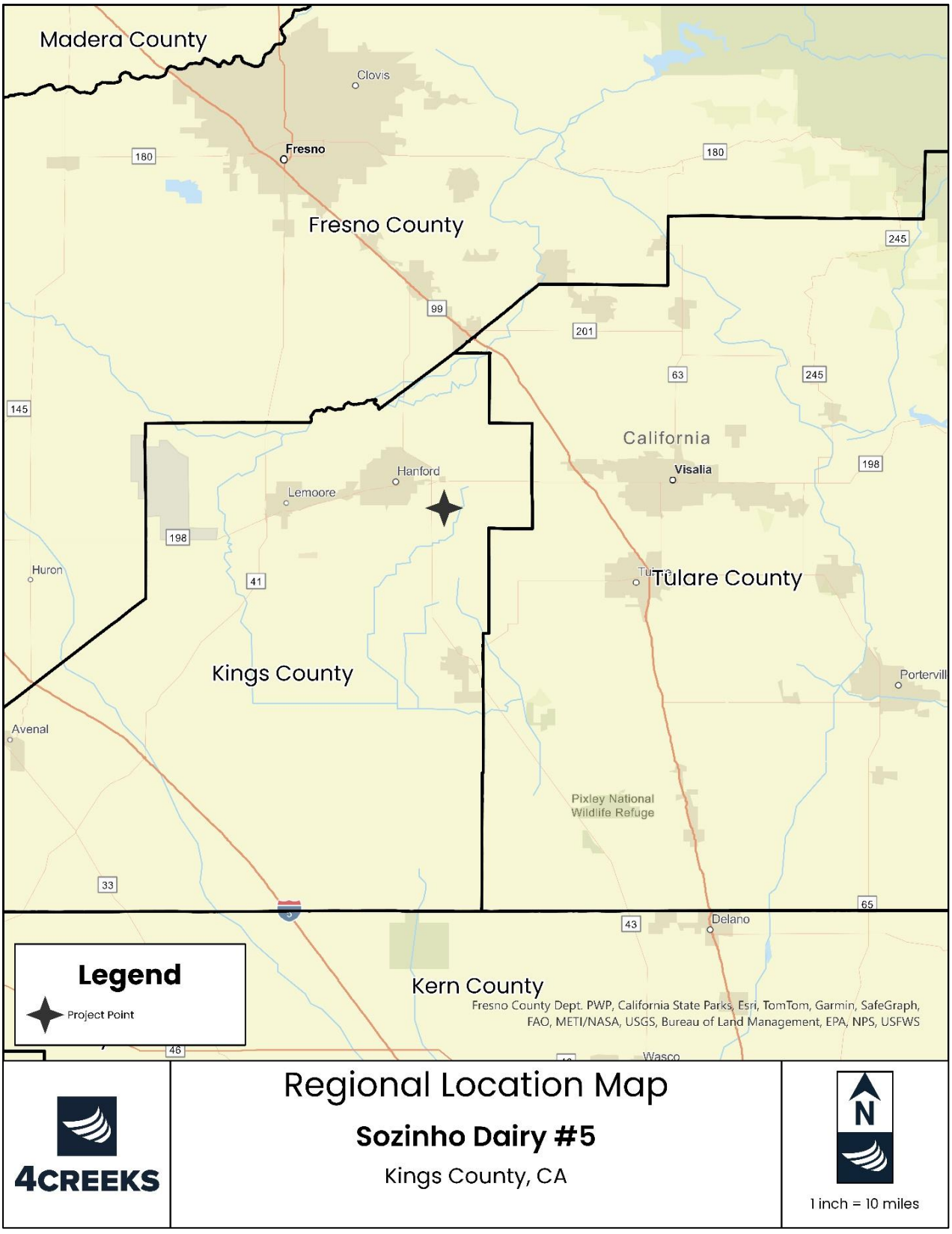


Figure 3-1: Regional Location Map



Figure 3-2: Vicinity Map

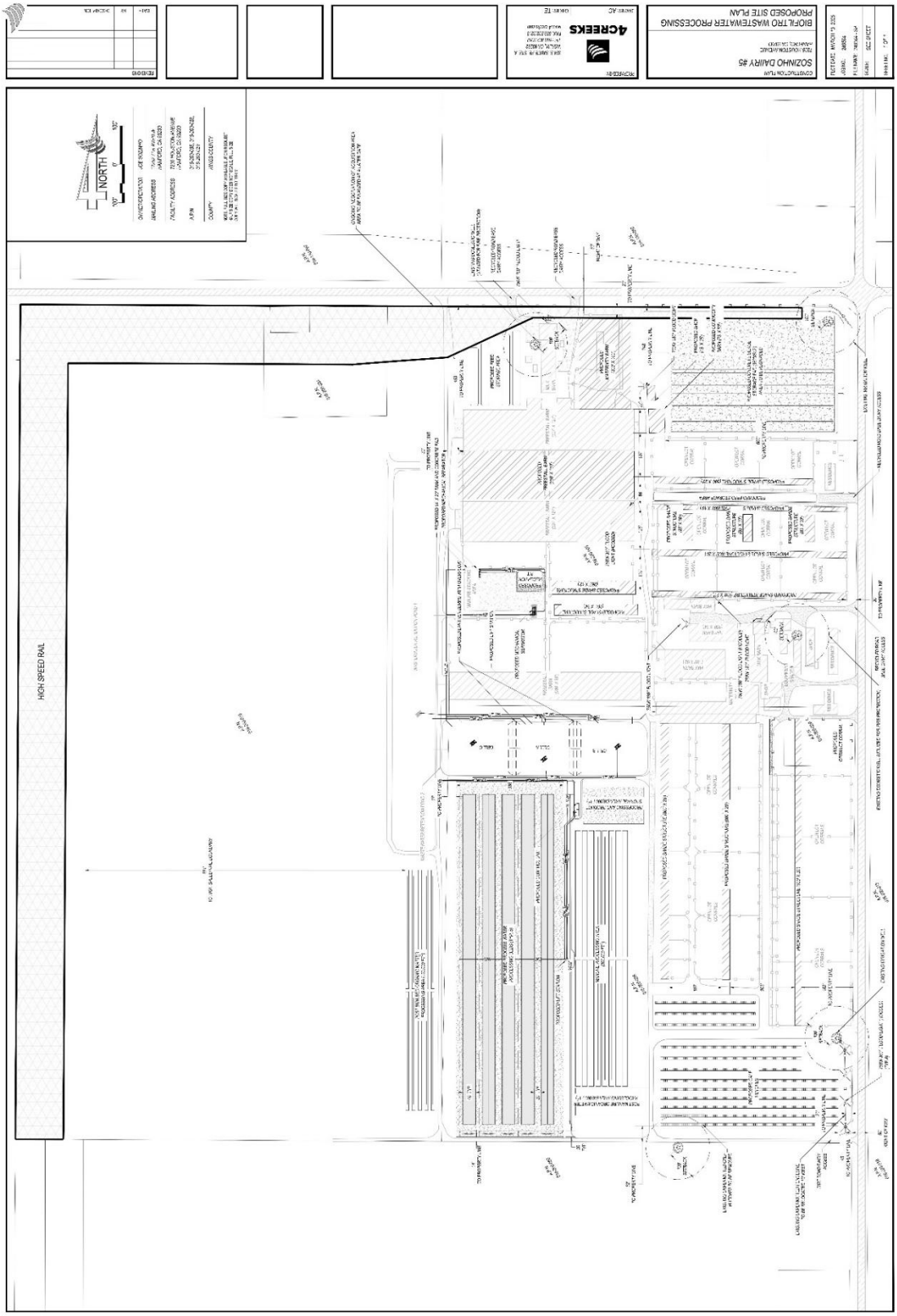


Figure 3-3: Site Plan

Section 4: Environmental Setting

Sozinho Dairy #5

4.1 Physical and Land Use Setting

The Sozinho Dairy #5 Project Site, located at 7205 Houston Avenue, Hanford, CA is situated in a rural agricultural area of Kings County, characterized by flat topography with slopes of 0 to 2%. The Site's underlying soils consist primarily of Kimberlina fine sandy loam and Wasco sandy loam, which are well drained with moderately rapid permeability (U.S. Department of Agriculture Natural Resources Conservation Service Official Soil Series Descriptions). These properties indicate low runoff potential and high infiltration rates, rendering the soils suitable for manure and wastewater processing facilities, as they facilitate effective percolation and minimize surface ponding risks.

All the surrounding land uses are designated as General Agriculture (20-acre minimum) per the 2035 Kings County General Plan, with nearby rural residences to the north and farmland to the north, south, east, and west, ensuring compatibility with the Project's agricultural operations.

4.2 Air Quality Baseline

The Project lies within the San Joaquin Air Basin (SJVAB), which is classified as extreme nonattainment for the 8-hour ozone standard, serious nonattainment for $PM_{2.5}$, and nonattainment for PM_{10} under both federal National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS). The SJVAB's topography, resembling a "bowl" opening only to the north, restricts air movement, exacerbating pollutant accumulation. The nearest sensitive receptor, a single-family residence, is located approximately 250 feet from the Site boundary. However, the residence is located 1,930 feet from the proposed wastewater processing beds, where the largest source of Air Impacts would occur. The closest school (Kit Carson Union Elementary) is approximately 2 miles north, reducing potential exposure to emissions. The Project's air quality impacts are evaluated against San Joaquin Valley Air Pollution Control District (SJVAPCD) significance thresholds, with a supplemental analysis using CalEEMod to quantify construction and operational emissions, including criteria pollutants (e.g., ozone precursors, $PM_{2.5,}$ PM_{10}) and toxic air contaminants.

4.3 Biological Resources Baseline

The Project Site comprises ruderal land heavily disturbed by ongoing agricultural activities, resulting in low habitat value for most wildlife species, as documented in the Live Oak Associates' Biological Evaluation. Vegetation is limited to common, non-native species such as leaf horseweed, London rocket, annual yellow sweet clover, and cheeseweed, with no significant plant communities present. Despite the lack of diverse habitat, the presence of ground squirrel burrows indicates potential suitability for burrowing owls, a California Species of Special Concern, which may use the Site for foraging, nesting, or roosting, though no owls

were observed during surveys. The Site's proximity to an irrigation ditch, seasonal basin, and percolation basin does not significantly enhance habitat value due to ongoing disturbance. Mitigation measures, such as preconstruction surveys, are incorporated to address potential impacts on sensitive species.

4.4 Hydrological and Water Quality Baseline

The Project Site relies on on-site wells for water supply to support livestock hydration, cleaning, irrigation, and wastewater treatment, with retention ponds designed to exceed the required 5-foot minimum to protect groundwater quality. The geotechnical evaluation (Appendix I) for the Project confirms that groundwater was not encountered during subsurface explorations, and the depth to regional groundwater at the Site exceeds 50 feet below ground surface, well below any facility operations.

The Site is part of the Kings River and Kaweah River watersheds, with stormwater managed on-site to prevent runoff into navigable waters, in compliance with the Central Valley Regional Water Quality Control Board's General Order R5-2013-0122-DWQ for composting operations. Soil disturbance poses a risk of Valley Fever due to the presence of Coccidioides immitis in Kings County soils, necessitating enhanced dust control measures, such as those outlined in the Fugitive Dust Emissions Control Plan and worker education programs, to protect workers and nearby residents. The Project's stormwater management system, including a Storm Water Pollution Prevention Plan, ensures compliance with water quality standards.

4.5 Other Environmental Conditions

A cultural resources records search conducted by the Southern San Joaquin Valley Information Center on April 22, 2024, found no recorded tribal cultural resources or archaeological sites within the Project area or a 0.5-mile radius, though one historic agricultural ditch (P-16-0000250) is noted nearby. The Project Site's flat terrain and agricultural use result in a low wildfire risk, with no location within a State Responsibility Area or Very High Fire Hazard Severity Zone, and compliance with California Fire Code ensures adequate fire safety measures Hazardous materials, such as fuel, oils, and wastes (e.g., used oil, antifreeze, batteries), are managed through a revised Hazardous Materials Business Plan (HMBP) submitted to the California Environmental Reporting System and registration as a hazardous waste generator with Kings County Environmental Health Services, ensuring compliance with California Health and Safety Code and Title 22 CCR. The absence of significant cultural resources, low wildfire risk, and regulated hazardous materials management minimize other environmental concerns.

Section 5: EIR-Level Environmental Analysis

Sozinho Dairy #5

5.1 Introduction

This section of the EIR for the Sozinho Dairy #5 Project addresses topics required by the CEQA. Each topic includes a description of existing environmental or regulatory conditions for the Project in its Setting subsection. The Impacts and Mitigation Measures subsection for each topic evaluates potential impacts and proposes mitigation measures to address them.

Unless otherwise specified, mitigation measures are designed to reduce impacts to a less-than-significant level. When multiple mitigation measures are proposed for a specific impact, all measures are required to achieve a less-than-significant impact unless the terms "or" or "alternatively" are used in the list of measures.

The Project applicant must comply with all mitigation measures, including associated reporting requirements, as a condition of Project approval. Non-compliance with any required mitigation measure may result in enforcement action by Kings County, which could include permit modification or revocation, in accordance with procedures established by the Kings County Community Development Agency. For mitigation measures requiring monitoring by the Kings County Community Development Agency, the Project applicant/operator shall maintain comprehensive performance records for each measure, available for Agency review.

Each impact is briefly described and numbered in bold. A detailed discussion and analysis follow, with mitigation measures listed and numbered to correspond to the identified impact. The Executive Summary includes a summary table with the same impact headings and mitigation measures.

5.1.1 Focus

The EIR and the discussions in this chapter are focused in accordance with the scoping process outlined in *Public Resources Code Section 21080.4(a)* and the CEQA Guidelines. CEQA-required topics not identified during scoping as requiring in-depth analysis have been addressed to the extent necessary for environmental review, as determined by the Lead Agency, Kings County Community Development Agency. This EIR builds upon the analysis in the Sozinho Dairy #5 IS/MND and addresses environmental topics requiring further evaluation.

5.1.2 Determination of Significance

Under CEQA, a significant impact is defined as a substantial, or potentially substantial, adverse change in the environment (*Public Resources Code Section 21068)*. The determination of significance is based on substantial evidence in light of the whole record. Significance criteria

for each impact are identified prior to the impact discussion in each topical section, consistent with Appendix G of the CEQA Guidelines and procedures implemented by Kings County. The San Joaquin Valley Air Pollution Control District (SJVAPCD) Guidelines are addressed, with particular emphasis on air quality, biological resources, hydrology and water quality, and fire safety, as identified in the IS/MND and agency comments received during the public review process.

5.2 Air Quality

5.2.1 Project Objective

This section evaluates the impacts of the proposed Project on local and regional air quality within the San Joaquin Valley Air Basin (SJVAB). It details the existing air quality conditions, quantifies Project-related emissions and their potential health effects, assesses impacts, and identifies mitigation measures to reduce or eliminate significant impacts. The analysis adheres to the significance criteria outlined in Appendix G of the State CEQA Guidelines and the San Joaquin Valley Air Pollution Control District's (SJVAPCD) Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI, March 2015). The evaluation incorporates federal and state ambient air quality standards (NAAQS and CAAQS), SJVAPCD rules, and Kings County General Plan policies. The analysis is *supported by* the Air Quality Analysis for Sozinho Dairy #5, included as Appendix *C*.

5.2.2 Environmental Setting

Air Pollution Climatology

Air quality is primarily a function of local climate, local sources of air pollution, and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The significant determinants of transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

The proposed Project is in Kings County, within the jurisdiction of the SJVAPCD, which regulates air quality in the SJVAB. The SJVAB comprises approximately 25,000 square miles and covers seven counties: Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. It also covers the western portion of an eighth county, Kern. The SJVAB is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The SJVAB is topographically flat with a slight downward gradient to the northwest. The SJVAB opens to the sea at the Carquinez Straits, where the San Joaquin-Sacramento Delta empties into San Francisco Bay. An aerial view of the SJVAB would simulate a "bowl" opening only to the north. These topographic features restrict air movement through and out of the SJVAB.

Under the provisions of the U.S. Clean Air Act, the Kings County portion of the SJVAB has been classified as nonattainment/extreme, nonattainment/severe, nonattainment, attainment/unclassified, attainment, or unclassified under the established NAAQS and CAAQS for various criteria pollutants. Table 5.2-1 provides the SJVAB's designation and classification based on the various criteria pollutants under both NAAQS and CAAQS.

Both the federal government and the State of California have established health-based ambient air quality standards (AAQS) for these air pollutants, commonly referred to as "criteria pollutants". They are called "criteria" pollutants because standards have been established for each of them to meet to protect the public health (primary standards) and welfare (secondary standards).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) which apply to all areas throughout the nation. In most cases, NAAQS define the maximum acceptable concentration that may be reached more than once per year. Attainment areas may be the following:

- **Attainment/Unclassified ("Unclassifiable" in Some Lists):** These basins have never violated the air quality standard of interest or do not have enough monitoring data to establish Attainment or Nonattainment status.
- **Attainment-Maintenance (National Ambient Air Quality Standards [NAAQS] Only):** These basins violated a NAAQS that is currently in use (were Nonattainment) in or after 1990 but now attain the standard and are officially redesignated as Attainment by the USEPA with a Maintenance State Implementation Plan (SIP).
- **Attainment (Usually Only for CAAQS, But Sometimes for NAAQS):** These basins have adequate monitoring data to show attainment, have never been Nonattainment, or, for NAAQS, have completed the official Maintenance period.
- **Nonattainment** areas are imposed with additional restrictions as required by the USEPA. The air quality data is also used to monitor progress in attaining air quality standards. Table 5.2-1 lists the attainment status for the criteria pollutants in the SJVAB.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	Standard Revoked	Nonattainment/Severe
Ozone – Eight hour	Extreme Nonattainment	Nonattainment
PM 10	Attainment (Maintenance)	Nonattainment
PM 2.5	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Sulfates	No Federal Regulation	Attainment
Hydrogen Sulfide	No Federal Regulation	Unclassified
Ozone (1-Hour)	Standard Revoked	Severe/Nonattainment

PM2.5 = particulate matter less than 2.5 microns in size
PM10 = particulate matter less than 10 microns in size

Table 5.2-1 SJVAB Attainment Status, Source: SJVAPCD Ambient Air Quality Standards & Valley Attainment Status.

California has implemented stricter ambient air quality standards (CAAQS or state standards) for most criteria air pollutants and has also established standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

The Project area experiences a climate typical of inland valleys in California, characterized by hot, dry summers and cool, mild winters. Summer daytime temperatures frequently exceed 100°F, with nighttime lows in the 60s. During winter, daytime temperatures generally reach the 50s, while nighttime lows hover around 35°F. Radiation fog is common in winter and can persist for several days. Winds predominantly flow up-valley (from the north) throughout the year, particularly in the summer and spring. In contrast, fall and winter winds are typically lighter, more variable in direction, but generally move southward and southeastward.

The Valley's unique topography contributes to a high potential for air pollution. Elevated surrounding terrain, combined with temperature inversions, often restricts the dispersion of pollutants both laterally and vertically. The region's abundant sunshine and warm summer temperatures create ideal conditions for the formation of photochemical oxidants, frequently leading to episodes of photochemical pollution.

Air pollution transported from the San Francisco Bay and Sacramento areas is estimated to contribute 27% of measured ozone levels in the northern section of the SJVAPCD, which includes San Joaquin, Stanislaus, and Merced Counties. This contribution decreases to approximately 11% in the mid-valley counties of Fresno, Tulare, Madera, and Kings.

Current Air Quality

The SJVAB has one of the most severe air pollution problems in California, with an estimated population of 4.2 million people, according to SJVAPCD's Planning Division. The valley's surrounding topographic features restrict air movement, trapping pollutants and preventing their dispersion. Temperature inversions further exacerbate air quality issues by forming barriers that trap pollutants close to the ground. During summer, these inversions occur at elevations of 2,000 to 2,500 feet above the valley floor, while in winter, they form at lower elevations of 500 to 1,000 feet.

Despite these challenges, air quality in the Valley has generally improved over the past decade, according to CARB data. However, the SJVAPCD has classified the region as being in 'extreme' nonattainment for ozone, resulting in stricter emissions controls and an extended attainment deadline to 2024. The Valley is also designated as nonattainment for federal $PM_{2.5}$ standards. While PM_{10} concentrations have shown a slow downward trend since monitoring began in 1988, the air basin is currently classified as an attainment area for federal PM_{10} ambient air quality standards.

The SJVAPCD and the California Air Resources Board (CARB) maintain ambient air quality monitoring stations throughout the region. The closest air quality monitoring station to the

Project Site is the Visalia- W Ashland Avenue Monitoring Station, which provides air pollutant data used to represent ambient air quality in the Project area. Data from this station provides background concentrations for various pollutants, including O_3, PM_{10}, $PM_{2.5}$, CO, NO_2, SO_2, and Pb as of 2021. However, no data is available for hydrogen sulfide (H_2S), vinyl chloride, or other toxic air contaminants in Kings County or surrounding areas.

The ambient air quality data indicate that NO_2 levels remain below applicable state and federal standards. However, annual average concentrations of PM_{10}, $PM_{2.5}$, and O_3 frequently exceed their respective thresholds. Due to the consistently low ambient CO concentrations across the region, no monitoring station near the Project Site measures CO levels.

Pollutant	Standard	2022	2023	2024
O_3				
Maximum 1-Hour Concentration (ppm)	State: 0.09 ppm	0.091	0.091	0.099
	No. of days exceeded	*0*	*0*	*2*
Max 8-hour concentration (ppm)	State: 0.07 ppm	*0.082*	*0.084*	*0.088*
	Federal: 0.07 ppm			
No. of days exceeded	State:	*13*	*14*	*29*
	Federal:	*12*	*11*	*25*
PM_{10}				
Maximum 24-hour concentration (µg/m³)	State: 50 µg/m³	*251.6*	*159.3*	*169*
	Federal: 150 µg/m³			
No. of days exceeded	State:	*143*	*116.5*	*115.8*
	Federal:	*1*	*1*	*4*
	Annual avg. concentration (µg/m³)	*49.9*	*44.2*	*44.4*
Exceeds Standard?	State: 20 µg/m³	*Yes*	*ND*	*Yes*
$PM_{2.5}$				
Maximum 24-Hour concentration (µg/m³)	Federal: 35 µg/m³	*14.1*	*12.5*	*11.8*
	No. of days exceeded	*27*	*11*	*8*
Annual avg. concentration (µg/m³)	State: 12 µg/m³	*14.1*	*12.5*	*
	Federal: 12 µg/m³			
NO_2				
Maximum 1-hour concentration (ppb):	State: 180 ppb	*62.9*	*51.9*	*51.5*
	Federal: 100 ppb			
No. of days exceeded	State:	*0*	*0*	*0*
	Federal:	*0*	*0*	*0*
Annual avg. concentration (ppb):	State: 30 ppb	*8*	*8*	*8*
	Federal: 53 ppb			
Exceeds Standard?	State:	*No*	*No*	*No*
	Federal:	*No*	*No*	*No*
Note: Pollutant concentration data from the Hanford-S Irwin Street Monitoring Station in Hanford, California. * There was insufficient (or no) data available to determine the value.				
µg/m3 = micrograms per cubic meter *ND = No data available* *NO2 = nitrogen dioxide* *O3 = ozone*		*PM10 = particulate matter smaller than 10 microns in size* *ppb = parts per billion* *ppm = parts per million* *PM2.5 = particulate matter smaller than 2.5 microns in size*		

Table 5.2-2 Air Quality Concentrations in the Project Vicinity; Source: California Air Resource Board (CARB)

5.2.3 Regulatory Setting

Federal

Environmental Protection Agency – Federal Regulation

The 1970 Federal Clean Air Act (FCAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The FCAA Amendments of 1990 revised these deadlines and specified remedial actions for areas failing to meet national standards. Under the FCAA, State and local agencies in nonattainment areas—regions that exceed national air quality standards—must develop State Implementation Plans (SIPs) to outline how they will achieve compliance within specified timeframes.

The Environmental Protection Agency (EPA) is responsible for implementing programs established under the FCAA, including the establishment and periodic review of the National Ambient Air Quality Standards (NAAQS) and the evaluation of SIPs to determine their adequacy. While the EPA may delegate the authority to implement some federal air quality programs to individual states, it retains oversight to ensure proper implementation.

The NAAQS, established by the EPA, apply nationwide and set maximum allowable concentrations for specific pollutants to protect public health and the environment. In most cases, these standards define the highest permissible pollutant levels that can be reached while still ensuring air quality remains safe.

State

California Air Resources Board – State Regulation

The CARB is responsible for enforcing the federally required State Implementation Plan (SIP) to achieve and maintain NAAQS. SIPs, prepared by states and submitted to the EPA, outline how each federal nonattainment area will reach and maintain compliance with national air quality standards. These plans include the technical basis for measuring air quality—such as emission inventories and air quality monitoring—as well as control measures, strategies, and enforcement mechanisms. CARB also determines air basin attainment designations in California.

California has adopted more stringent ambient air quality standards (CAAQS) than the federal requirements for most criteria air pollutants and has also established standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. CARB oversees air quality management districts, which are organized at the county or regional level, ensuring compliance with state and federal air quality mandates. Additionally, CARB is responsible for:

- Regulating Mobile Sources: Establishing tailpipe emission standards and regulating emissions from vehicles and other mobile sources.
- Regulating Toxic Air Contaminants (TACs): Identifying TACs and overseeing compliance with the Air Toxics Hot Spot Assessment Act of 1988 (AB 2588).

The California Clean Air Act (CCAA) of 1988 mandates that all air districts strive to achieve and maintain CAAQS for carbon monoxide (CO), ozone (O_3), sulfur dioxide (SO_2), and nitrogen

dioxide (NO_2) as soon as possible. The CCAA allows air districts to regulate indirect sources and requires them to focus on reducing emissions from transportation and area-wide sources. Each nonattainment district must adopt a plan to achieve a 5% annual reduction (averaged over consecutive three-year periods) in district-wide emissions of each nonattainment pollutant or its precursors. These strategies are outlined in Clean Air Plans, which detail how districts will reduce emissions to meet air quality standards.

CARB, recognized as California's "clean air agency," is dedicated to attaining and maintaining healthy air quality, protecting the public from toxic air contaminants, and ensuring compliance with air pollution regulations. Generally, state air quality standards in California are more stringent than federal standards.

Ambient Air Quality Standards

Both the federal government (EPA) and the State of California (CARB) have established health-based ambient air quality standards (AAQS) for eight air pollutants, commonly referred to as "criteria pollutants". These pollutants are called "criteria" pollutants because standards have been established for each of them to meet to protect the public health (primary standards) and welfare (secondary standards).

The U.S. EPA has established NAAQS which apply to all areas throughout the nation. In most cases, NAAQS define the maximum acceptable concentrations that may be reached more than once per year. These ambient air quality standards are maximum levels of contaminants, which are intended to represent safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The air quality criteria pollutants under state and federal law include ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}, $PM_{2.5}$, lead, and hydrogen sulfide.

The federal and State ambient air quality standards are summarized in Table 5.2-3. The federal and state ambient standards were developed independently with differing purposes and methods, although both processes are intended to avoid health-related effects. As a result, the federal and state standards differ in some cases. In general, the California state standards are more stringent. This is particularly true for ozone and PM_{10}.

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (03)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.075 ppm (147 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m³		--		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	--	Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m³		15 µg/m³		
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	
Nitrogen Dioxide (NO2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	--	Gas Phase Annual Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)[11]	--	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	--	--	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

1. California standards for O3, CO (except 8-hour Lake Tahoe), SO2 (1- and 24-hour), NO2, and PM (PM10, PM2.5, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than for O3 and PM and those based on the annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m3 is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.
3. Concentration is expressed first in the units in which it was promulgated. Most measurements of air quality are to be corrected to a reference temperature of 25ºC and a reference pressure of 760 torrs; ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas. Equivalent units given in parentheses are based upon a reference temperature of 25ºC and a reference pressure of 760 torrs.
4. Any equivalent measurement method that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. The reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.
8. On October 1, 2015, the national 8-hour O3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On December 14, 2012, the national annual PM2.5 primary standard was lowered from 15 μg/m3 to 12.0 μg/m3. The existing national 24-hour PM2.5 standards (primary and secondary) were retained at 35 μg/m3, as was the annual secondary standard of 15 μg/m3. The existing 24-hour PM10 standards (primary and secondary) of 150 μg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.
10. To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated as Nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as Nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.
14. In 1989, CARB converted both the general statewide 10 mi visibility standard and the Lake Tahoe 30 mi visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

ºC = degrees Celsius	CO = carbon monoxide	PM2.5 = particulate matter less than 2.5 microns in size
mg/m3 = micrograms per cubic meter	mg/m3 = milligrams per cubic meter	PM10 = particulate matter less than 10 microns in size
AAQS = ambient air quality standards	mi = mile/miles	ppb = parts per billion
USEPA = United States Environmental Protection Agency	NO2 = nitrogen dioxide	ppm = parts per million
CARB = California Air Resources Board	O3 = ozone	SO2 = sulfur dioxide
	PM = particulate matter	

Table 5.2-3: Ambient Air Quality Standards; Source: California Air Resources Board (CARB). 2016.

The U.S. Environmental Protection Agency in 1997 adopted new national air quality standards for ground-level ozone and for fine Particulate Matter. Both State and federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate, which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The San Joaquin Valley is nonattainment for both the State and federal $PM_{2.5}$ and PM_{10} standards. Similar levels can be expected to occur in the vicinity of the Project Site.

Because the EPA sets the concentration standards at a level that protects public health with an adequate margin of safety, these health effects would not occur unless the standards are exceeded by a large margin or prolonged period. Table 5.2-4 summarizes the most common health and environmental effects for each of the air pollutants for which there is a NAAQS or CAAQS, as well as for toxic air contaminants (TACs).

Pollutant	Effects on Health and the Environment
Ozone (O3)	• Respiratory symptoms • Worsening of lung disease leading to premature death • Damage to lung tissue • Crop, forest, and ecosystem damage • Damage to a variety of materials, including rubber, plastics, fabrics, paint, and metals.
Particulate matter less than 2.5 microns in size ($PM_{2.5}$)	• Premature death • Hospitalization for worsening of cardiovascular disease • Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage
Particulate matter less than 10 microns size (PM_{10})	• Premature death and hospitalization, primarily for worsening of respiratory disease • Reduced visibility and material soiling
Nitrogen oxides (NOX)	• Lung irritation • Enhanced allergic responses
Carbon monoxide (CO)	• Chest pain in patients with heart disease • Headache • Light-headedness • Reduced mental alertness
Sulfur oxides (SO_x)	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
Lead	• Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage
Hydrogen sulfide (H_2S)	• Nuisance odor (rotten egg smell) • At high concentrations: headache & breathing difficulties
Sulfate	• Same as $PM_{2.5}$, particularly worsening of asthma and other lung diseases. • Reduces visibility
Vinyl chloride	• Central nervous system effects (e.g., dizziness, drowsiness, and headaches) • Long-term exposure (i.e., liver damage and liver cancer)
Visibility reducing particles	• Reduced airport safety, scenic enjoyment, road safety, and discourages tourism
Toxic air contaminants (TACs). About 200 chemicals have been listed as TACs.	• Cancer • Reproductive and developmental effects • Neurological effects

Table 5.2-4: Summary of Health and Environmental Effects of the Criteria Air Pollutants; Source: California Air Resources Board (CARB). n.d.-a. Common Air Pollutants

Regional

San Joaquin Valley Air Pollution Control District

The management of air quality in the San Joaquin Valley Air Basin is the responsibility of the SJVAPCD. The SJVAPCD has the responsibility to develop and implement attainment strategies to ensure that future emissions will be within federal and state standards and to monitor ambient air pollutant concentrations throughout the air basin. In addition to planning responsibilities, SJVAPCD has permitting authority over stationary sources of pollutants such

as power plants and manufacturing facilities as well as some area sources such as agricultural operations.

Federal and state air quality laws require identification of areas not meeting the ambient air quality standards. These areas must develop regional air quality plans to eventually attain the standards. Under both the federal and State Clean Air Acts, the SJVAB is a non-attainment area for ozone and $PM_{2.5}$.

Regional Air Quality Plans

Ozone Plans

"The Extreme Ozone Attainment Demonstration Plan, adopted by the SJVAPCD Governing Board October 8, 2004, sets forth measures and emission-reduction strategies designed to attain the federal one-hour ozone standard by November 15, 2010, as well as an emissions inventory, outreach, and rate of progress demonstration. This plan was approved by the USEPA on March 8, 2010; however, the USEPA's approval was subsequently withdrawn effective November 26, 2012, in response to a decision issued by the U.S. Court of Appeals for the Ninth Circuit (Sierra Club v. EPA, 671 F.3d 955) remanding USEPA's approval of these SIP revisions. Concurrent with the USEPA's final rule, CARB withdrew the 2004 plan. The SJVAPCD developed a new plan for the one-hour ozone standard, the 2013 Plan for the Revoked 1-Hour Ozone Standard, which it adopted in September 2013.

The 2007 Ozone Plan, approved by CARB on June 14, 2007, demonstrates how the Air Basin would meet the federal eight-hour ozone standard. The 2007 Ozone Plan includes a comprehensive list of regulatory and incentive-based measures to reduce emissions of ozone and particulate matter precursors throughout the Air Basin. Additionally, this plan calls for major advancements in pollution control technologies for mobile and stationary sources of air pollution, and an increase in State and federal funding for incentive-based measures to create adequate reductions in emissions to bring the entire Air Basin into attainment with the federal eight-hour ozone standard (San Joaquin Valley Air Pollution Control District, 2007).

On April 16, 2009, the SJVAPCD Governing Board adopted the Reasonably Available Control Technology Demonstration for Ozone State Implementation Plans (2009 RACT SIP). In part, the 2009 RACT SIP satisfied the commitment by the SJVAPCD for a new reasonably available control technology analysis for the one-hour ozone plan and was intended to prevent all sanctions that could be imposed by USEPA for failure to submit a required SIP revision for the one-hour ozone standard. With respect to the eight-hour standard, the plan also assesses the SJVAPCD's rules based on the adjusted major source definition of 10 tons per year (due to the Air Basin's designation as an extreme ozone nonattainment area), evaluates SJVAPCD rules against new Control Techniques Guidelines promulgated since August 2006, and reviews additional rules and amendments that had been adopted by the Governing Board since August 17, 2006, for reasonably available control technology consistency.

The 2013 Plan for the Revoked 1-Hour Ozone Standard was approved by the Governing Board on September 19, 2013 (San Joaquin Valley Air Pollution Control District, 2013). Based on implementation of the ongoing control measures, preliminary modeling indicates that the Air Basin will attain the one-hour ozone standard before the final attainment year of 2022 and without relying on long-term measures under the federal CAA Section 182(e)(5) (San Joaquin Valley Air Pollution Control District, 2013).

On June 19, 2014, the Governing Board adopted the 2014 Reasonably Available Control Technology Demonstration for the 8-Hour Ozone State Implementation Plan (SJVAPCD, 2014) that includes a demonstration that the SJVAPCD rules implement RACT. The plan reviews each of the NOx reduction rules and concludes that they satisfy requirements for stringency, applicability, and enforceability, and meet or exceed RACT. The plan's analysis of further ROG reductions through modeling and technical analyses demonstrates that added ROG reductions will not advance the Air Basin's ozone attainment. Each ROG rule evaluated in the 2009 RACT SIP has been subsequently approved by the USEPA as meeting RACT within the last two years. The ozone attainment strategy, therefore, focuses on further NOx reductions.
SJVAPCD adopted the 2016 Ozone Plan for the 2008 8-Hour Ozone Standard in June 2016. This plan satisfies CAA requirements and ensures expeditious attainment of the 75 parts per billion eight-hour ozone standards.

Particulate Matter Plans

In June 2007, the SJVAPCD Board adopted the 2007 PM10 Maintenance Plan and Request for Redesignation (San Joaquin Valley Air Pollution Control District, 2007b). This plan demonstrates how PM10 attainment in the Air Basin will be maintained in the future. Effective November 12, 2008, USEPA redesignated the Air Basin to attainment for the PM10 NAAQS and approved the 2007 PM10 Maintenance Plan (San Joaquin Valley Air Pollution Control District, 2007)

In April 2008, the Air Basin Board adopted the 2008 PM2.5 Plan and approved amendments to Chapter 6 of the 2008 PM2.5 Plan on June 17, 2010 (San Joaquin Valley Air Pollution Control District, 2013). This plan was designed to address USEPA's annual PM2.5 standard of 15 $\mu g/m^3$, which was established by USEPA in 1997. In December of 2012, the SJVAPCD adopted the 2012 PM2.5 Attainment Plan, which addresses USEPA's 24-hour PM2.5 standard of 35 $\mu g/m^3$, which was established by USEPA in 2006. In April 2015, the SJVAPCD Board adopted the 2015 Plan for the 1997 PM2.5 Standard that addresses the USEPA's annual and 24-hour PM2.5 standards established in 1997 after the Air Basin experienced higher PM2.5 levels in winter 2013–2014 due to the extreme drought, stagnation, strong inversions, and historically dry conditions, and the SJVAPCD was unable to meet the initial attainment date of December 31, 2015.

SJVAPCD adopted the 2016 Moderate Area Plan for the 2012 PM2.5 Standard on September 15, 2016. This plan addresses the USEPA federal annual PM2.5 standard of 12 micrograms per cubic meter ($\mu g/m3$), established in 2012. This plan includes an attainment impracticability

demonstration and request for reclassification of the Valley from Moderate nonattainment to Serious nonattainment.

SJVAPCD adopted the 2018 Plan for 1997, 2006, and 2012 PM2.5 Standards in November 2018. This plan addresses the USEPA federal 1997 annual PM2.5 standard of 15 μg/m3 and the 24-hour PM2.5 standard of 65 μg/m3; the 2006 24-hour PM2.5 standard of 35 μg/m3; and the 2012 annual PM2.5 standard of 12 μg/m3. The plan demonstrates attainment of the federal PM2.5 standards as expeditiously as practicable as required under the federal CAA (San Joaquin Valley Air Pollution Control District, 2018).

Criteria Pollutant Emissions

Annual Significance Thresholds

To assess air quality impacts, the Air District has established significance thresholds to assist Lead Agencies in determining whether a project may have a significant air quality impact. The Air District's thresholds of significance for criteria pollutants, which are based on Air District Rule 2201 (New and Modified Stationary Source Review) offset thresholds. According to the Air District's Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI), "The District identifies thresholds that separate a project's short-term emissions from its long-term emissions. The short-term emissions are mainly related to the construction phase of a project and are recognized to be short in duration. The long-term emissions are mainly related to the activities that will occur indefinitely as a result of project operations."'

SJVAPCD has two sets of significance thresholds for each pollutant for operational emissions depending on whether the activities are for permitted equipment and activities or non-permitted equipment and activities. The SJVAPCD GAMAQI thresholds are designed to implement the general criteria for air quality emissions as required in the CEQA Guidelines, Appendix G, Paragraph III (Title 14 of the California Code of Regulations §15064.7) and CEQA (California Public Resources Code Sections 21000 et. al). SJVAPCD's specific CEQA air quality thresholds are presented in Table 5.2-5.

SJVAPCD – Rules and Regulations Applicable to Dairies

SJVAPCD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air pollution laws. The proposed Project may include equipment and activities subject to regulatory requirements imposed under the following rules and regulations.

Pollutant/Precursor	Construction Emissions	Operational Emissions	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	Emissions (tpy)	Emissions (tpy)	Emissions (tpy)
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
SOx	27	27	27
PM10	15	15	15
PM2.5	15	15	15

Table 5.2-5 Regional Thresholds for Construction and Operational Emissions; Source: SJVAPCD 2015. Guidance for Assessing and Mitigating Air Quality Impacts

Rule 2010

Rule 2010 requires that an Authority to Construct (ATC) permit (a "new source review" permit) and a Permit to Operate (PTO) be obtained prior to constructing, altering, replacing or operating any device which emits or may emit air contaminants.

Rule 2020

This rule specifies criteria that emission units must meet in order to be exempt from District permit requirements. The rule also specifies the recordkeeping requirements to verify the exemption and outlines the compliance schedule for emission units that lose the exemption after installation. This rule applies to any source that emits or may emit air contaminants.

Rule 2070

This rule sets forth the standards that must be met in order for a permit to be issued by the Air District. The rule applies to any activity required to obtain a permit according to Rule 2010 (Permits Required).

Rule 2201

The stated purpose of Rule 2201 is to provide for the review of new and modified stationary sources of air pollution and to provide mechanisms including emission trade-offs by which authority to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards. The SJVAPCD new source review rule (NSR) applies to all new stationary sources and all modifications to existing stationary sources which are subject to District permit requirements. The rule generally requires that new or modified equipment include best available control technology (BACT) and the emission increase above specified thresholds be offset.

Rule 3190

The purpose of this rule is to recover the District's costs for the review and management of Conservation Management Practices (CMP) Applications and Plans required by Rule 4550 (Conservation Management Practices).

Rule 4101
This rule prohibits the emissions of visible air contaminants to the atmosphere. The rule applies to any source operation which emits or may emit air contaminants.

Rule 4102
The rule applies to any source operation which emits or may emit air contaminants or other materials. It prohibits the discharge from any source whatsoever emissions of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public; or which endanger the comfort, repose, health or safety of any such person or the public; or which cause or have a natural tendency to cause injury or damage to business or property.

Rule 4002
Rule 4002 incorporates by reference the federal regulations under 40 CFR Parts 61 and 63 to regulate emissions of hazardous air pollutants (HAPs) from stationary sources within the district's jurisdiction. The rule aims to safeguard public health and the environment by enforcing stringent standards on activities such as asbestos demolition and renovation, industrial processes in chemical manufacturing and petroleum refining, and other HAP-emitting operations, with particular emphasis on Subpart M of Part 61 for asbestos control, requiring notifications, inspections, wetting of materials, proper containment, and recordkeeping to prevent visible emissions.

Rule 4201
This rule establishes a particulate matter emission standard. It applies to any source operation which emits or may emit dust, fumes, or total suspended particulate matter. The rule prohibits the release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions. RULE 4311 The purpose of this rule is to limit the emissions of volatile organic compounds (VOC) and oxides of nitrogen (NOx) from the operation of flares. This rule sets forth design, operational and test requirements for flares. Note: This rule would be applicable if digesters are required and excess biogas is flared. The proposed Project does not intend to flare the biogas. Gases are being captured, cleaned and used for electrical energy production.

Rule 4550
The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. It applies to agricultural operation sites located within the San Joaquin Valley Air Basin.

Rule 4565
The provisions of this rule apply to all facilities whose throughput consists entirely or in part of biosolids, animal manure, or poultry litter and the operator who landfills, land applies, composts, or co-composts these materials. Note: This project is exempt from Rule 4565 as per Rule 4565, Section 4.0 Exemptions, 4.1 - Facilities subject to Rule 4570 or facilities that are specifically exempt under Section 4.0 of Rule 4570.

Rule 4570
The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from Confined Animal Facilities (CAF).

Rule 4601
Limits volatile organic compound (VOC) emissions from architectural coatings used in construction. The Project's construction activities, such as painting new structures, must comply with VOC limits and storage/cleanup requirements.

Rule 4641
Regulates emissions from asphalt paving and maintenance operations. If applicable, the Project must adhere to this rule for any paving activities.

Rule 4623
The purpose of this rule is to limit emissions of volatile organic compounds (VOC) from the storage of organic liquids. RULE 4641 This rule applies to the manufacture and use of cutback asphalt, slow cure asphalt and emulsified asphalt for paving and maintenance operations.

Rule 8011
The purpose of this rule is to reduce ambient concentrations of particulate matter (PM10) by requiring actions to prevent, reduce or mitigate fugitive dust emissions. The rules contained in Rule 8011 have been developed pursuant to United States Environmental Protection Agency guidance for serious PM10 nonattainment areas. The rules are applicable to specified anthropogenic fugitive dust sources.

Rule 8021
This rule limits fugitive dust emissions from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on site, and travel on access roads to and from the site. Prior to the start of construction activities at the dairy facility site, the owner/operator will be required to file a Dust Control Plan with the SJVAPCD in accordance with Section 6.3 of Rule 8021.

Rule 8031
The rule applies to the outdoor handling, storage, and transport of any bulk material.

Rule 8041

This rule limits fugitive dust emissions from carryout and trackout. The rule applies to all sites that are subject to any of the following rules where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road: Rules 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), 8031 (Bulk Materials), 8061 (Paved and Unpaved Roads), and 8071 (Unpaved Vehicle and Equipment Traffic Areas).

Rule 8051

The purpose of this rule is to limit fugitive dust emissions from open areas. This rule applies to any open area having 0.5 acres or more within urban areas, or 3.0 acres or more within rural areas; and contains at least 1,000 square feet of disturbed surface area.

Rule 8061

This rule limits fugitive dust emissions from paved and unpaved roads by implementing control measures and design criteria. This rule applies to any new or existing public or private paved or unpaved road, road construction project, or road modification project.

Rule 8071

The purpose of this rule is to limit fugitive dust emissions from unpaved vehicle and equipment traffic areas. This rule applies to any unpaved vehicle/equipment traffic area.

Rule 8081

The purpose of this rule is to limit fugitive dust emissions from agricultural sources. This rule applies to off-field agricultural sources.

2035 Kings County General Plan

The 2035 General Plan *Air Quality Element* includes the following goals, objectives, and policies, which reduce impacts associated with air quality that relate to the proposed Project:

- **AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.**
  - AQ Objective C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed Projects within the County.
    - *AQ Policy C1.1.1*: Assess and mitigate Project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
    - *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized, consistently, and reasonably mitigated at a minimum, to levels as required by CEQA.

- *AQ Policy C1.1.6*: Encourage and support the development of innovative and effective mitigation measures and programs to reduce air quality and climate change impacts through proactive coordination with the SJVAPCD, Project applicants, and other knowledgeable and interested parties.

❖ **AQ Goal F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.**

➢ AQ Objective F1.1: Locate adequate sites for industrial development and roadway Projects away from existing and planned sensitive land uses which minimize or avoid potential health risks to people that might result from hazardous air pollutant emissions.

- *AQ Policy F2.1.1*: Coordinate with the SJVAPCD to ensure that construction, grading, excavation, and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.
- *AQ Policy F2.1.2*: Require all access roads, driveways, and parking areas serving new commercial and industrial development are constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Thresholds for Ambient Air Quality Impacts

CEQA Guidelines – Appendix G (Environmental Checklist) states that a project that would "violate any air quality standard or contribute substantially to an existing or projected air quality violation" would be considered to create significant impacts on air quality. Therefore, an AQIA should determine whether the emissions from a project would cause or contribute significantly to violations of the NAAQS or CAAQS (presented above in Table 5.2-3) when added to existing ambient concentrations.

The EPA has established the federal Prevention of Significant Deterioration (PSD) program to determine what comprises "significant impact levels" (SIL) to NAAQS attainment areas. A project's impacts are considered less than significant if emissions are below PSD SIL for a particular pollutant. When a SIL is exceeded, an additional "increment analysis" is required. As the Project would not include modification to the stationary source under NSR, it would not be subject to either PSD or NSR review. The PSD SIL thresholds are used with ambient air quality modeling for a CEQA project to address whether the Project would "violate any air quality standard or contribute substantially to an existing or projected air quality violation." Ambient air quality emissions estimates below the PSD SIL thresholds would result in less than significant ambient air quality impacts on both a project and cumulative CEQA impact analysis. The SJVAB is classified as non-attainment for the O3 NAAQS and, as such, is subject to "non-attainment new source review" (NSR). PSD SILs and increments are more stringent than the CAAQS or NAAQS and represent the most stringent thresholds of significance.

Thresholds for Hazardous Air Pollutants

The SJVAPCD's GAMAQI states, "From a health risk perspective there are basically two types of land use projects that have the potential to cause long-term public health risk impacts:

- Type A Projects: Land use projects that will place new toxic sources in the vicinity of existing receptors, and
- Type B Projects: Land use projects that will place new receptors in the vicinity of existing toxics sources".

SJVAPCD has also established the following thresholds of significance for risk exposure to toxic air contaminants to nearby sensitive receptors to the Project site, shown below in Table 5.2-6.

Carcinogens	Maximally Exposed Individual risk equals or exceeds 20 in one million
Non-Carcinogens	*Acute*: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual

Table 5.2-6 Thresholds of Significance for Toxic Air Contaminants (TAC's); Source: SJVAPCD

Both the state of California and the federal government have established ambient air quality standards for several different criteria air pollutants, a summary of which is shown above in Table 5.2-3. For some pollutants, separate standards have been set for different time periods. Most standards have been set to protect public health. For other pollutants, standards have been based on some other value (such as protection of crops, protection of materials, or avoidance of nuisance conditions).

5.2.4 Project Related Emissions and Health Effect

Project impacts will be evaluated both on the basis of CEQA criteria and SJVAPCD significance criteria. The impacts to be evaluated will be those involving construction and operational emissions of pollutants: particulate matter (PM_{10}) and fine particulate matter ($PM_{2.5}$); nitrogen oxides (NOx) and volatile organic compounds (VOCs), both precursors to ozone; methane; ammonia and hydrogen sulfide, (odors); carbon monoxide; greenhouse gases; and cumulative air quality impacts.

Criteria Pollutants

California is a diverse state with many sources of air pollution. Sources of air pollutants include stationary sources (facilities), area-wide sources, mobile sources, and natural sources. Emissions from area-wide sources may be either from small individual sources, such as residential fireplaces, or from widely distributed sources that cannot be tied to a single location, such as consumer products and dust from unpaved roads. Mobile sources include on-road cars, trucks, and buses and other sources such as boats, off-road recreational vehicles, aircraft, and trains. Natural sources include geogenic and biogenic hydrocarbon emissions, natural wind-blown dust, and wildfires. The general characteristics and health effects of air

pollutants emitted by project equipment and pollutants known to exist in the project area are summarized below.

Ozone (O_3)

The most severe air quality problem in the San Joaquin Valley is high concentrations of O_3. High levels of O3 cause eye irritation and can impair respiratory functions. High levels of O_3 can also affect plants and materials. Grapes, lettuce, spinach, and many types of garden flowers and shrubs are particularly vulnerable to O_3 damage. O_3 is not emitted directly into the atmosphere but is a secondary pollutant produced through photochemical reactions involving hydrocarbons and nitrogen oxides (NO_x). Significant O_3 generation requires about one to three hours in a stable atmosphere with strong sunlight. For this reason, the months of April through October comprise the "ozone season." O_3 is a regional pollutant because O_3 precursors are transported and diffused by wind concurrently with the reaction process.

Health Effects: Ozone exposure may cause eye irritation and damage to lung tissue in humans. Ozone also harms vegetation, reduces crop yields, and accelerates deterioration of paints, finishes, rubber products, plastics, and fabrics. Documented the adverse health effects of ozone with respect to respiratory disease, and the increase in such effects with respect to asthmatics, children and the elderly.

Suspended Particulate Matter (PM_{10} AND $PM_{2.5}$)

Both State and federal particulate standards now apply to particulates under 10 microns (PM_{10}) rather than to total suspended particulate, which includes particulates up to 30 microns in diameter. Continuing studies have shown that the smaller-diameter fraction of TSP represents the greatest health hazard posed by the pollutant; therefore, EPA has recently established NAAQS for $PM_{2.5}$. The project area is classified as attainment for PM_{10} and non-attainment for $PM_{2.5}$ for NAAQS.

Particulate matter consists of particles in the atmosphere resulting from many kinds of dust and fume-producing industrial and agricultural operations, from combustion, and from atmospheric photochemical reactions. Natural activities also increase the level of particulates in the atmosphere; wind-raised dust and ocean spray are two sources of naturally occurring particulates. The largest sources of PM_{10} and $PM_{2.5}$ in Kings County are vehicle movement over paved and unpaved roads, demolition and construction activities, farming operations, and unplanned fires. PM_{10} and $PM_{2.5}$ are considered regional pollutants with elevated levels typically occurring over a wide geographic area. Concentrations tend to be highest in the winter, during periods of high atmospheric stability and low wind speed. In the respiratory tract, very small particles of certain substances may produce injury by themselves or may contain absorbed gases that are injurious. Particulates of aerosol size suspended in the air can both scatter and absorb sunlight, producing haze and reducing visibility. They can also cause a wide range of damage to materials.

Health Effects: PM_{10} is inhaled into, and lodges in, the deepest parts of the lung, evading the respiratory system's natural defenses. In high concentrations effects on humans include aggravation of chronic disease and heart/lung disease symptoms. Non-health effects include reduced visibility and soiling of surfaces. Recent epidemiologic studies have contributed to understanding the size specificity of health effects, and have increasingly implicated the gases and smaller particles as the more relevant components of hazardous particulate exposure.

$PM_{2.5}$ health effects are similar to those of PM_{10}; they can impair proper lung function and may contribute to the development of chronic bronchitis. They are a health concern because they easily reach the deepest recesses of the lungs. Scientific studies have linked particulate matter (alone or in combination with other air pollutants) with a series of health problems, including premature death, respiratory related hospital admissions or emergency room visits, aggravated asthma, chronic bronchitis, decrease in lung functions, and work and school absences. Those who are most at risk are the elderly, individuals with preexisting heart and lung disease, children, and people with asthma.

Carbon Monoxide (CO)

Ambient CO concentrations normally correspond closely to the spatial and temporal distributions of vehicular traffic. Relatively high concentrations of CO would be expected along heavily traveled roads and near busy intersections. Wind speed and atmospheric mixing also influence CO concentrations; however, under inversion conditions prevalent in the San Joaquin Valley, CO concentrations may be more uniformly distributed over a broad area.

Internal combustion engines, principally in vehicles, produce CO due to incomplete fuel combustion. Various industrial processes also produce CO emissions through incomplete combustion. Gasoline-powered motor vehicles are typically the major source of this contaminant. CO does not irritate the respiratory tract but passes through the lungs directly into the blood stream, and by interfering with the transfer of fresh oxygen to the blood, deprives sensitive tissues of oxygen, thereby aggravating cardiovascular disease, causing fatigue, headaches, and dizziness. CO is not known to have adverse effects on vegetation, visibility, or materials.

Health Effects: CO health effects are related to its affinity for hemoglobin in the blood. At high concentrations, carbon monoxide reduces the amount of oxygen in the blood, causing heart difficulties in people with chronic diseases, reduced lung capacity and impaired mental abilities.

Nitrogen Oxides (NOx Includes NO_2) And Hydrocarbons

Kings County has been designated as an attainment area for the NAAQS for NO_2. NO_2 is the "whiskey brown" colored gas readily visible during periods of heavy air pollution. Mobile sources and oil and gas production account for nearly all of the county's NO_x emissions, most of which is emitted as NO_2. Combustion in motor vehicle engines, power plants, refineries, and other

industrial operations are the primary sources in the region. Railroads and aircraft are other potentially significant sources of combustion air contaminants. Oxides of nitrogen are direct participants in photochemical smog reactions. The emitted compound, nitric oxide, combines oxygen in the atmosphere in the presence of hydrocarbons and sunlight to form NO_2 and O_3. NO_2, the most significant of these pollutants, can color the atmosphere at concentrations as low as 0.5 ppm on days of 10-mile visibility. NO_x is an important air pollutant in the region because it is a primary receptor of ultraviolet light, which initiates the reactions producing photochemical smog. It also reacts in the air to form nitrate particulates.

Motor vehicles are the major source of reactive hydrocarbons in the basin. Other sources include evaporation of organic solvents and petroleum production and refining operations. Certain hydrocarbons can damage plants by inhibiting growth and by causing flowers and leaves to fall.

Health Effects: Nitrogen oxide increases the risk of acute and chronic respiratory disease. Short term exposures (e.g., less than 3 hours) to low levels of NO_2 may lead to changes in airway responsiveness and lung function in individuals with preexisting respiratory illnesses. Longterm exposures to NO_2 may lead to increased susceptibility to respiratory infection and may cause irreversible alterations in lung structure. These exposures may also increase respiratory illnesses in children.

Levels of hydrocarbons currently measured in urban areas are not known to cause adverse effects in humans. However, certain members of this contaminant group are important components in the reactions which produce photochemical oxidants.

Lead (Pb) And Suspended Sulfate

Ambient Pb levels have dropped dramatically due to the increase in the percentage of motor vehicles that run exclusively on unleaded fuel. Ambient Pb levels in Fresno are well below the ambient standard and are expected to continue to decline. Suspended sulfate levels have stabilized to the point where no excesses of the State standard are expected in any given year. Health Effects: Lead enters the body through contaminated inhalation, soil, water, dust, paint, and food. Lead particles small enough to be inhaled into the lungs are easily absorbed into the blood and circulated throughout the body. The most important target is the brain. Even low levels of lead exposure can increase blood pressure and permanently lower children's IQ. Higher levels can cause anemia.

Hydrogen Sulfide (H_2S)

Hydrogen sulfide is a colorless, irritating gas with a “rotten egg” smell and is generated by the anaerobic decomposition of manure. It is naturally emitted in geothermal areas and is also associated with certain industrial processes such as oil refineries, sewage treatment plants, and confined animal facilities. There is a State ambient air quality standard for hydrogen

sulfide but no corresponding national standard. Concentrations of this pollutant are not monitored within the San Joaquin Valley Air Basin.

Health Effects: H_2S has a distinct odor and can cause dizziness, nausea, irritation of eyes, nose, or throat, and headaches at low concentrations. Exposure to higher concentrations (above 100 parts per million [ppm]), can cause olfactory fatigue, respiratory paralysis, and death. Brief exposures to high concentrations of hydrogen sulfide (greater than 500 ppm) can cause a loss of consciousness. In most cases, the person appears to regain consciousness without any other effects. No health effects have been found in humans exposed to typical environmental concentrations of hydrogen sulfide (0.00011 – 0.00033 ppm).

Sulfur Dioxide (SO_2)

Kings County has been designated as an attainment area for the NAAQS for SO_2. SO_2 is the primary combustion product of sulfur or sulfur containing fuels. Fuel combustion is the major source of this pollutant, while chemical plants, sulfur recovery plants, and metal processing facilities are minor contributors. Gaseous fuels (natural gas, propane, etc.) typically have lower percentages of sulfur containing compounds than liquid fuels such as diesel or crude oil. SO_2 levels are generally higher in the winter months. Decreasing levels of SO_2 in the atmosphere reflect the use of natural gas in power plants and boilers.

Health Effects: High concentrations of SO_2 can result in temporary breathing impairment for asthmatic children and adults who are active outdoors. Short-term exposures of asthmatic individuals to elevated SO_2 levels during moderate activity may result in breathing difficulties that can be accompanied by symptoms such as wheezing, chest tightness, or shortness of breath. Other effects that have been associated with longer-term exposures to high concentrations of SO_2, in conjunction with high levels of PM, include aggravation of existing cardiovascular disease, respiratory illness, and alterations in the lungs' defenses. SO_2 also is a major precursor to $PM_{2.5}$, which is a significant health concern, and a main contributor to poor visibility (see also the discussion of health effects of particulate matter).

Sulfates (SO_4)

Sulfates are the fully oxidized ionic form of sulfur. They occur in combination with metal and/or hydrogen ions. In California, emissions of sulfur compounds occur primarily from the combustion of petroleum-derived fuels (e.g., gasoline and diesel fuel) that contain sulfur. This sulfur is oxidized to sulfur dioxide (SO_2) during the combustion process and subsequently converted to sulfate compounds in the atmosphere. The conversion of SO_2 to sulfates takes place comparatively rapidly and completely in urban areas of California due to regional meteorological features.

Health Effects: Contributes to respiratory illness, particularly in children and the elderly and aggravates existing heart and lung diseases.

Other Air Pollutants

Volatile Organic Compounds (VOC)

These volatile gases, also known as reactive organic gases, are hydrocarbon leftovers emitted into the air when fossil fuels don't burn completely. VOCs are emitted by vehicles, manufacturing and consumer products including hair sprays, engine degreasers, antiperspirants and deodorants, air fresheners, windshield washer fluids, charcoal light fluid, and household cleaners. In the atmosphere, when sunlight, VOCs, nitrogen oxides and oxygen are mixed, a new chemical combination is formed, ozone, which is the major ingredient of smog. At dairies, VOCs are emitted from the degradation of organic matter in manure.

Health Effects: As a component of ozone, the health effects are the same.

Methane (CH_4)

Methane is an odorless greenhouse gas that absorbs and reflects terrestrial radiation back to the earth. The recent phenomenon of rising temperatures reportedly related to greenhouse gases is known popularly as global warming. Methane is emitted into the environment from various sources including ruminant livestock and manure decomposition. Methane released from domesticated ruminant livestock accounts for about 30 percent (about 80 million metric tons per year) of the anthropogenic methane generated in the United States (U.S. EPA, Final Report on U.S. Methane Emissions 1990-2020: Inventories, Projections, and Opportunities for Reduction, EPA 430-R-99-013, September 1999). It is highly flammable and may form explosive mixtures with air.

Methane generation from ruminant animals is influenced by feed quality, essential nutrients in the feed, quantitative feeding level and feed schedule and animal health. Methane is released through the animal's mouth, nostrils and digestive system (approximately 70 percent per Inventory of U.S. Greenhouse Gas Emissions and Sinks - 1990-2006) and from anaerobic decomposition of livestock manure, (approximately 23 percent ibid). Of the major greenhouse gases, methane has a relatively short lifespan in the atmosphere. Removal from the atmosphere occurs due to chemical reactions in the atmosphere, as well as from microbial uptake by soils.

There are no state or national ambient air quality standards for methane, and it is not considered a precursor of any other pollutant. Regulatory requirements for the reduction of control of methane emissions have not been established on the Federal, State, or local levels. However, EPA prepares methane emission source inventories as required by the CAA amendments. The five major anthropogenic sources of methane in the United States have been identified to be (in order of contribution): landfills, domesticated livestock, natural gas and oil production, coal mining, and livestock manure. Methane has been determined to be the second most significant greenhouse gas that reportedly contributes to global warming, the first being CO2.

Health Effects: Methane is not toxic. It may displace oxygen in an enclosed space and asphyxia may result if the oxygen concentration is reduced below 19.5 percent.

Carbon Dioxide (CO_2)
Carbon dioxide is an odorless, colorless gas. Natural sources include decomposition of dead organic matter; respiration of humans, bacteria, plants, animals and fungus; evaporation from oceans; and volcanic outgassing. Anthropogenic (human caused) sources included burning coal, oil, natural gas and wood. It has been identified as a potential greenhouse gas. No emissions criteria have been established to date.

Health Effects: When inhaled at high concentrations, CO2 produces a sour taste in the mouth and a stinging sensation in the nose and throat. If inhaled at high concentrations, it can cause asphyxiation.

Toxic Air Contaminants
The public's exposure to toxic air contaminants (TACs) is a significant environmental health concern in California. TACs are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness or pose a present or potential hazard to human health. Unlike criteria pollutants, for which state and federal governments have set ambient air quality standards, many TACs—particularly those linked to cancer—have no safe threshold below which adverse health effects are not expected to occur. Although typically present in minute quantities in ambient air, their high toxicity means that even low concentrations can pose a significant health risk.

In 1983, the California Legislature enacted a program to identify the health effects of TACs and reduce public exposure to protect human health. Under State law, the California Environmental Protection Agency (CalEPA), acting through the CARB, is responsible for identifying TACs and regulating their emissions. Additionally, substances classified as federal hazardous air pollutants (HAPs) under Title 42, United States Code (USC) Section 7412 are also designated as TACs under California's air toxics program, as per Section 39657(b) of the California Health and Safety Code. CARB officially made this identification on April 8, 1993 (Title 17, California Code of Regulations (CCR), Section 93001). California regulates TAC emissions through a series of legislative measures:

- AB 1807 (Tanner Air Toxics Act): Establishes a formal process for CARB to identify and regulate TACs. Once a substance is designated as a TAC, CARB adopts airborne toxics control measures to reduce emissions from sources that emit the contaminant. If a safe threshold exists for a substance, emissions must be controlled below that level. If no safe threshold exists, the measure must incorporate best available control technology to minimize emissions.
- AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987): Requires Air Quality Management Districts (AQMDs) and Air Pollution Control Districts (APCDs) to quantify and prioritize TAC emissions from individual facilities. High-priority facilities

must conduct health risk assessments (HRAs), and if emissions exceed established thresholds, the facility must notify the public through public meetings and notices.
- SB 25 (Children's Environmental Health Protection Act): Focuses on protecting sensitive populations, including children, from exposure to air toxics.

CARB maintains the California Toxics Inventory (CTI), which provides emission estimates for 33 toxic compounds originating from stationary sources, area sources, mobile sources, and natural sources. These compounds were selected based on a list developed by the EPA for its National Air Toxics Assessment (NATA). The EPA considered multiple factors in developing the NATA list, including toxicity-weighted emissions, monitoring data, past air quality modeling analyses, and existing risk assessments.

To date, CARB has designated over 200 compounds as TACs and has implemented control measures for high-risk compounds where emissions reductions are considered feasible. The majority of health risks from TAC exposure can be attributed to a relatively small number of pollutants, with diesel particulate matter (DPM) from diesel-fueled engines identified as the most significant contributor to air toxics-related health risks in California.

Sensitive Receptors

One of the criteria for significance includes potential impacts on sensitive receptors. The SJVAPCD GAMAQI, defines a sensitive receptor as a location where human populations, especially children, seniors, and sick persons are present and where there is a reasonable expectation of continuous human exposure to pollutants. Sensitive receptors normally refer to land uses with heightened sensitivity to localized pollutants. Examples include emissions of criteria or toxic air pollutants that have health effects and to a lesser extent odors or odorous compounds such as ammonia and H2S. The term "sensitive receptor" does not have a distance associated with it; its "sensitivity" is a function of the land use and not necessarily the presence or lack of nearby sources.

SJVAPCD CEQA guidance does offer some "screening" distances between various sources and sensitive receptors, but these are useful only for determining when no analysis is required, not for determining significance of impacts. For example, the SJVAPCD "screening" distance for a dairy is given as one mile; beyond that distance further study per Section 5 of GAMAQI need not be undertaken. An expansion of an existing dairy in Kings County can be accomplished through the site plan review (SPR) process as long as the expanded portion of the dairy is consistent with the standards adopted in the Dairy Element concerning design, operation monitoring and reporting.

The nearest sensitive receptor to the Project Site is a single-family residence located approximately 250 feet to the northeast, across Houston Avenue, from the Site boundary. However, the residence is located 1,930 feet from the proposed wastewater processing beds, which are the primary source of potential emissions.

5.2.5 Impact Evaluation Criteria

CEQA criteria for evaluating adverse impacts on air quality are:

Would the Project:

a) Conflict with or obstruct implementation of the applicable air quality plan?
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?
c) Expose sensitive receptors to substantial pollutant concentrations?
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Agricultural operations can result in emissions of materials that are defined as pollutants. For this reason, the SJVAPCD's standards for determining when a proposed source's project level emissions are "significant" for the purposes of CEQA is used, although these standards are generally not associated with agricultural sources and estimates of emissions levels from agricultural sources vary widely.

The SJVAPCD's standards of significance for use in CEQA documents are contained in Guide for Assessing and Mitigating Air Quality Impacts, (Sections 4.3.1 and 4.3.2, pages 24 to 28) (San Joaquin Valley Air Pollution Control District, 2015).

The California Supreme Court's most recent CEQA decision on the Newhall Ranch development case, Center for Biological v. California Department of Fish and Wildlife (November 30, 2015, Case No. 217763), determined that the project's Environmental Impact Report (EIR) did not substantiate the conclusion that the GHG cumulative impacts would be less than significant. The EIR determined that the Newhall Ranch development project would reduce GHG emissions by 31 percent from business as usual (BAU). This reduction was compared to California's target of reducing GHG emissions statewide by 29 percent from business as usual. The Court determined that "the EIR's deficiency stems from taking a quantitative comparison method developed by the Scoping Plan as a measure of the greenhouse gas reduction effort required by the state as a whole, and attempting to use that method, without adjustments, for a purpose very different from its original design." In the Court's final ruling it offered suggestions that were deemed appropriate use of the BAU methodology:

- Lead agencies can use the comparison to BAU methodology if they determine what reduction a particular project must achieve in order to comply with statewide goals;
- Project design features that comply with regulations to reduce emissions may demonstrate that those components of emissions are less than significant; and
- Lead agencies could also demonstrate compliance with locally adopted climate plans, or could apply specific numerical thresholds developed by some local agencies.

Discussion

Impact #5.2a – Would the Project conflict with or obstruct implementation of the applicable air quality plan?

The Project proposes facility modifications that will improve animal housing, feed storage, wastewater treatment, and organic matter processing. The Project does not include herd expansion, and operational activities will remain largely the same as existing conditions. The Project involves facility modifications aimed at enhancing the dairy's operational efficiency, animal welfare, and environmental sustainability. These improvements include the installation of BIDA beds for wastewater treatment, three feed storage areas, twelve rows of calf hutches, one freestall barn, one maternity barn, twelve shade structures over existing open lot corrals, one additional open lot corral, one commodity barn, and one shop. These modifications are designed to support the dairy's agricultural operations while maintaining compliance with air quality plans in the SJVAB, which is designated as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under both Federal and State standards.

The SJVAPCD has developed air quality plans, including the 2023 Plan for the Revoked 1-Hour Ozone Standard, the 2022 Plan for the 2015 8-Hour Ozone Standard, and the 2024 Plan for the 2012 PM2.5 Standard. The Project is consistent with these plans, as the proposed improvements are expected to either maintain or improve air quality through targeted measures to control emissions.

Construction

During the construction phase, emissions will result from equipment use, material transport, and site preparation. However, construction emissions are expected to be temporary and minimal. The Project primarily involves modifications and additions rather than completely new developments, meaning land disturbance and associated emissions will be limited. Following the Dust Control Plan (DCP) (Appendix F), measures such as the use of gravel or decomposed granite, vehicle speed limits, and regular site watering will be implemented to control dust and reduce airborne particulates. The DCP is sufficient as submitted, as it covers the approximately 15.24 acres associated with the construction of the BIDA beds and related process water treatment infrastructure, which represents the portion of the Project involving new earthmoving activities that meet or exceed the SCVAPCD thresholds for a full DCP. The remaining components of the Project have already been constructed, not generating new fugitive dust sources. Construction will occur incrementally, preventing excessive emissions at any given time, and many structures will replace or upgrade existing infrastructure, reducing the need for significant land clearing or grading.

Appendix C details the methodology for the CalEEMod estimates for this Project. Construction activities for the Project will generate emissions from off-road equipment, fugitive dust, and worker vehicle trips. Emissions were quantified using the latest CARB-approved version of the

CalEEMod, as recommended by SJVAPCD. The pollutants evaluated include carbon monoxide (CO), nitrogen oxides (NOx), reactive organic gases (ROG), sulfur oxides (SOx), particulate matter less than 10 microns (PM_{10}), and particulate matter less than 2.5 microns ($PM_{2.5}$). Based on CalEEMod outputs, the estimated annual construction emissions for the Project and the SJVAPCD significance thresholds for criteria pollutants, as outlined in the GAMAQI, are as follows:

Pollutant/Precursor	Construction Emissions	Construction Emission Thresholds
	Emissions (tpy)	Emissions (tpy)
CO	2.34	100
NOx	1.82	10
ROG	0.55	10
SOx	<0.005	27
PM10	0.37	15
PM2.5	0.180	15

Table 5.2-7: Construction Emissions Compared to Thresholds

All construction-related emissions for the Project are well below the SJVAPCD significance thresholds.

To further minimize construction emissions, the Project will implement Mitigation Measure AQ-1, requiring the use of Tier 4 off-road equipment or equivalent emission controls. Additionally, the Fugitive Dust Emissions Control Plan (Appendix F) will be adhered to, incorporating measures such as regular watering of exposed areas, limiting vehicle speeds on unpaved roads, and using gravel or decomposed granite around construction sites to control fugitive dust, in compliance with SJVAPCD Regulation VIII (Rule 8011).

<u>Operation</u>

Regarding the operational (long-term) impacts, the Project will not increase herd size, employee numbers, or truck trips beyond a minor increase in maintenance-related activities. The proposed BIDA vermifiltration system will enhance wastewater treatment, leading to a reduction in VOC emissions from the retention ponds. The installation of 216,000 square feet of BIDA beds utilizes vermifiltration to treat process water, reducing VOCs and odors that contribute to ozone formation and other air quality issues. Regular tillage of the beds every two weeks promotes aeration, preventing stagnation and minimizing odor emissions. Additionally, cleaning drainage channels ensures proper drainage, further reducing odor release. These measures align with SJVAPCD Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations) and Rule 4566 (Organic Material Composting Operations), which aim to limit VOC emissions from manure and composting activities.

The three feed storage areas, located at the northeastern and northwestern corners of the facility, are designated for silage storage. These areas relocate existing feed storage operations on-site, maintaining current operational practices without increasing vehicle trips or associated emissions. By consolidating feed storage, the Project minimizes dust generation from handling activities, which could otherwise contribute to PM_{10} and $PM_{2.5}$ emissions. The use of gravel or decomposed granite around these areas, as part of the project's dust control measures, further reduces fugitive dust, complying with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions).

The addition of twelve rows of calf hutches, one freestall barn, one maternity barn, one shop, and twelve shade structures over existing open lot corrals enhance animal comfort and operational efficiency. These improvements do not introduce new sources of air pollutants, as they primarily involve stationary structures that do not generate significant emissions during operation. The calf hutches reduce the need for off-site calf transport, decreasing vehicle-related emissions of criteria pollutants such as nitrogen oxides (NO_x) and $PM_{2.5}$. The shade structures and barns reduce dust generation by providing covered areas that limit soil disturbance from animal movement.

The Project incorporates several energy-efficient design features to mitigate its energy consumption impacts. It complies with Title 24, Section 6 of the California Code of Regulations, which sets energy efficiency standards for buildings and equipment. Energy-efficient equipment will be used, particularly in wastewater treatment and manure processing operations. The integration of stormwater and wastewater treatment systems will minimize the need for additional energy-intensive treatment processes. Operational efficiencies, such as the strategic relocation of feed storage areas and organic matter recycling, will reduce the energy required for material transport and processing.

The Project will also reduce vehicle trips through operational improvements, further lowering fuel consumption. The introduction of on-site calf hutches will reduce overall truck trips by eliminating the need for calves to be transported off-site and returned. Additional vehicle trips will be minimal, with only one new service vehicle required per day and periodic truck trips every other year for BIDA bed maintenance Emissions were quantified using CalEEMod, consistent with SJVAPCD guidance. The SJVAPCD significance thresholds for operational emissions, as per GAMAQ are also shown.

Pollutant/Precursor	Operational Emissions	Operational Emission Thresholds
	Emissions (tpy)	Emissions (tpy)
CO	3.43	100
NOx	0.79	10

ROG	1.05	10
SOx	0.015	27
PM10	0.445	15
PM2.5	0.125	15

Table 5.2-8: Operational Emissions Compared to Thresholds

All operational emissions for the Project are below the SJVAPCD significance thresholds. The operational emissions for the Project are less than significant, as they do not exceed the SJVAPCD significance thresholds.

Ambient Air Quality Analysis

Further analysis through an Ambient Air Quality Analysis (AAQA) is not required, as emissions do not exceed 100 pounds per day for any pollutant.

SJVAPCD Rules

Rule 2010 (Permits Required)

The Project complies with SJVAPCD Rule 2010 by submitting an Authority to Construct (ATC) application (C-1243237) for stationary sources like wastewater treatment and feed storage equipment. The Project proponent coordinates with the SJVAPCD's Small Business Assistance Office for additional permits, ensuring compliance and minimizing air quality impacts per the EIR's Air Quality section.

Rule 2201 (New and Modified Stationary Source Review)

The Project adheres to SJVAPCD Rule 2201 by submitting the ATC application (C-1243237) and planning further applications for modifications like vermifiltration beds. These new and modified stationary sources of emissions will mitigate their emissions using Best Available Control Technology. This ensures emissions, including criteria pollutants and fugitive dust, remain below significance thresholds.

Rule 9510 (Indirect Source Review)

The Project is exempt from SJVAPCD Rule 9510 (Indirect Source Review) per section 4.4.3, which excludes projects primarily subject to Rules 2010 (Permits Required) or 2201 (New and Modified Stationary Source Review). The Project's stationary sources, such as wastewater treatment and feed storage equipment, are regulated under Rules 2010 and 2201, as verified by the SJVAPCD, making Rule 9510 inapplicable.

Rule 4601 (Architectural Coatings)

The Project complies with SJVAPCD Rule 4601, which limits VOC emissions from architectural coatings on stationary structures and appurtenances. The Project uses minimal coatings for maintenance or construction of structures like feed storage and wastewater facilities, adhering to Table 1 VOC limits (e.g., 100 g/l for Specialty Primers, Sealers, and Undercoaters) without exceeding manufacturer thinning recommendation.

Regulation VIII (Fugitive PM10 Prohibitions)
The Project follows Regulation VIII, including Rule 8011, by implementing a Fugitive Dust Emissions Control Plan with watering, speed limits, and gravel use, minimizing PM10 emissions during construction and operations.

Rule 4102 (Nuisance)
The Project adheres to Rule 4102 by using advanced wastewater treatment and odor controls, minimizing nuisance risks. The nearest receptor is 1,930 feet from processing beds, ensuring no public nuisance.

Rule 4550 (Conservation Management Practices)
The Project complies with Rule 4550, requiring dairies with ≥500 mature dairy cows to implement CMPs to reduce fugitive PM10 emissions. A CMP Application, detailing dust suppression CMPs like watering, speed limits, and gravel use for feed storage and unpaved roads, was submitted to the APCO. Records of CMP implementation are maintained for five years. The EIR confirms PM10 emissions are below thresholds via the Fugitive Dust Emissions Control Plan.

Rule 4570 (Confined Animal Facilities)
The Project meets Rule 4570, applicable to dairies with ≥500 milk cows. The Project submitted a Rule 4570 application, incorporating Phase II mitigation measures, such as NRC guideline feeding, covering silage piles within 72 hours, and incorporating solid manure within 72 hours. Vermifiltration and solid separators align with Class One measures like solids removal before lagoon entry.

Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt)
The Project follows Rule 4641, which restricts volatile organic compound (VOC) emissions from asphalt used in paving and maintenance operations. The Project involves minimal asphalt-related activities, such as potential minor road repairs or maintenance of on-site unpaved roads. Any emulsified asphalt used for tack coats, dust palliatives, or paving complies with Rule 4641's requirement that VOC content not exceed 3% by volume of organic compounds evaporating at 500°F or lower. The Project avoids using rapid cure or medium cure cutback asphalt and ensures slow cure asphalt, if used, meets the rule's VOC limit of 0.5%. Daily recordkeeping of asphalt types and amounts is maintained to ensure compliance.

The Project will generate minimal and temporary emissions during construction, with appropriate controls in place to manage air quality. Long-term operations will not lead to increased emissions and may, in fact, contribute to improved air quality due to enhanced wastewater management. Both operational and construction emissions remain below thresholds. The Project does not conflict with any applicable air quality plans, including SJVAPCD rules, and will result in a *less than significant impact with mitigation incorporation.*

Mitigation Measure(s)

Mitigation Measure AQ-1: To reduce construction-related diesel exhaust emissions for the Sozinho Dairy #5 Project, all off-road construction equipment shall meet Tier 4 emission standards or incorporate equivalent emission control technologies, as specified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The Project proponent shall ensure that all contractors and subcontractors use equipment compliant with these standards or retrofit existing equipment with approved emission control devices, such as diesel particulate filters or selective catalytic reduction systems. Compliance shall be verified through equipment inventories and maintenance records submitted to the Kings County Community Development Agency and SJVAPCD prior to the issuance of building permits.

Level Of Significance
Impacts would be *Less Than Significant with Mitigation Incorporated.*

Impact #5.2b – Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

As noted in Response to Impact #5.2a above, during construction the Project would generate minimal emissions that are well below adopted thresholds. Once operational, the Project would not generate either $PM_{2.5}$ or PM_{10} emissions beyond what is considered baseline. Impacts of the proposed Project are less than significant.

Conclusion
Construction related construction vehicle exhaust emissions are negligible and well under adopted SJVAPCD thresholds. The Project would comply with all applicable SJVPACD rules and regulations. Once operational, the dairy will continue to operate under baseline conditions. No new sources of criteria pollutants, including fugitive dust are anticipated.

Mitigation Measure(s)

No mitigation is required.

Level Of Significance

Impacts would be *less than significant.*

Impact #5.2c– Would the Project expose sensitive receptors to substantial pollutant concentrations?
See response to Impact #5.2a. Impacts related to emissions of criterial pollutants are less than significant.

Health Risks

Airborne Fungus (Valley Fever)

Coccidioidomycosis, often referred to as San Joaquin Valley Fever or Valley Fever, is one of the most studied and oldest known fungal infections. Valley Fever most commonly affects people who live in hot dry areas with alkaline soil and varies with the season. This disease, which affects both humans and animals, is caused by inhalation of arthroconidia (spores) of the fungus *Coccidioides immitis* (CI). CI spores are found in the top few inches of soil and the existence of the fungus in most soil areas is temporary. The cocci fungus lives as a saprophyte in dry, alkaline soil. The CI fungal spores are often found in the soil around rodent burrows, Indian ruins, and burial grounds. The spores become airborne when the soil is disturbed by winds, construction, farming and soil disturbing activities.

The Project has complied with Rule 8021 Section 6.3, which requires applicants to develop, prepare, submit, obtain approval of, and implement a Dust Control Plan, which would reduce fugitive dust impacts to less than significant for all construction phases of the Project. Compliance with this rule would also control the release of the *Coccidioides immitis* fungus from construction activities.

HAPS

According to GAMAQI guidance, when a proposed Project may introduce a new or modified source of hazardous air pollutants (HAPs) near an existing residential area or other sensitive receptor the potential health impacts from HAPs should be evaluated. Health risks are assessed based on long-term exposure to HAPs and toxic air contaminants; short-term emissions are not considered to pose health risks. Typical sources of HAPs include diesel-powered trucks and permitted equipment such as engines, boilers, or storage tanks. Although the project will not result in any increase in operational HAP emissions at the site, it will still be evaluated through the Prioritization Screening process as recommended by the SJVAPCD.

Prioritization Screening

To address potential health risks from TACs as recommended, a Prioritization analysis was conducted for the Project using the CAPCOA Risk Management Guidance for Stationary Sources of Air Toxics methodology. This screening-level health risk assessment evaluates TAC emissions from construction and operational activities, including diesel exhaust from off-road equipment and on-road trucks, to determine the potential risk to sensitive receptors, such as the single-family residence located approximately 250 feet from the Project site boundary and 1,930 feet from the wastewater processing beds, where the majority of the construction will occur.

The Prioritization analysis considered emissions of TACs, including diesel particulate matter (DPM), from construction equipment, on-road trucks, and operational activities such as wastewater treatment and manure management. The analysis followed SJVAPCD-approved protocols and incorporated site-specific factors, including the distance to the nearest sensitive receptor, meteorological conditions, and emission rates. The Prioritization score for the Project

was calculated greater than 10. As a result, a detailed Health Risk Assessment (HRA) was required to further quantify the potential health risks associated with TAC emissions.

Health Risk Assessment

Following the Prioritization score exceeding 10, a detailed HRA (Appendix D) was conducted for the Project in accordance with a District-approved modeling protocol, consistent with CAPCOA and Office of Environmental Health Hazard Assessment (OEHHA) guidelines. The HRA evaluated the potential cancer and non-cancer health risks to sensitive receptors from long-term exposure to TACs, primarily DPM, emitted during construction and operational phases. The assessment used the AERMOD dispersion model to estimate TAC concentrations at the nearest sensitive receptor, incorporating site-specific emission rates, meteorological data from the Hanford-S Irwin Street Monitoring Station, and exposure parameters for residential receptors, including children and adults.

The HRA results indicate that the maximum incremental cancer risk at the nearest sensitive receptor is 11.3 in one million, which is below the SJVAPCD significance threshold. The chronic non-cancer hazard index is 0.007, and no acute non-cancer hazard index was calculated due to the absence of an established reference exposure level (REL) for DPM under OEHHA guidelines. These values were compared to SJVAPCD significance thresholds (cancer risk of 20 in one million, chronic and acute hazard indices of 1.0). Given that the modeled unmitigated risks are below these thresholds, no additional mitigation measures specific to TAC emissions are required to maintain health risks at less than significant levels.

The HRA evaluated potential receptors in accordance with SJVAPCD Risk Management Guidance for Stationary Sources of Air Toxics. On-site residences were reviewed and confirmed to be occupied solely by dairy employees. Because employee housing is not considered a sensitive receptor under SJVAPCD methodology (sensitive receptors are defined as locations where non-employees, including the general public, may be exposed for extended periods), these residences were excluded from the receptor analysis. No non-employee occupied residences exist on-site; therefore, the Project remains below applicable significance thresholds for cancer risk, chronic hazard index, and acute hazard index. No revisions to the HRA are required. If any on-site residence is later determined to be occupied by non-employees, a supplemental HRA addendum will be prepared prior to project approval.

Conclusion

The Project does not include long-term activities that would generate significant Hazardous Air Pollutants (HAPs) beyond those evaluated in the HRA. The Prioritization analysis indicated a score exceeding 10, necessitating an HRA, which quantified health risks from TACs, primarily diesel particulate matter, as below significance thresholds. Operational TAC emissions were assessed and determined to be negligible, with no new substantial sources introduced. The Project complies with all applicable SJVAPCD rules and regulations, including Rule 8021 for fugitive dust control, which also minimizes the release of Coccidioides immitis fungus. The

Project is not anticipated to introduce new sources of health risks beyond those addressed through the HRA.

Mitigation Measure(s)

Mitigation Measure AQ-1: To reduce construction-related diesel exhaust emissions for the Sozinho Dairy #5 Project, all off-road diesel-powered construction equipment greater than 50 hp shall meet U.S. EPA Tier 4 emission standards or incorporate equivalent emission control technologies, as specified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The Project proponent shall ensure that all contractors and subcontractors use equipment compliant with these standards or retrofit existing equipment with approved emission control devices, such as diesel particulate filters or selective catalytic reduction systems. Compliance shall be verified through equipment inventories and maintenance records submitted to the Kings County Community Development Agency and SJVAPCD prior to the issuance of building permits.

Mitigation Measure AQ-2: To mitigate air quality impacts on sensitive receptors north of the Project site, the Project Proponent shall install a vegetative buffer along the northern boundary prior to operations. The buffer shall consist of native, drought-tolerant species and shall be designed and implemented in full compliance with applicable setback requirements and traffic safety visibility standards, including any restrictions on plant height or placement near intersections to ensure unobstructed sight lines for vehicular and pedestrian traffic. The final buffer design shall be reviewed and approved by the appropriate jurisdictional authority prior to installation to confirm compliance with all relevant visibility and safety regulations.

Level Of Significance

With the implementation of Mitigation Measures AQ-1 and AQ-2, impacts related to exposing sensitive receptors to substantial pollutant concentrations, including TACs, would be *less than significant with mitigation incorporated.*

Impact #5.2d – Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Because offensive odors rarely cause any physical harm and no requirements for their control are included in State or federal air quality regulations, the SJVAPCD has no rules or standards related to odor emissions, other than its nuisance rule.

The SJVAPCD's GAMAQI states "An analysis of potential odor impacts should be conducted for both of the following two situations:

1. Generators – projects that would potentially generate odorous emissions proposed to locate near existing sensitive receptors or other land uses where people may congregate; and
2. Receivers – residential or other sensitive receptor projects or other projects built for the intent of attracting people locating near existing odor sources."

The Sozinho Dairy #5 Project includes modifications aimed at improving wastewater treatment, which inherently involves managing potential odor emissions. The Project will implement BIDA beds that utilize vermifiltration to treat wastewater. This process is designed to reduce odors by improving the quality of wastewater before it enters the retention ponds.

Odor management is a key component of the project. The BIDA beds will be regularly tilled to prevent stagnation, which helps in minimizing the release of odors. Additionally, the drainage channels associated with these beds will be maintained to ensure proper drainage and prevent the buildup of odorous materials. The nearest sensitive receptor, a single-family residence, is located approximately 250 feet from the Project site boundary but is 1,930 feet from the wastewater processing beds, where the potential for odor generation is greatest. This distance, combined with the Project's odor control measures, significantly reduces the likelihood of odors affecting nearby residents.

During construction, there may be temporary odors from diesel exhaust and other construction-related activities. However, these emissions will be short-term and are not expected to be significant.

Overall, the Sozinho Dairy #5 Project has incorporated effective odor management strategies that are designed to minimize any potential impact on surrounding areas. Given these mitigation measures (AQ-3 to AQ-12) and the distance to the nearest sensitive receptors, the Project is not expected to result in emissions, such as odors, that would adversely affect a substantial number of people.

Based on the provisions of SJVAPCD's GAMAQI, the proposed Project would not exceed any screening trigger levels to be considered a source of objectionable odors or odorous compounds. Furthermore, there does not appear to be any significant source of objectionable odors in proximity that may adversely impact the Project site when it is in operation. Additionally, the Project emission estimates indicate that the proposed Project would not be expected to adversely impact surrounding receptors. As such, the proposed Project would not be a source of any odorous compounds nor would it likely be impacted by any odorous source.

Mitigation Measure(s)

Mitigation Measure AQ-3 (Odor Management). To minimize odor impacts from the Project, the Applicant shall implement an odor management plan. The plan will incorporate several

odor management strategies. These strategies will include regularly tilling the BIDA beds to prevent stagnation, reducing the potential for odor emissions. Additionally, the drainage channels associated with the BIDA beds shall be routinely maintained to ensure proper drainage and prevent the accumulation of odorous materials. The Applicant shall develop and adhere to a maintenance schedule for tilling and drainage channel upkeep, with records of these activities maintained and available for review by the Kings County Community Development Agency.

Mitigation Measure AQ-4 (Dust Control During Construction). To minimize construction-related air quality impacts, the Applicant shall implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan shall include measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. The Applicant shall ensure these controls are applied throughout the construction phase to reduce dust and exhaust emissions, with documentation of implementation maintained for review by relevant regulatory agencies.

Mitigation Measure AQ-5 (Wastewater Processing Bed Maintenance). To minimize operational emissions from the wastewater processing beds, the Applicant shall conduct regular maintenance of the BIDA beds to prevent stagnation and odor release. This shall include adherence to a vermifiltration design that improves wastewater quality and reduces volatile organic compound (VOC) emissions. The Applicant shall develop a maintenance protocol, with records available for inspection.

Mitigation Measure AQ-6 (Silage Management). To minimize odors and VOC emissions from silage storage, the Applicant shall cover silage piles with tarps or other impermeable materials. Regular monitoring and maintenance of silage piles shall be performed to prevent spoilage and anaerobic conditions that could exacerbate odors. The Applicant shall establish a schedule for these activities, ensuring records are kept and accessible for review by regulatory authorities upon request.

Mitigation Measure AQ-7 (Feed Storage Dust Suppression). To minimize fugitive dust emissions from feed storage areas, the Applicant shall utilize enclosed or covered structures where feasible. Dust suppression techniques, such as misting systems or windbreaks, shall be employed during material handling. The Applicant shall implement these measures in alignment with SJVAPCD-recommended best management practices for agricultural operations, with compliance documentation maintained.

Mitigation Measure AQ-8 (Agricultural Best Management Practices). To reduce overall emissions from silage and feed activities, the Applicant shall adhere to SJVAPCD-recommended best management practices, including proper storage and handling protocols. This shall encompass strategies to mitigate odors, VOCs, and particulate

matter, with a focus on the proximity of storage areas to sensitive receptors. The Applicant shall prepare a plan outlining these practices.

Mitigation Measure AQ-9 (Unpaved Road Dust Suppression)
To reduce fugitive PM10 and PM2.5 emissions from on-Site unpaved roads and traffic areas, the Applicant shall limit vehicle speeds to 15 mph, apply water three times daily (or more frequently as needed during dry conditions), or use chemical dust suppressants, and pave or gravel high-traffic areas where feasible. Signs posting speed limits shall be installed.

Mitigation Measure AQ-10 (Enhanced Waste Management for Additional Improvements). To address emissions from expanded dairy operations or waste management systems, the Applicant shall treat wastewater through vermifiltration-based BIDA beds to reduce VOC and ammonia emissions compared to traditional systems. Regular maintenance of these beds shall be conducted to prevent stagnation and odor release, with a documented schedule.

Mitigation Measure AQ-11 (Emission Control Technologies). To capture odorous compounds and ammonia from animal housing or waste management systems, the Applicant shall incorporate technologies such as biofilters or scrubbers where applicable. These controls shall be integrated into project improvements, aligning with SJVAPCD guidelines, and the Applicant shall maintain records of installation and operation for regulatory verification.

Mitigation Measure AQ-12 (Operational Controls for Vehicles and Equipment). To minimize emissions from expanded operational activities, the Applicant shall limit idling times for vehicles and equipment, utilize low-emission machinery where feasible, and implement dust suppression measures in expanded areas. These controls shall be part of a broader operational plan, with adherence documented and available for review.

Level Of Significance

Impacts would be *less than significant with mitigation.*

5.2.6 Feasibility and Necessity of Implementing a Voluntary Emission Reduction Agreement

Project Context and Emission Profile
The Project involves facility modifications in rural Kings County, California, within the SJVAB. Key components include animal housing, advanced wastewater treatment via five Biofiltro BIDA beds, and manure processing. The EIR indicates that construction and operational emissions are less than significant under CEQA and SJVAPCD thresholds, achieved through best management practices BMPs and compliance with SJVAPCD rules (e.g., Rules 2010, 2201, 4550, 4570).

Relevance of a VERA
A VERA typically aims to:

- Offset emissions in nonattainment areas like the SJVAB (nonattainment for $PM_{2.5}$ and ozone precursors).
- Support regional air quality goals or secure regulatory incentives.
- Enhance community relations through environmental stewardship.

While the SJVAB's nonattainment status suggests potential relevance for a VERA, the Project's emissions are already well below SJVAPCD significance thresholds. The EIR notes no new significant sources of criteria pollutants or GHGs, and existing technologies (e.g., BIDA beds) align with California's methane reduction goals under SB 1383 and the Short-Lived Climate Pollutant Strategy. Given the Project's minimal impacts, a VERA is not necessary to achieve regulatory compliance or environmental objectives.

Technical Feasibility
While technically feasible, additional emission reduction technologies are unnecessary due to the Project's effective existing systems and minimal impacts.

Emission Reduction Opportunities

- **Methane**: The BIDA beds reduce methane emissions by promoting aerobic manure treatment, minimizing anaerobic decomposition. Additional technologies, such as anaerobic digesters, could further reduce methane but are not critical given current reductions.
- **VOCs/Ammonia**: Compliance with Rule 4570 ensures VOC reductions, and odor control measures minimize ammonia emissions. Further measures (e.g., biofilters) could be added but are redundant given the distance to the nearest sensitive receptor (1,930 feet from wastewater beds).

- **Criteria Pollutants**: Construction emissions are controlled, and operational emissions are negligible. Low-emission equipment or electrification could reduce NOx and PM, but impacts are already less than significant.

Existing Technologies

The Project's BIDA beds and mechanical separators are advanced systems that effectively reduce emissions. These could support a VERA, but additional technologies (e.g., digesters, electric machinery) are not essential given the low baseline emissions.

Challenges

- The developed site has limited space for new infrastructure, complicating the addition of systems like digesters.
- Retrofitting for new technologies could disrupt operations, with minimal environmental gain given existing controls.

Regulatory Feasibility

A VERA is regulatorily feasible but not needed, as the Project already meets stringent SJVAPCD and state requirements.

Alignment with Regulations

- **SJVAPCD**: The Project complies with all applicable rules, and emissions do not exceed significance thresholds, negating the need for surplus reductions via a VERA.
- **State Policies**: The BIDA beds align with SB 1383's methane reduction mandates, and the Project supports California's Renewable Portfolio Standard (RPS) through energy-efficient operations. A VERA would not significantly enhance compliance.
- **CEQA**: The EIR's finding of less-than-significant impacts reduces the regulatory need for a VERA.

Challenges

- **Administrative Burden:** Developing a VERA requires coordination with SJVAPCD and other agencies, adding unnecessary complexity for a project with minimal impacts.
- **Monitoring:** Ongoing verification of reductions would increase reporting requirements, diverting resources from operations.

Economic Feasibility

A VERA is economically feasible with funding support but not cost-effective, as the Project's minimal impacts do not justify additional investments.

Costs

- **Capital Costs**: Technologies like anaerobic digesters or biofilters involve high upfront costs, unjustified given the Project's low emissions.

- **Operational Costs**: Maintenance and monitoring for a VERA would increase expenses without proportional environmental benefits.
- **Benefits**: Funding from Dairy Digester and Development Program or carbon credits could offset costs, but the low baseline emissions limit the economic return on such investments.
- Grants are available, but the Project's existing compliance and minimal impacts reduce the urgency to pursue them.

Challenges

- **Low ROI:** The Project's effective emission controls mean additional reductions offer diminishing returns.

Operational Feasibility

A VERA is operationally feasible but not needed, as existing systems adequately address emissions and community concerns. Additional maintenance or monitoring could overburden staff, given existing operational demands. Implementing new systems could temporarily disrupt dairy operations, with minimal environmental gain.

Conclusion

A VERA Is Not Needed**.** The Project's minimal emissions, effective technologies, regulatory compliance, and low community impact eliminate the need for a VERA. Resources are better allocated to maintain existing systems.

5.3 Biological Resources

5.3.1 Introduction

This section evaluates the potential effect the Project may have on biological resources. The discussion is based on findings from the Biological Evaluation (Live Oak Associates, 2024), which is included as Appendix E of this EIR.

5.3.2 Environmental Setting

This section outlines the regional and local environmental context of the Sozinho #5 Dairy Project and describes existing baseline conditions. The environmental characterization of the Project Site was derived from various literature sources, databases, and aerial imagery. The Site is located in Kings County, California, approximately 0.75 miles east of State Route 43 and 2.25 miles south of State Route 198, within the Sozinho #5 Dairy facility. The Project area consists primarily of active dairy operations, agricultural lands, and disturbed areas. Surrounding land use is dominated by similar agricultural activities, with little to no undeveloped parcels.

Topography
The Project Site is situated on the eastern floor of the Central Valley, at an approximate elevation of 236 feet above mean sea level. The Site is relatively level, with minor variations in topography due to the presence of earthen spoil piles, haystacks, and other dairy-related infrastructure.

Climate
The Project Site experiences a Mediterranean climate characterized by hot, dry summers and mild, wet winters. Average high temperatures range from 54.7°F in January to 96.1°F in July, with summer peaks exceeding 100°F. Average low temperatures vary from 34.6°F in December to 62.5°F in July. Most precipitation occurs between November and April, with an annual average of approximately 9 inches. Winter months may also experience Tule fog, while rainfall is rare during the summer.

Land Use
The Project area consists of an operational dairy facility, with portions of the Site extending into adjacent agricultural fields. Historical imagery indicates that the land has been in agricultural use since at least 1994. The Site is bordered by State Route 43 to the east and Jackson Avenue to the west, with surrounding land primarily used for orchards, cropland, and related agricultural purposes.

Soils

The Project Site is underlain by Wasco sandy loam with 0–5% slopes, a well-draining soil type not classified as hydric. The soils have been significantly altered due to ongoing agricultural and dairy activities and, as a result, no longer maintain their native characteristics.

5.3.3 Regulatory Setting

Federal

Federal Endangered Species Act Of 1973 (USC, Title 16, Sections 1531–1543)

The Federal Endangered Species Act (FESA) and subsequent amendments provide guidance for the conservation of endangered and threatened species and the ecosystems upon which they depend. The FESA defines species as threatened or endangered and provides regulatory protection for listed species. The FESA provides a program for the conservation and recovery of threatened and endangered species as well as the protection of designated critical habitat that USFWS determines is required for the survival and recovery of listed species. Section 9 lists actions that are prohibited under the FESA. Although take of a listed species is prohibited, it is allowed when it is incidental to an otherwise legal activity.

Section 9 prohibits take of listed species of fish, wildlife, and plants without special exemption. The definition of "harm" includes significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns related to breeding, feeding, or shelter. "Harass" is defined as actions that create the likelihood of injury to listed species by disrupting normal behavioral patterns related to breeding, feeding, and shelter significantly.

Section 7 of the FESA requires federal agencies, in consultation with and assistance from the Secretary of the Interior or the Secretary of Commerce, as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction of adverse modification of critical habitat for these species. The USFWS and National Marine Fisheries Service (NMFS) share responsibilities for administering the FESA. Regulations governing interagency cooperation under Section 7 are found in California Code of Regulations (CCR) Title 50, Part 402. If an activity could result in the "take" of a listed species as an incident of an otherwise lawful activity, then a biological opinion can be issued with an incidental take statement that exempts the activity from FESA's take prohibitions.

Section 10 provides a means whereby a nonfederal action with the potential to result in take of a listed species can be allowed under an incidental take permit. Application procedures are found at CFR Title 50, Sections 13 and 17 for species under the jurisdiction of USFWS and CFR, Title 50, Sections 217, 220, and 222 for species under the jurisdiction of NMFS. Section 10 would apply to the Project if take of a species (as defined in Section 9) were determined to occur.

Section 4(a)(3) and (b)(2) of the FESA requires the designation of critical habitat to the maximum extent possible and prudent based on the best available scientific data and after considering the economic impacts of any designations. Critical habitat is defined in section 3(5)(A) of the FESA: 1) areas within the geographic range of a species that are occupied by individuals of that species and contain the primary constituent elements (physical and biological features) essential to the conservation of the species, thus warranting special management consideration or protection; and 2) areas outside of the geographic range of a species at the time of listing but that are considered essential to the conservation of the species.

Migratory Bird Treaty Act (USC, Title 16, Sections 703–711)

The MBTA, first enacted in 1918, is a series of treaties that the United State has with Great Britain (on behalf of Canada), Mexico, Japan, and the former Soviet Union that provide for international migratory bird protection. The MBTA authorizes the Secretary of the Interior to regulate the taking of migratory birds. The act provides that it shall be unlawful, except as permitted by regulations, "to pursue, take, or kill any migratory bird, or any part, nest or egg of any such bird" (U.S. Code Title 16, Section 703). The MBTA currently includes several hundred species and includes all native birds.

Bald And Golden Eagle Protection Act Of 1940 (USC, Title 16, Section 668)

The Bald and Golden Eagle Protection Act (BGEPA) of 1940 protects bald eagles (Haliaeetus leucoephalus) and golden eagle (Aquila chrysaetos) by prohibiting the taking, possession, and commerce of these species and established civil penalties for violation of this act. Take of bald and golden eagles includes to "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." To disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially inferring with normal breeding, feeding, or sheltering behavior (Federal Register [FR], volume 72, page 31132; 50 CFR 22.3).

Federal Clean Water Act (USC, Title 33, Sections 1521–1376)

The Federal Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. Section 401 requires that a Project applicant that is pursuing a federal license or permit allowing a discharge to waters of the U.S. to obtain State Certification of Water Quality, thereby ensuring that the discharge will comply with provisions of the CWA. The Regional Water Quality Control Board (RWQCB) administers the certification program in California. Section 402 establishes a permitting system for the discharge of any pollutant (except dredged or fill material) into waters of the U.S. Section 404 establishes a permit program administered by the United States Army Corps of Engineers (USACE) that regulates the discharge of the dredged or fill material into waters of the U.S., including wetlands. The USACA implementing regulations are found in CFR, Title 33,

Sections 320 and 330. Guidelines for implementation are referred to as the Section 404(b)(1) Guidelines, which were developed by the United States Environmental Protection Agency (EPA) in conjunction with USACE (40 CFR 230). The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

State

California Environmental Quality Act (California Public Resources Code, Sections 21000–21178, And Title 14 CCR, Section 753, And Chapter 3, Sections 15000– 15387)

The California Environmental Quality Act (CEQA) is California's broadest environmental law. CEQA helps guide the issuance of permits and approval of projects. Courts have interpreted CEQA to afford the fullest protection of the environment within the reasonable scope of the statutes. CEQA applies to all discretionary projects proposed to be conducted or approved by a State, County, or City agency, including private projects requiring discretionary government approval.

The purpose of CEQA is to disclose to the public the significant environmental effects of a proposed discretionary project; prevent or minimize damage to the environment through development of project alternatives, mitigation measures, and mitigation monitoring; disclose to the public the agency decision making process to approve discretionary projects; enhance public participation in the environmental review process; and improve interagency coordination.

State CEQA Guidelines Section 15380(b) provides that a species not listed on the federal or State list of protected species nonetheless may be considered rare or endangered for purposed of CEQA if the species can be shown to meet certain specified criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants or animals.

California Endangered Species Act (California Fish and Game Code Section 2050 Et Seq.)

The California Endangered Species Act (CESA) establishes the policy of the State to conserve, protect, restore, and enhance threatened or endangered species and their habitats. The CESA mandates that State agencies should not approve Projects that would jeopardize the continued existence of threatened or endangered species if reasonable and prudent alternatives are available that would avoid jeopardy. For Projects that would result in take of a species listed under the CESA, a project proponent would need to obtain a take permit under Section 2081(b). Alternatively, the CDFW has the option of issuing a Consistency Determination (Section 2080.1) for Projects that would affect a species listed under both the CESA and the FESA, as long as compliance with the FESA would satisfy the "fully mitigate" standard of CESA, and other applicable conditions.

Western burrowing owl became a Candidate species under CESA in October 2024 and is therefore afforded full protection of the Act. Any passive relocation or other action that may result in take requires an Incidental Take Permit from CDFW. Crotch's bumble bee remains a Candidate species and is similarly fully protected.

Porter-Cologne Water Quality Control Act

Under Section 401 of the CWA, the RWQCB must certify that actions receiving authorization under Section 404 of the CWA also meet State water quality standards. The RWQCB regulates waters of the State under the authority of the Porter-Cologne Water Quality Control Act (Porter Cologne Act). The RWQCB requires Projects to avoid impacts to wetlands whenever feasible and requires that Projects do not result in a net loss of wetland acreage or a net loss of wetland function and values. The RWQCB typically requires compensatory mitigation for impacts to wetlands and/or waters of the State. The RWQCB has jurisdiction over waters deemed 'isolated' or not subject to Section 404 jurisdiction under the Solid Waste Agency of Northern Cook County (SWANCC) decision. Dredging, filling, or excavation of isolated waters constitutes a discharge of waste into waters of the State, and such discharges are authorized through an Order of Waste Discharge (or waiver of discharge) from the RWQCB.

Various Sections of The California State Fish and Game Code

Section 460 and Sections 4000–4003

Chapter 5 of the California Fish and Game Code (FGC) describes regulations concerning the take of furbearing mammals, including defining methods of take, seasons of take, bag and possession limits, and areas of the State where take is allowed. Section 4000-4003 defines furbearing mammals, and the issuance of permits by the Department. Sections 460 and 4000 identifies fisher, marten, river otter, desert kit fox and red fox as furbearing mammals, and Section 460 prohibits take of these species at any time. This section of the California Fish and Game Code (FGC) has historically been interpreted to apply to restriction on furbearer trapping permit but has recently been expanded by CDFW to apply to any forms of take and treated as if these species were listed under CESA.

Sections 1600–1616

Under these sections of the FGC, a Project operator is required to notify CDFW prior to any Project that would divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Pursuant to the California Code of Regulations, a "stream" is defined as a body of water that flows at least periodically, or intermittently, through a bed or channel having banks and supporting fish or other aquatic life. Based on this definition, a watercourse with surface or subsurface flows that supports of has supported riparian vegetation is a stream and is subject to CDFW jurisdiction. Altered or artificial watercourses valuable to fish and wildlife are subject to CDFW jurisdiction. CDFW also has jurisdiction over dry washes that carry water during storm events. Preliminary notification and Project review generally occur during the environmental process. When an existing fish or wildlife resource may be substantially

adversely affected, CDFW is required to propose reasonable Project changes to protect the resource. These modifications are formalized in a Streambed Alteration Agreement.

Sections 3511, 4700, 5050, and 5515

The protection of fully protected species are described in Sections 3511, 4700, 5050, and 5515 of the FGC. These statues prohibit take or possession of fully protected species. CDFW is unable to authorize incidental take of fully protected species, except as allowed for in an approved Natural Communities Conservation Plan (NCCP), or through direct legislative action.

Sections 1900–1913 Native Plant Protection Act

California's Native Plant Protection Act (NPPA) requires all State agencies to use their authority to carry out programs to conserve endangered and rare native plants. Provision of the NPPA prohibits taking of listed plants from the wild and requires notification of CDFW at least ten days in advance of any change in land use. This allows CDFW to salvage listed plant species that otherwise would be destroyed. A Project proponent is required to conduct botanical inventories and consult with CDFW during Project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

California Natural Diversity Database (CNDDB) Positive Submission of Data

The CNDDB is populated by voluntary record submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record, or lack of recent occurrence records, in the CNDDB does not mean that a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified biologist/botanist during the appropriate protocol survey methodology are warranted in order to determine whether or not any special-status species are present at or near the Project site.

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, any special-status species and natural communities detected during Project surveys shall be reported to the CNDDB.

Project-specific biological survey data will be incorporated into the statewide CNDDB, consistent with CEQA requirements and CDFW recommendations. All survey results will be submitted to the Lead Agency prior to ground disturbance.

Local

2035 Kings County General Plan

The 2035 General Plan *Resource Conservation Element* contains the following goals, objectives, and action plans relating to biological resources.

- **RC Goal D1:** ***Preserve land that contains important natural plant and animal habitats.***
  - RC OBJECTIVE D1.1: Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
    - *RC Policy D1.1.1*: Evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C. If the results of the Project screening indicate the potential for important biological resources to exist on the site a biological evaluation (consistent with Appendix C) shall be performed by a qualified biologist. If the evaluation indicates that the Project could have a significant adverse impact, mitigation shall be required or the Project will be redesigned to avoid such impacts. Mitigation shall be provided consistent with the California Environmental Quality Act (CEQA), and applicable state and Federal guidelines as appropriate. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.
- **RC GOAL E1:** ***Balance the protection of the County's diverse plant and animal communities with the County's economic needs.***
  - RC OBJECTIVE E1.1: Require mitigation measures to protect important plant and wildlife habitats.
    - *RC Policy E1.1.1*: Complete the inquiry process outlined in Appendix C in the initial Project review for development permits to determine whether the Project is likely to have a significant adverse impact on any threatened or endangered species habitat locations, and to assure appropriate consideration of habitat preservation by development. Maintain current copies of California Department of Fish and Game and United States Fish and Wildlife Service maps showing locations of known threatened and endangered species habitat. If shown to be necessary, require the developer to consult with the California Department of Fish and Game, the United States Fish and Wildlife Service, and the United States Army Corps of Engineers as to potential impacts, appropriate mitigation measures, and required permits.
    - *RC Policy E1.1.2*: Require as a primary objective in the review of development Projects the preservation of healthy native oaks and other healthy native trees.
    - *RC Policy E1.1.3*: Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

5.3.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on biological resources are:

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?

Discussion

Impact #5.3a – 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?
A biological reconnaissance survey of the Project Site and a surrounding buffer area, collectively known as the Biological Study Area (BSA), was conducted on May 17, 2024, by qualified biologists (see Appendix E). The majority of the BSA is located within an active dairy facility, with some portions extending into adjacent cropland. Due to the ongoing agricultural and dairy operations, no special-status plant species are expected to occur within the BSA, and therefore, no impacts to special-status plants are anticipated. However, five special-status wildlife species have the potential to occur within the BSA: western burrowing owl, Swainson's hawk, tricolored blackbird, and San Joaquin kit fox.

Swainson's Hawk
The Project Site does not contain trees suitable for Swainson's hawk nesting; however, mature trees within 0.25 miles of the Site could provide potential nesting habitat. The BSA contains limited foraging habitat due to ongoing dairy operations, but nearby cropland provides additional foraging opportunities. Although a Swainson's hawk was observed flying over the Site during the field survey, no nesting activity was identified within the BSA. The high level of human activity and vehicle traffic associated with the dairy operation likely reduces the likelihood of nesting in the immediate vicinity. However, if an active Swainson's hawk nest is located near the Project Site during construction, noise, vibration, and human presence could

disrupt normal nesting behaviors and potentially lead to nest failure. Implementation of Mitigation Measure BIO-1.1 and 1.2 will minimize potential impacts to Swainson's hawk to a less than significant level.

Burrowing Owl

There was no evidence of western burrowing owls observed within the BSA during the field survey. However, California ground squirrel burrows were identified along the northern edge of the proposed stacking pad location and within adjacent sparsely vegetated areas, providing potential burrowing owl habitat. Although the tall, dense wheat crop within the Project Site does not provide suitable foraging habitat, open areas adjacent to the Site may support burrowing owls. Direct impacts to burrowing owls could occur if an active burrow or transient individual is present within the BSA during construction. Potential impacts include destruction of occupied burrows, disturbance from construction noise and vibration, or alterations to normal foraging and nesting behaviors.

The Project site contains suitable burrowing owl habitat in the form of ruderal/grassland margins, fallow fields, and ground squirrel burrows. Burrowing owls are known to occur in the vicinity, and the site is within the current geographic range of the species. Because western burrowing owl became a candidate species under the California Endangered Species Act in October 2024, the species is afforded full protection of the Act, and any action that could result in "take" (including passive relocation) requires an Incidental Take Permit from CDFW.

Implementation of Mitigation Measures BIO-2.1, 2.2, and 2.3 will reduce potential impacts to burrowing owls to a less than significant level.

Tricolored Blackbird

The Project Site contains a cultivated wheat field that could provide marginal foraging habitat for tricolored blackbirds. However, this habitat is unlikely to support nesting because grains are typically harvested before fledging occurs. Although historical records indicate the presence of tricolored blackbirds within the broader region, no individuals were observed within the BSA during the field survey. The high level of human activity, vehicle traffic, and ongoing dairy operations further reduce the likelihood of nesting or foraging within the BSA. If nesting birds were present, construction-related noise, vibration, and human activity could lead to nest abandonment or failure.

The Project site contains marginal suitable nesting substrate (cattails, bulrushes, or thickets) in drainage features or adjacent irrigated pastures, and the surrounding agricultural landscape provides suitable foraging habitat. While no active colonies were documented on or immediately adjacent to the Project site during 2025 surveys, tricolored blackbirds are highly itinerant, and colonies can form rapidly in response to local conditions. Implementation of Mitigation Measures BIO-3.1, 3.2, 3.3, and 3.4 will reduce potential impacts to tricolored blackbirds and other nesting birds to a less than significant level.

Loggerhead Shrike

The Project Site provides marginal foraging and perching habitat for Loggerhead shrike, a California Species of Special Concern, in the form of open agricultural fields, fence posts, and utility poles. However, suitable nesting habitat is limited due to the absence of dense shrubs or small trees, and the intensive dairy operations and human disturbance further reduce the suitability for nesting or regular use. No loggerhead shrikes were observed within the BSA during the field survey, though the species is known to occur in the region and could potentially forage transiently in the vicinity. If present during construction, activities could disturb foraging or nesting behaviors through noise, vibration, and increased human presence, potentially leading to reduced reproductive success or avoidance of the area.

The Project site contains limited suitable habitat for loggerhead shrike, and no individuals were detected during surveys. Implementation of Mitigation Measures BIO-3.1 and 3.2 will reduce potential impacts to loggerhead shrike and other nesting birds to a less than significant level.

San Joaquin Kit Fox

There was no evidence of San Joaquin kit fox activity within the BSA during the field survey. The Project Site and surrounding landscape have been heavily modified by agricultural and dairy operations, providing minimal denning and foraging habitat. While the San Joaquin kit fox is known to occur within the region and may pass through the Site occasionally as a transient forager, the disturbed nature of the land and lack of suitable habitat make it unlikely that the species would establish a den within the Project Site. Potential direct impacts include injury, mortality, or entrapment in construction trenches or pipes if a kit fox were to enter the Site during construction. No mitigations are required for the San Joaquin kit fox to reduce the impact to a less than significant level.

Crotch's Bumble Bee

A qualified biologist shall conduct a habitat assessment for Crotch's bumble bee. If suitable habitat is present (e.g., small mammal burrows and bunch grasses in untilled areas or field margins), protocol-level surveys following CDFW's Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023) shall be conducted. If the species is detected and impacts cannot be fully avoided, the Project proponent shall consult with CDFW and obtain take authorization prior to disturbance. With Mitigation Measures BIO-4.1 and BIO-4.2, impacts are less than significant.

Nesting Birds

The BSA provides suitable habitat for a variety of nesting bird species, including Swainson's hawk, tricolored blackbird, and other common migratory and resident birds. Although no active nests were observed during the field survey, ground-nesting species such as killdeer may establish nests within the BSA. Implementation of Mitigation Measures BIO-3.1 and BIO-3.2 will reduce potential impacts to nesting birds to less than significant levels.

Western Spadefoot
The Project site is within the geographic range of western spadefoot. Multiple occurrences are documented approximately seven miles east of the site (CDFW 2026 BIOS). Suitable habitat, including grassland, agricultural lands, canals, ditches, pumps, and sumps, may be present. With Mitigation Measures BIO-5.1, BIO 5.2, and BIO-5.3, impacts are less than significant.

Mitigation Measure(s)

Mitigation Measure BIO-1.1 (Swainson's Hawk Protocol Surveys)
Prior to any ground-disturbing activities, and, if construction has not commenced within 12 months of the 2025 surveys, a new set of protocol-level surveys shall be conducted by a qualified biologist following the entire survey methodology in the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Survey reports shall be submitted to Kings County Community Development Agency for review.

Mitigation Measure BIO-1.2 – (Swainson's Hawk No-Disturbance Buffer and Take Authorization) If an active Swainson's hawk nest is discovered within 0.5 miles of the Project site during protocol or pre-construction surveys, a minimum one-half-mile (½-mile / 2,640-foot) no-disturbance buffer shall be established around the nest from March 1 through September 15 or until a qualified biologist determines that the nest is no longer active (e.g., young have fledged and are no longer dependent), whichever is later. No ground-disturbing activities, vegetation removal, or construction-related disturbance shall occur within this buffer during the restricted period.

If site-specific constraints prevent full implementation of the ½-mile buffer, the Project proponent shall immediately consult with CDFW and implement any CDFW-approved alternative buffers or measures. If take cannot be avoided, the Project proponent shall obtain an Incidental Take Permit (ITP) from CDFW prior to any activity that could result in take.

Mitigation Measure BIO-2.1 (Western Burrowing Owl Protocol Surveys) A qualified biologist shall conduct burrowing owl surveys in accordance with the survey methodology contained in the California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation (CDFW, March 7, 2012) for both the breeding season (April 1–August 15) and non-breeding season (August 16–March 31). Surveys conducted for the EIR in 2025 shall be updated if ground disturbance has not commenced within 12 months. Pre-construction take-avoidance surveys shall be conducted no more than 14 days prior to initiation of ground-disturbance. Survey reports shall be submitted to Kings County Community Development Agency.

Mitigation Measure BIO-2.2 (Avoidance of Active Nests)
If pre-construction surveys discover active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet shall be established around all active

owl nests. The buffer areas shall be enclosed with temporary fencing or flagging, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure BIO-2.3 (Western Burrowing Owl Avoidance, Minimization, and Mitigation)

If western burrowing owls are detected during protocol-level or pre-construction surveys, the Project proponent shall implement the following measures in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (2012 or most recent version):

1. No-disturbance buffers shall be established around occupied burrows based on the time of year, level of disturbance, and type of project activity, as specified in the CDFW guidelines.
2. Impacts to occupied burrows and owls shall be avoided to the maximum extent practicable through implementation of buffers, project timing restrictions (e.g., outside the breeding season of February 1–August 31), or other avoidance measures.
3. Passive relocation (burrow exclusion or eviction) is prohibited unless specifically authorized by CDFW through an approved Burrowing Owl Exclusion Plan. Passive relocation shall only be considered during the non-breeding season (September 1–January 31), after surveillance confirms burrows are unoccupied by adults, juveniles, or eggs, and only as a last resort after exhaustion of avoidance and minimization options.
4. If impacts to occupied burrows or owls cannot be fully avoided, the Project proponent shall consult with CDFW and obtain all necessary authorizations, including an Incidental Take Permit under CESA if determined required by CDFW.
5. All buffer maps, exclusion plans, monitoring reports, and permits shall be submitted to Kings County for review prior to initiation of ground-disturbing activities.

This revised measure eliminates the conflict by prioritizing avoidance, restricting passive relocation to CDFW-authorized circumstances, and explicitly requiring permitting for potential take consistent with current regulatory requirements. It provides a clear, enforceable framework while maintaining protectiveness for the species.

Mitigation Measure BIO-3.1 (Nesting Bird Avoidance and Preconstruction Surveys)

CDFW encourages that Project ground-disturbing activities occur during the bird non-nesting season. However, if ground-disturbing or vegetation-disturbing activities must occur during the nesting season (February 1 through September 15), the Project proponent shall ensure that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections (3503, 3503.5, and 3513).

A qualified biologist shall conduct a pre-construction survey for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. Surveys shall cover a sufficient area

around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected, either directly or indirectly, by the Project. In addition to direct impacts, noise, vibration, and movement of workers or equipment could also affect nests. The qualified biologist shall establish a behavioral baseline of all identified nests.

Mitigation Measure BIO-3.2 (Nesting Bird Monitoring, Buffers, and Minimization)
Once Project activities begin, a qualified biologist shall continuously monitor identified nests to detect behavioral changes resulting from the Project. If behavioral changes occur, the work causing that change shall cease immediately and CDFW shall be consulted for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented. These buffers shall remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. A qualified biologist shall advise and support any variance from these buffers and shall notify CDFW in advance of implementing a variance.

Mitigation Measure BIO-3.3 (Focused Tricolored Blackbird Pre-Construction Colony Surveys)
If ground-disturbing activities or vegetation removal are scheduled to occur during the tricolored blackbird nesting season (February 1 – September 15), a qualified biologist shall conduct focused colony surveys of all potential nesting substrate within the Project site. Focused colony surveys shall be conducted no more than 10 days prior to the start of Project construction. If a colony is found, a 300-foot buffer no more than 10 days prior to initiation of construction activities shall be implemented. Surveys shall follow CDFW-approved protocols and include multiple visits during appropriate weather conditions to maximize detection probability. A survey report shall be submitted to the Kings County Community Development Agency within 5 days of survey completion.

Mitigation Measure BIO-3.4 (Tricolored Blackbird No-Disturbance Buffer and Take Authorization)
If an active tricolored blackbird colony is discovered during pre-construction surveys or construction monitoring, a minimum 300-foot no-disturbance buffer shall be established around the colony and maintained until a qualified biologist confirms that fledglings are no longer dependent or the colony has been naturally abandoned. No ground-disturbing activities, vegetation removal, equipment staging, or other construction-related disturbance shall occur within this buffer during the nesting period.

If site-specific constraints prevent full implementation of the 300-foot buffer, the Project proponent shall immediately consult with CDFW and implement any CDFW-approved alternative protective measures. If take of tricolored blackbird cannot be avoided, the Project proponent shall obtain an Incidental Take Permit (ITP) from CDFW prior to any activity that could result in take.

These measures address CDFW recommendations regarding nesting birds and ensure compliance with the Migratory Bird Treaty Act and Fish and Game Code §§ 3503, 3503.5, and 3513. All survey reports and monitoring logs shall be retained on-site and provided to the Lead Agency and CDFW upon request.

Mitigation Measure BIO-4.1 (Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species)
A qualified biologist familiar with Crotch's bumble bee shall conduct a habitat assessment of the Project site. The assessment shall evaluate the presence of potential nesting substrate (small mammal burrows, thatch, bundled grass) and suitable foraging plants. A habitat assessment report shall be submitted to the Kings County Community Development Agency.

Mitigation Measure BIO-4.2 (Crotch's Bumble Bee Protocol Surveys and Take Authorization)
If the habitat assessment determines that potentially suitable habitat is present, a qualified biologist shall conduct protocol-level surveys following the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023) during the appropriate seasonal survey window (typically March–October, weather-dependent). Surveys shall be valid for one year. If Crotch's bumble bee is detected and impacts cannot be fully avoided through project design or timing, the Project proponent shall consult with CDFW. A 50-foot no-disturbance buffer shall be implemented around all small mammal burrows and thatched/bunch grasses. Consultation with CDFW shall occur to discuss Project implementation to avoid take or to acquire appropriate take authorization through a CESA Incidental Take Permit (ITP).

With implementation of Mitigation Measures BIO-4.1 and BIO-4.2, potential impacts to Crotch's bumble bee are reduced to less than significant.

Mitigation Measure BIO-5.1 (Western Spadefoot Habitat Assessment)
A qualified biologist shall conduct a habitat assessment to determine if the Project site and immediate surrounding vicinity contain habitat suitable to support western spadefoot.

Mitigation Measure BIO-5.2 (Western Spadefoot Surveys)
If potentially suitable habitat is identified, a qualified biologist shall conduct focused surveys for western spadefoot using appropriate survey methodologies, prior to any ground-disturbing activities.

Mitigation Measure BIO-5.3 (Western Spadefoot Minimization)
If western spadefoot burrows, cracks, loose soil areas, or other refugia are found to be used by western spadefoot during focused surveys, avoidance is encouraged via delineation and observance of a 50-foot no-disturbance buffer around these resources, including all potential breeding habitat (agricultural sumps and irrigation ditches, even when dry). Avoidance of potential breeding habitat shall occur even when dry, since post-metamorphic western spadefoot juveniles utilize the dried pond bottom as a refuge. If any life stage of western spadefoot is observed, Project activities in the immediate vicinity shall cease, allowing individuals to leave the site on their own accord.

On September 24, 2025, a petition was received to list northern and southern populations of western spadefoot under CESA. If the species becomes a Candidate or is listed, take authorization via a CESA ITP (Fish & G. Code § 2081(b)) may be required if full avoidance cannot be achieved. Early consultation with CDFW is recommended.

With implementation of Mitigation Measures BIO-5.1, BIO-5.2 and BIO-5.3, potential impacts to the Western Spadefoot are reduced to less than significant.

Level Of Significance
Impacts would be *Less Than Significant Impact with Mitigation Incorporated.*

Impact #5.3b – 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 Wildlife or U.S. Fish and Wildlife Service?

The Sozinho Dairy #5 Project is located in an agricultural and developed area that has been extensively modified by ongoing dairy and agricultural operations. The Project Site does not contain any riparian habitats or other sensitive natural communities. The biological survey conducted for the Project did not identify the presence of any riparian habitats or sensitive natural communities on or adjacent to the Site.

The surrounding landscape is dominated by agricultural land, with no natural watercourses or riparian vegetation present within the Project area. Additionally, the Project Site consists primarily of ruderal land that has been disturbed by past and ongoing agricultural activities, which further reduces the potential for the presence of sensitive natural communities.

Given the absence of riparian habitat or other sensitive natural communities on the Project Site, the proposed Project will not have any adverse effects on such habitats. There is *No Impact.*

Mitigation Measure(s)

No mitigation is required.

Level Of Significance
There would be *No Impact.*

Impact #5.3c – 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?

The Sozinho Dairy #5 Project Site does not contain any state or federally protected wetlands, such as marshes, vernal pools, or coastal wetlands. The Project Site has been heavily modified by agricultural and dairy operations, resulting in the absence of natural wetland features. The biological survey conducted for the Project confirmed that no jurisdictional wetlands or non-wetland waters are present on the Site.

The nearest aquatic features to the Project Site, such as the wastewater retention ponds and irrigation ditches, are man-made and do not qualify as protected wetlands under state or Federal regulations. These features are specifically designed and managed for agricultural purposes and are not considered sensitive natural communities.

Since the Project Site does not support any protected wetlands, the proposed Project will not result in the direct removal, filling, hydrological interruption, or any other impact on state or federally protected wetlands. There is *No Impact.*

Mitigation Measure(s)
No mitigation is required.

Level Of Significance
There would be *No Impact.*

Impact #5.3d – 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?

The Sozinho Dairy #5 Project Site is located within an agricultural and developed landscape that has been heavily modified by ongoing farming and dairy operations. The Project Site is primarily composed of ruderal land with limited natural habitat value, and it does not contain any significant natural features, such as rivers, streams, or continuous corridors of native vegetation, that would support the movement of native resident or migratory wildlife species.

The Site is not part of any established wildlife corridor or migratory pathway, and the surrounding land is similarly developed for agriculture, further reducing its potential importance as a movement corridor for wildlife. The Project Site does not contain any aquatic

features that would support native resident or migratory fish species, nor does it provide suitable habitat for native wildlife nurseries.

Although some common terrestrial species, such as birds, small mammals, and possibly reptiles, may occasionally use the Site, the disturbed nature of the landscape and the lack of significant habitat features mean that the Project will not substantially interfere with wildlife movement or the use of the Site as a nursery. The Project's construction and operational activities are not expected to create barriers or significant disruptions to wildlife movement.

Given these factors, the impact of the Project on the movement of native resident or migratory wildlife species, wildlife corridors, or native wildlife nursery sites is considered *Less than Significant*.

Mitigation Measure(s)
No mitigation is required.

Level Of Significance
There would be *a Less than Significant Impact.*

Impact #5.3e – Would the Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

The Project would not conflict with any tree preservation policy or ordinance, preservation policy, or local ordinance which protects native trees. Therefore, no impact would occur. There is *No Impact.*

Mitigation Measure(s)
No mitigation is required.

Level Of Significance
There would be *No Impact.*

Impact #5.3f – 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?

Species or habitats covered within any Habitat Conservation Plan, Critical Habitat Designations, or other approved conservation plans have not been identified within the Project Area. As such, the proposed Project would not be located within an area affected by or subject to a local, regional, or state habitat conservation plan. Therefore, no impact would occur. There is *No Impact.*

Mitigation Measure(s)
No mitigation is required.

Level Of Significance

There would be *No Impact.*

5.4 Cultural and Tribal Resources

5.4.1 Introduction

This section evaluates the potential effect the Project may have on historical resources. The analysis in this section is based on the Cultural Resources Records Search prepared for the Project (Appendix G).

5.4.2 Environmental Setting

Prehistory
The Project Site is located in the southern San Joaquin Valley in an area known to have been the home of the Tachi tribe of the Yokuts. The Tachi Yokuts lived north of Tulare Lake and westward to the hills near Coalinga.

Significant Tulare Lake archaeological sites include the Witt site in southern Kings County (near Dudley Ridge) and the Creighton Ranch site in western Tulare County. Fossilized human bone from the Witt site has been radiometrically dated as being 11,380 to 15,800 years old. The bones of Pleistocene mammals from that site are similarly dated. Several sites have also been identified south and west of Hanford (including three mound sites that were leveled in the 1940s). Other sites have been recorded in the area of Stratford, the area south and west of Lemoore, and in the area surrounding Alpaugh in southwest Tulare County and southeastern Kings County (Wallace, 1993).

Most of the archaeological resources are located in the upper three feet of the subsurface. Throughout most of the valley floor portion of the County, intensive agricultural production has disturbed surface soils to below this depth. Therefore, it is likely that agricultural activities have disturbed most of the archaeological resources. In addition, ardent collection of artifacts by local residents and other collectors has complicated systematic, scientific evaluation of the Tulare Lake archaeological resources.

Historic Period
The Kings County General Plan identifies four sites in the County that are listed on the National Register of Historic Places, and three additional sites that have been designated as California Historical Landmarks. Three of the sites on the National Register are in Hanford: the Taoist Temple; the old County Courthouse; and the Carnegie Library. The fourth site is the Witt archaeological site near Dudley Ridge. The three California Historical Landmarks are the Mussel Slough Tragedy site south of Hardwick; the Kingston Town site north of Hardwick; and the El Adobe de los Robles Rancho west of Lemoore. The County General Plan also identifies thirteen historic sites of local importance. The sites include seven cemeteries and two churches located in Corcoran, Lemoore, Grangeville, and other rural areas in the northern County. Additional sites

include the original site of Lemoore; the Avenal Ranch; Kettleman Hills fossil beds; and First High School on the Kings River.

Records Search

The Southern San Joaquin Valley Information Center (SSJVIC) conducted a Cultural Resources Records Search on April 22nd, 2024. SSJVIC staff researched historical USGS topographic maps, reports of previous cultural resource investigations, archaeological site, and survey base maps, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The full report can be found in Appendix G.

The records search results indicate no cultural resources were previously recorded within the Project boundary or within a 0.5-mile search radius. According to the information within CHRIS' database, there are no recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

Native American Outreach

A request to the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) was sent to identify any known places of the religious, sacred activity or traditional use or gathering areas are present in or near the Project area. The NAHC responded on April 15th, 2024, with a letter, including contact information for local Native American tribal representatives who may have knowledge or interest in sharing information about resources in the Project area and surrounding area. The results of the SLF search was negative.

5.4.3 Regulatory Setting

Federal

Section 106 Of The National Historic Preservation Act

Archaeological resources are protected through the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 300101 et seq.); and its implementing regulation, Protection of Historic Properties (36 CFR Part 800), the Archaeological and Historic Preservation Act of 1974, and the Archaeological Resources Protection Act of 1979. The NHPA authorized the expansion and maintenance of the National Register of Historic Places (NRHP), established the position of State Historic Preservation Officer (SHPO), and provided for the designation of State Review Boards, set up a mechanism to certify local governments to carry out the purposes of the NHPA, assisted Native American tribes to preserve their cultural heritage, and created the Advisory Council on Historic Preservation (ACHP). Prior to implementing an "undertaking" (e.g., issuing a

federal permit), Section 106 of the NHPA requires federal agencies to consider the effects of the undertaking on historic properties and to afford the ACHP and the SHPO a reasonable opportunity to comment on any undertaking that would adversely affect properties eligible for listing in the National Register of Historic Places (NRHP). As indicated in Section 101(d)(6)(A) of the NHPA, properties of traditional religious and cultural importance to a tribe are eligible for inclusion in the NRHP. Under the NHPA, a resource is considered significant if it meets the NRHP listing criteria at 36 Code of Federal Regulations (CFR) 60.4.

National Register of Historic Places

The NRHP was established by the NHPA of 1966, as "an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the Nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment" (CFR 36 Section 60.2). The NRHP recognizes both historic period and prehistoric archaeological properties that are significant at the national, state, and local levels. To be eligible for listing in the NRHP, a resource must be significant in American history, architecture, archaeology, engineering, or culture. A property (districts, sites, buildings, structures, and objects of potential significance) is eligible for the NRHP if it is significant under one or more of the following four established criteria:

- Criterion A: It is associated with events that have made a significant contribution to the broad patterns of our history;
- Criterion B: It is associated with the lives of persons who are significant in our past;
- Criterion C: It embodies the distinctive characteristics of a type, period, or method of construction; represents the work of a master; possesses high artistic values; or represents a significant and distinguishable entity whose components may lack individual distinction; and
- Criterion D: It has yielded, or may be likely to yield, information important in prehistory or history.

Cemeteries, birthplaces, or graves of historic figures; properties owned by religious institutions or used for religious purposes; structures that have been moved from their original locations; reconstructed historic buildings; and properties that are primarily commemorative in nature are not considered eligible for the NRHP unless they satisfy certain conditions. In general, a resource must be at least 50 years of age to be considered for the NRHP, unless it satisfies a standard of exceptional importance. In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance." The NRHP recognizes seven qualities that, in various combinations, define integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

Native American Graves Protection and Repatriation Act Of 1990

The Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 sets provisions for the intentional removal and inadvertent discovery of human remains and other cultural items from federal and tribal lands. It clarifies the ownership of human remains and sets forth a process for repatriation of human remains and associated funerary objects and sacred religious objects to the Native American groups claiming to be lineal descendants or culturally affiliated with the remains or objects. It requires any federally funded institution housing Native American remains or artifacts to compile an inventory of all cultural items within the museum or with its agency and to provide a summary to any Native American tribe claiming affiliation.

State

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the State and is codified at Public Resources Code (PRC) Section 21000 et seq. CEQA requires lead agencies to determine if a proposed project would have a significant effect on the environment, including significant effects on historical or archaeological resources.

Under CEQA (PRC Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment. The CEQA Guidelines (14 California Code of Regulations [CCR] 15064.4) recognizes that historical resources include:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR;
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

The fact that a resource does not meet the three criteria outlined above does not preclude the lead agency from determining that the resource may be a historical resource as defined in PRC Sections 5020.1(j) or 5024.1.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 of CEQA and 14 CCR 15064.4 of the CEQA Guidelines apply. If a project may cause a substantial adverse change (defined as physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired) in the significance of a

historical resource, the lead agency must identify potentially feasible measures to mitigate these effects (14 CCR 15064.4(b)(1), 15064.4(b)(4)).

If an archaeological site does not meet the historical resource criteria contained in the CEQA Guidelines, then the site may be treated as a unique archaeological resource in accordance with the provisions of PRC Section 21083. As defined in PRC Section 21083.2 of CEQA, a unique archaeological resource is an archaeological artifact, object, or site for 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:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If an archaeological site meets the criteria for a unique archaeological resource as defined in PRC Section 21083.2, then the site is to be treated in accordance with the provisions of PRC Section 21083.2, which state that if the lead agency determines that a project would have a significant effect on unique archaeological resources, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place (PRC Section 21083.1(a)). If preservation in place is not feasible, mitigation measures shall be required.

The CEQA Guidelines note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (14 CCR 15064.4(c)(4)).

<u>California Register of Historical Resources</u>

Created in 1992 and implemented in 1998, the California Register of Historical Resources (CRHR) as "an authoritative guide in California 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." Certain properties, including those listed in or formally determined eligible for listing in the NRHP and California Historical Landmarks numbered 770 and higher, are automatically included in the CRHR. Other properties recognized under the California Points of Historical Interest Program, identified as significant in historical resources surveys or designated by local landmarks programs, may be nominated for inclusion in the CRHR. A resource, either an individual property or a contributor to a historic district, may be listed in the CRHR if the State Historical Resources Commission (SHRC) determines that it meets one or more of the following criteria, which are modeled on NRHP criteria:

- Criterion 1. It is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Criterion 2. It is associated with the lives of persons important in our past;
- Criterion 3. It embodies the distinctive characteristics of a type, period, region, or method of construction; represents the work of an important creative individual; or possesses high artistic values; and/or
- Criterion 4. It has yielded, or may be likely to yield, information important in history or prehistory.

Furthermore, under PRC 5024.1, 14 CCR, Section 4852(c), a cultural resource must retain integrity to be considered eligible for the CRHR. Specifically, it must retain sufficient character or appearance to be recognizable as a historical resource and convey reasons of significance. Integrity is evaluated with regard to retention of such factors as location, design, setting, materials, workmanship, feeling, and association. Cultural sites that have been affected by ground-disturbing activities, such as grazing and off-road vehicle use (both of which occur within the project site), often lack integrity because they have been directly damaged or removed from their original location, among other changes.

Typically, a prehistoric archaeological site in California is recommended eligible for listing in the CRHR based on its potential to yield information important in prehistory or history (Criterion 4). Important information includes chronological markers such as projectile point styles or obsidian artifacts that can be subjected to dating methods or undisturbed deposits that retain their stratigraphic integrity. Sites such as these have the ability to address research questions.

<u>California Historical Landmarks</u>

California Historical Landmarks (CHLs) are buildings, structures, sites, or places that have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value and that have been determined to have statewide historical significance by meeting at least one of the criteria listed below. The resource also must be approved for designation by the county board of supervisors (or the city or town council in whose jurisdiction it is located); be recommended by the SHRC; and be officially designated by the Director of California State Parks. The specific standards now in use were first applied in the designation of CHL #770. CHLs #770 and above are automatically listed in the CRHR.

To be eligible for designation as a landmark, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type in the State or within a large geographic region (Northern, Central, or Southern California);
- It is associated with an individual or group having a profound influence on the history of California; or

- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer, or master builder.

California Points of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of historical interest designated after December 1997 and recommended by the SHRC are also listed in the CRHR. No historic resource may be designated as both a landmark and a point. If a point is later granted status as a landmark, the point designation will be retired. In practice, the point designation program is most often used in localities that do not have a locally enacted cultural heritage or preservation ordinance.

To be eligible for designation as a point of historical interest, a resource must meet at least one of the following criteria:

- It is the first, last, only, or most significant of its type within the local geographic region (city or county);
- It is associated with an individual or group having a profound influence on the history of the local area; or
- It is a prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer, or master builder.

Native American Heritage Commission

PRC Section 5097.91 established the Native American Heritage Commission (NAHC), the duties of which include inventorying of places of religious or social significance to Native Americans and identifying known graves and cemeteries of Native Americans on private lands. PRC Section 5097.98 specifies a protocol to be followed when the NAHC receives notification of a discovery of Native American human remains from a county coroner.

California Public Records Act

Sections 6254(r) and 6254.10 of the California Public Records Act were enacted to protect archaeological sites from unauthorized excavation, looting, or vandalism. Section 6254(r) explicitly authorizes public agencies to withhold information from the public relating to "Native American graves, cemeteries, and sacred places maintained by the Native American Heritage Commission." Section 6254.10 specifically exempts from disclosure requests for "records that relate to archaeological site information and reports, maintained by, or in the possession of the Department of Parks and Recreation, the State Historical Resources Commission, the State Lands Commission, the NAHC, another State agency, or a local agency, including the records

that the agency obtains through a consultation process between a Native American tribe and a State or local agency."

California Health And Safety Code, Sections 7050 And 7052

Health and Safety Code, Section 7050.5, declares that, in the event of the discovery of human remains outside of a dedicated cemetery, all ground disturbance must cease and the county coroner must be notified. Section 7052 establishes a felony penalty for mutilating, disinterring, or otherwise disturbing human remains, except by relatives.

California Penal Code, Section 622.5

The California Penal Code, Section 622.5, provides misdemeanor penalties for injuring or destroying objects of historic or archaeological interest located on public or private lands, but specifically excludes the landowner.

Public Resources Code, Section 5097.5

PRC Section 5097.5 defines as a misdemeanor the unauthorized disturbance or removal of archaeological, historic, or paleontological resources located on public lands.

Assembly Bill 52

Assembly Bill (AB) 52, which went into effect on July 1, 2015, requires CEQA lead agencies to engage in early consultation with California Native American tribes on all projects. AB 52 creates a new CEQA resource: Tribal Cultural Resources, which include sites, features, places, cultural landscapes, sacred place, objects, or archeological resources with cultural value to a California Native American tribe that is listed or eligible for listing in the national, California or local registers.

AB 52 requires lead agencies to consider whether a project may cause a substantial adverse change in the significance of a Tribal Cultural Resource and to consider a tribe's cultural values when determining the appropriate environmental assessment, impacts and mitigation. AB 52 can draw upon SB 18's Guidelines and can be completed in tandem.

AB 52 applies to projects with a Notice of Preparation (NOP) or notice of a Negative Declaration or Mitigated Negative Declaration issued on or after July 1, 2015. The California Office of Planning and Research (OPR) must propose and California Natural Resources Agency (CNRA) must adopt revisions to the CEQA Guidelines by July 1, 2016 in order to: (1) separate the consideration of paleontological resources from Tribal Cultural Resources and update the relevant sample questions and (2) add consideration of Tribal Cultural Resources with relevant sample questions.

Local

2035 Kings County General Plan

- **RC GOAL I1:** ***Preserve significant historical and archaeological sites and structures that represent the ethnic, cultural, and economic groups that have lived and worked in Kings County.***
  - RC OBJECTIVE I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.
    - *RC Policy I1.1.2*: Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
    - *RC Policy I1.1.3*: Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
    - *RC Policy I1.1.4*: Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

  - RC OBJECTIVE I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.
    - *RC Policy I1.2.1*: Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance to Public Resources Code 5097.9 and 5097.993.
    - *RC Policy I1.2.2*: Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
    - *RC Policy I1.2.3*: Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
    - *RC Policy I1.2.4*: The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
    - *RC Policy I1.2.5*: The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
    - *RC Policy I1.2.1.6*: The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe"), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development Projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not

desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

5.4.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on cultural resources are:

Would the project:

a) Cause a substantial adverse change in the significance of an historical resource as defined in 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?

Discussion

Impact #5.4a – Would the project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

The SSJVIC conducted a records search on behalf of the Applicant on April 22nd, 2024, to determine if historical or archaeological sites had previously been recorded within the study area. This was to check if archaeologists had systematically surveyed the Project area before the initial study or whether the region of the field Project was known to contain archaeological sites and to be thereby archaeologically sensitive.

The records search results indicate no cultural resources were previously recorded within the Project boundary or within a 0.5-mile search radius. According to the information within CHRIS' database, there are no recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

The Project's construction will include a limited amount of ground disturbance. Although no cultural resources have been identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementing Mitigation Measures CUL-1, CUL-2, and CUL-3 will ensure that impacts on this checklist item will be less than significant with mitigation incorporation. There will be a *less than significant with mitigation incorporation*.

Mitigation Measures

Mitigation Measure CUL-1: Pre-Construction Cultural Survey Requirement

Prior to any construction activities, a qualified professional consultant must conduct a field survey of the project site to determine if any cultural resources are present. The results of this survey must be submitted to the Kings County Community Development Agency for review. If any cultural resources are identified, further consultation with the appropriate authorities, including the Native American Heritage Commission, may be necessary to ensure proper management and preservation of these resources. No ground-disturbing activities shall commence until the survey has been completed and the results have been reviewed by the County.

Mitigation Measure CUL-2: Protection of Cultural Resources

In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Cultural Resources Alert on Project Plans: The project proponent shall note on any plans that require ground disturbing activities that there is a potential for exposing buried cultural resources.
- Pre-Construction Briefing: The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and, on the procedures, to be enacted if resources are found.
- Stop Work Near any Discovered Cultural Resources: The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.
- Mitigation for Discovered Cultural Resources: If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than- significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San

Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken.

- Native American Monitoring: Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities. Tribal participation would be dependent upon the availability and interest of the Tribe.
- Disposition of Cultural Resources: Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-3: Protection of Buried Human Remains.

In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery and the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(b) which states that "…. the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."
- Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin

Valley Information Center.

Level Of Significance
There would be *a Less Than Significant Impact with Mitigation Incorporation.*

Impact #5.4b – Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

No known archaeological resources are located within the Project area. Implementing Mitigation Measures CUL-1, CUL-2, and CUL-3 will ensure that the potential impact on unknown archeological resources will be *Less than Significant with Mitigation Incorporation.*

Mitigation Measures
Implementation of Mitigation Measures MM CUL-1, MM CUL-2, and MM CUL-3.

Level Of Significance
There would be a *Less than Significant Impact with Mitigation Incorporation.*

Impact #5.4c – Would the project disturb any human remains, including those interred outside of dedicated cemeteries?
No known human remains, burials, or cemeteries have been identified within the Project site, and records searches did not indicate their presence. However, although unlikely, subsurface construction activities such as trenching and grading could potentially disturb previously undiscovered human burial sites, possibly in association with archaeological sites. This constitutes a potentially significant impact. If human remains are unearthed during Project construction, the impact could be significant. However, implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 would ensure that the Project does not directly or indirectly destroy previously unknown human remains and that impact remains *less than significant with mitigation incorporation.*

Mitigation Measures
Implementation of Mitigation Measures MM CUL-1, MM CUL-2, and MM CUL-3.

Level Of Significance
There would be a Less than Significant Impact with Mitigation Incorporation.

Criteria for evaluating adverse effects on tribal cultural resources are:

Would the project:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that

is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

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

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.

Impact #5.4d – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is listed or eligible for listing in the CRHR, or in a local register of historical resource defined in PRC Section 5020.1(k).

See also response to Impact #5.4a through #5.4c, above. The County's government-to-government consultation efforts with interested Native American groups are conducted pursuant to AB 52. The cultural resources records search at the Information Center (Appendix G) search conducted by the NAHC did not indicate the presence of tribal cultural resources within or immediately adjacent to the Project site. In the unlikely event tribal cultural resources are discovered during construction within or immediately adjacent to the Project site, implementation of Mitigation Measures MM CUL-1, MM CUL-2, and MM CUL-3 would reduce potential impacts of the Project to tribal cultural resources to less than significant levels.

Mitigation Measures
Implementation of Mitigation Measures MM CUL-1, MM CUL-2, and MM CUL-3.

Level Of Significance
There would be a *Less than Significant Impact with Mitigation Incorporation.*

Impact #5.4e – Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in PRC 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 that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

See responses to Impacts #5.4a through #5.4d, above.

Mitigation Measures
Implementation of Mitigation Measures MM CUL-1, MM CUL-2, and MM CUL-3.

Level Of Significance
There would be a *Less than Significant Impact with Mitigation Incorporation.*

5.5 Energy

5.5.1 Introduction

This section evaluates the potential energy-related impacts of the Project, focusing on the consumption of energy resources during construction and operation, as well as compliance with state and local plans for renewable energy and energy efficiency.

5.5.2 Environmental Setting

The Project is in a rural unincorporated area of Kings County, just east of Hanford. The area is predominantly agricultural and rural in nature. The Site is surrounded by agricultural and dairy uses, with some rural residences to the north.

5.5.3 Regulatory Setting

Federal

Energy Policy and Conservation Act

The Energy Policy and Conservation Act (EPCA) of 1975 was enacted for the purpose of serving the nation's energy demands and promoting conservation methods when feasibly obtainable. Since being enacted on December 22, 1975, EPCA has been amended to:

- Grant specific authority to the President to fulfill obligations of the United States under the international energy program;
- Provide for the creation of a Strategic Petroleum Reserve capable of reducing the impact of severe energy supply interruptions;
- Conserve energy supplies through energy conservation programs, and the regulation of certain energy uses;
- Provide for improved energy efficiency of motor vehicles, major appliances, and certain other consumer products;
- Provide a means for verification of energy data to assure the reliability of energy data; and
- Conserve water by improving the water efficiency of certain plumbing products and appliances.

National Energy Act of 1978

The National Energy Act of 1978 includes the following statutes: Public Utilities Regulatory Policies Act of 1978 (PURPA; Public Law 95-617), Energy Tax Act, National Energy Conservation Policy Act (NECPA), Power Plant and Industrial Fuel Use Act, and the National Gas Policy Act. The Power Plant and Industrial Fuel Use Act restricted the fuel used in power plants; however, these restrictions were lifted in 1987. The Energy Tax Act was superseded by the Energy Policy Acts of 1992 (EPACT92) and 2005. The National Gas Policy Act gave the Federal Energy Regulatory

Commission authority over natural gas production and established pricing guidelines. NECPA set minimum energy performance standards, which replaced those in EPCA and the federal standards preempted those set by the state. NECPA was amended by the EPCA Amendments of 1985. Due to its relevance to electricity considerations, PURPA is discussed in more depth below.

PURPA

The Public Utility Regulatory Policies Act (PURPA) was established in response to the unstable energy climate of the late 1970s. PURPA sought to promote conservation of electric energy. Additionally, PURPA created a new class of non-utility generators, small power producers, from which, along with qualified co-generators, utilities are required to buy power.

PURPA was in part intended to augment electric utility generation with more efficiently produced electricity and to provide equitable rates for electric consumers. Utility companies are required to buy all electricity from a qualifying facility (QF). PURPA expanded participation of non-utility generators in the electricity market and demonstrated that electricity from non-utility generators could successfully be integrated with a utility's own supply. PURPA requires utilities to buy whatever power is produced by QFs (usually cogeneration or renewable energy). The Fuel Use Act of 1978 (FUA) (repealed in 1987) also helped QFs become established. Under the FUA, utilities were not allowed to use natural gas to fuel new generating technologies, but QFs, which were by definition not utilities, were able to take advantage of abundant natural gas and abundant new technologies (such as combined-cycle).

EPACT92

EPACT92 is comprised of 27 titles. It was passed by Congress and set goals, created mandates, and amended utility laws to increase clean energy use and improve overall energy efficiency in the United States. EPACT92 was amended as part of the Energy Conservation and Reauthorization Act of 1998.

Energy Policy Act of 2005

The Energy Policy Act of 2005 addresses energy efficiency; renewable energy requirements; oil, natural gas and coal; alternative-fuel use; tribal energy, nuclear security; vehicles and vehicle fuels; hydropower and geothermal energy; and climate change technology. The act provides revised annual energy reduction goals (two percent per year beginning in 2006), revised renewable energy purchase goals, federal procurement of Energy Star or Federal Energy Management Program designated products, federal green building standards, and fuel cell vehicle and hydrogen energy system research and demonstration.

Energy Independence and Security Act of 2007

EISA was signed into law on December 19, 2007. The objectives for EISA are to move the United States toward greater energy independence and security, increase the production of clean renewable fuels, protect consumers, increase product, building and vehicle efficiency, promote

greenhouse gas (GHG) research, improve the energy efficiency of the federal government, and improve vehicle fuel economy. The renewable fuel standard in EISA established appliance energy efficiency standards for boilers, dehumidifiers, dishwashers, clothes washers, external power supplies, commercial walk-in coolers and freezers; federal buildings; lighting energy efficiency standards for general service incandescent lighting in 2012; and standards for industrial electric motor efficiency.

State

California Building Energy Efficiency Standards: Title 24

California established statewide building energy efficiency standards following legislative action. The legislation required the standards to be cost-effective based on building life cycle and to include both prescriptive and performance-based approaches. The 2005 Building Energy Efficiency Standards were first adopted in November 2003 and took effect October 1, 2005. Subsequently the standards have undergone various updates including 2013, 2016 2019, 2020, and recently 2022. The next code cycle (2025 Energy Code) is under development and will take effect in 2026.

The 2025 Building Energy Efficiency Standards are expected to push further toward building electrification and decarbonization.

SB 1368 – GHG Emissions Performance Standards for Major Power Plant Investments

SB 1368 was passed in September 2006 and requires the CEC to develop and adopt a GHG emissions performance standard for long-term procurement of electricity by local publicly owned utilities. The CPUC and CEC had adopted specific regulations regarding GHG emissions performance standards for electricity service providers. Compliance with these standards is expected to improve fuel efficiency.

Renewables Portfolio Standard (RPS)

California's RPS requires retail sellers of electricity to increase their procurement of eligible renewable energy resources by at least one percent per year so that 20 percent of their retail sales are procured from eligible renewable energy resources by 2017. If a seller falls short each year, they must procure more renewables in succeeding years to make up for the shortfall. Once a retail seller reaches 20 percent renewable resources, they need not increase their procurement in succeeding years. RPS was enacted through SB 1078 – The Renewable Portfolio Standard, signed in September 2002. The CEC and the CPUC are jointly implementing the standard. In 2006, RPS was modified by SB 107 to require retail sellers of electricity to reach the 20 percent renewables goal by 2010. In 2011, RPS was further modified by SB 2 to require retailers to reach 33 percent renewable energy by 2020.

SB 350

SB 350 was approved on October 7, 2015. SB 350 will: (1) increase the standards of the California RPS program by requiring that the amount of electricity generated and sold to retail customers

per year from eligible renewable energy resources be increased to 50 percent by December 31, 2030; (2) require the State Energy Resources Conservation and Development Commission to establish annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses of retail customers by January 1, 2030; (3) provide for the evolution of the Independent System Operator into a regional organization; and (4) require the state to reimburse local agencies and school districts for certain costs mandated by the state through procedures established by statutory provisions. Among other objectives, the legislature intends to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.

Executive Order B-18-12

EO B-18-12 was signed into law on April 25, 2012, and directed state agencies to reduce their grid- based energy purchases by at least 20 percent by 2018, as compared to a 2003 baseline. Pursuant to EO B-18- 12, all new state buildings and major renovations beginning design after 2025 shall be constructed as Zero Net Energy facilities with an interim target for 50 percent of new facilities beginning design after 2020 to be Zero Net Energy. State agencies shall also take measures toward achieving Zero Net Energy for 50 percent of the square footage of existing state-owned building area by 2025 and reduce water usage by 20 percent by 2020. Additionally, the following measures relevant to energy are required:

- Any proposed new or major renovation of state buildings larger than 10,000 square feet shall use clean, on-site power generation, such as solar photovoltaic, solar thermal and wind power generation, and clean back-up power supplies, if economically feasible;
- New or major renovated state buildings and build-to-suit leases larger than 10,000 square feet shall obtain a Leadership in Energy and Environmental Design (LEED) "Silver" certification or higher using the applicable version of LEED;
- New and existing buildings shall incorporate building commissioning to facilitate improved and efficient building operation; and
- State agencies shall identify and pursue opportunities to provide electric vehicle charging stations and accommodate future charging infrastructure demand, at employee parking facilities in new and existing buildings.

California Environmental Quality Act

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in Environmental Impact Reports that are prepared pursuant to CEQA. Energy conservation is described in Appendix F of the CEQA Guidelines in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources. To ensure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects, with emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Projects have long relied on existing energy-reduction requirements in building codes, and on the beneficial side effects of reducing greenhouse gases, to demonstrate that a project's energy use will not be wasteful or inefficient. That approach is no longer sufficient under CEQA, however, without an express assessment (based on facts) of the "before" and "after" energy requirements of proposed projects for construction and operational impacts from all sources (stationary, mobile and area).

Local

2035 Kings County General Plan

The *Resource Conservation Element* of the Kings County General Plan contains the following goals, objectives, and policies related to energy conservation:

- **RC GOAL G1: Encourage the development of oil and gas energy sources provided that they do not degrade environmental quality.**
  - RC OBJECTIVE G1.2: Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.
    - *RC Policy G1.2.2*: Encourage and support efforts to develop commercial alternative energy sources in lower priority agricultural lands within Kings County, when appropriately sited.
    - *RC Policy G1.2.3*: Support the development and use of small-scale alternative energy sources that provide energy for individual homeowners and businesses.
  - RC OBJECTIVE G1.3: Conserve energy to lower energy costs and improve air quality.
    - *RC Policy G1.3.1*: Encourage developers to be innovative in providing landscaping that modifies microclimates, thus reducing energy consumption.
    - *RC Policy G1.3.2*: Require new urban development to provide and maintain shade trees and other landscaping along streets and within parking areas to reduce radiation heating. However, solar access for solar panels shall not be blocked.
    - *RC Policy G1.3.3*: Participate, to the extent feasible, in local and State programs that strive to reduce the consumption of energy.
    - *RC Policy G1.3.4*: Coordinate with local utility providers to provide public education on energy conservation programs.

The *Air Quality Element* of the Kings County General Plan contains the following goals, objectives, and policies related to energy conservation:

- **AQ GOAL D1: Invest in more efficient and effective transportation infrastructure, fleet management and support for trip reduction programs to reduce traffic congestion, vehicle trips and the need for costly new or expanded roadways.**

- **AQ GOAL E1: Minimize air emissions and potential climate change impacts related to energy consumption in the County.**

- AQ OBJECTIVE E1.1 Increase the use of energy conservation features, renewable sources of energy and low-emission equipment in new and existing development projects within the County.
  - *AQ Policy E1.1.1*: Initiate and sustain ongoing efforts with local water and energy utilities and developers to establish and implement voluntary incentive-based programs to encourage the use of energy efficient designs and equipment in new and existing development projects within the County.
  - *AQ Policy E1.1.2*: Initiate and sustain ongoing efforts with agriculture, the building industry, water, and energy utilities and the SJVAPCD to promote enhanced energy conservation and sustainable building standards for new construction.
  - *AQ Policy E1.1.3*: Work with local water and energy utilities and the building industry to develop or revise County design standards relating to solar orientation of building occupancies, water use, landscaping, reduction in impervious surfaces, parking lot shading and such other measures oriented towards reducing energy demand.
  - *AQ Policy E1.1.4*: Actively promote the more efficient location of industries within the County which are labor intensive, utilize cogeneration or renewable sources of energy, support and enhance agricultural activities, and are consistent with other policies of the General Plan.
  - *AQ Policy E1.1.5*: County staff will proactively work with the Cooperative Agricultural Extension office, California Energy Commission, local water and energy utilities, the agricultural industry, and other potential partners to seek funding sources and implement programs which reduce water and energy use, reduce air emissions, and reduce the creation of greenhouse gases.

The *Circulation Element* of the 2035 Kings County General Plan provides the following policy to reduce energy consumption from vehicle usage:

- *C Policy A1.2.1*: Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle emissions, and energy use through improved accessibility to schools, job centers, and commercial services.

5.5.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on energy are:

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?

Discussion

Impact #5.5a – Would the Project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

The Sozinho Dairy #5 Project will require energy consumption during both the construction and operational phases. Without appropriate management, energy use could contribute to environmental impacts. However, the Project has been designed with several energy-efficient features that minimize unnecessary energy consumption and align with applicable state and local energy policies.

During construction, energy will be primarily consumed in the form of diesel fuel and electricity for site preparation, heavy machinery operation, and material transport. Although these activities will be temporary, there is a potential for inefficient energy use if best management practices are not followed. To mitigate potential inefficiencies, standard construction practices such as regular equipment maintenance, minimizing idling times, and scheduling construction phases to optimize fuel use will be implemented. Since the Site is already an operational dairy facility, construction-related energy use will be limited to modifying existing infrastructure rather than developing an entirely new facility, reducing unnecessary energy consumption.

Once operational, the Project will require energy for wastewater treatment infrastructure, feed storage, dairy management, and service vehicles. The BIDA beds and mechanical separators will operate 24 hours per day to treat process water through vermifiltration. While this system introduces continuous energy demand, it is an energy-efficient alternative to conventional wastewater treatment methods, reducing the need for chemical treatments and energy-intensive aeration systems. Additionally, equipment used for feed storage, calf hutch maintenance, and general dairy operations will require electricity, but these demands will be comparable to existing operations. The introduction of on-site calf hutches will reduce overall truck trips by eliminating the need for calves to be transported off-site and returned. Additional vehicle trips will be minimal, with only one new service vehicle required per day and periodic truck trips every other year for BIDA bed maintenance.

The Project incorporates several energy-efficient design features to mitigate its energy consumption impacts. It complies with Title 24, Section 6 of the California Code of Regulations, which sets energy efficiency standards for buildings and equipment. Energy-efficient equipment will be used, particularly in wastewater treatment and manure processing operations. The integration of stormwater and wastewater treatment systems will minimize the need for additional energy-intensive treatment processes. Operational efficiencies, such as the strategic relocation of feed storage areas and organic matter recycling, will reduce the

energy required for material transport and processing. The Project will also reduce vehicle trips through operational improvements, further lowering fuel consumption.

The Project aligns with state and local energy conservation objectives, including the Kings County General Plan, which promotes energy efficiency in agricultural operations. It supports California's Renewables Portfolio Standard and Senate Bill 350, which encourage energy-efficient practices and the reduction of greenhouse gas emissions. Additionally, it complies with the CEQA Guidelines, which require projects to minimize inefficient energy use and support renewable energy reliance. Additionally, the proponent will evaluate rooftop and ground-mounted solar photovoltaic (PV) systems to determine feasibility during detailed design, with incentives pursued via the California Solar Initiative or federal Investment Tax Credit.

While the Project will introduce new energy demands, it has been designed to optimize energy efficiency and minimize wasteful consumption. BIDA beds provide a sustainable wastewater treatment solution with lower long-term energy impacts compared to conventional methods. Construction-related energy use will be temporary and mitigated through best management practices. The operational energy consumption will be consistent with similar dairy operations and offset by efficiency improvements in wastewater treatment, feed storage logistics, and reduced transportation needs. Given these considerations, the Project would not result in a significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Thus, construction of the Project would create Less than Significant Impacts on local and regional energy supplies.

Mitigation Measure(s)
No mitigation is required.

Level Of Significance
There would be *a Less than Significant Impact.*

Impact #5.5b – Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?
The Sozinho Dairy #5 Project does not conflict with or obstruct any state or local plans related to renewable energy or energy efficiency. Instead, the Project aligns with Kings County's 2035 General Plan and various state policies promoting sustainable and energy-efficient practices in agricultural operations.

The Project's design integrates energy-efficient infrastructure and operational improvements that contribute to reducing overall energy consumption. The incorporation of BIDA beds for wastewater treatment offers an environmentally sustainable method of managing process water while minimizing energy use compared to conventional aeration-based wastewater treatment systems. Additionally, the relocation of feed storage areas and the introduction of on-site organic matter processing and recycling help reduce unnecessary energy expenditures, particularly in transportation and material handling.

The Project is consistent with RC Objective G1.2, which promotes the development of sustainable and renewable alternative energy sources, such as biomass energy. The organic matter processing system proposed in the Project contributes to this objective by repurposing manure and organic material for nutrient recycling and land application, reducing reliance on external fertilizers and improving overall resource efficiency.

Under RC Policy G1.2.2, Kings County encourages the development of commercial alternative energy sources in lower-priority agricultural lands when appropriately sited. While the Project Site remains designated for agricultural use, the implementation of energy-efficient waste management and nutrient recycling practices supports the principles of sustainability and energy conservation. The proposed modifications also align with RC Policy G1.2.3, which supports the development and use of small-scale alternative energy sources that benefit individual businesses. The Project's energy efficiency measures, including adherence to Title 24, Section 6 of the California Code of Regulations, demonstrate a commitment to sustainable energy practices at the individual business level.

The Project does not interfere with any state or local renewable energy initiatives, nor does it prevent the development of alternative energy projects in Kings County. By implementing energy-efficient infrastructure, reducing unnecessary transportation-related energy use, and optimizing on-site waste management, the Project is consistent with both local and state energy conservation policies. Therefore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency, and there is *No Impact.*

Mitigation Measures
No mitigation is required.

Level Of Significance
There is *No Impact.*

5.6 Greenhouse Gas Emissions

5.6.1 Introduction

This section evaluates the potential effect the Project may have on greenhouse gas emissions.

5.6.2 Environmental Setting

Kings County is located in the southern San Joaquin Valley. The County is comprised of 1,391 square miles (890,513 acres) of land, predominantly dedicated to agricultural production. The central and eastern portions of the County occupy the relatively flat valley floor; the southwestern portion is characterized by the low hills and intervening valleys of the Kettleman Hills. The 2020 census identified 152,486 people in all of Kings County. In the cities of Avenal, Corcoran, Hanford, and Lemoore, there were approximately 116,291 people. Another 17,539 people live in the rural communities of Armona, Home Garden, Kettleman City, Lemoore NAS, Santa Rosa Rancheria, and Stratford. The remaining 18,656 people live in the agricultural areas. Irrigated agricultural crop production is the dominant land use on the valley floor and grazing and dry farming predominate in the southwest portion. Kings County is ranked as the 12th leading agricultural county in California (25th in the nation) and is in the top 15 milk producing counties in the nation. Kings County shares boundaries with the top four agricultural counties in the state, Fresno, Tulare, Monterey, and Kern.

5.6.3Regulatory Setting

In 1988, the United Nations established the Intergovernmental Panel on Climate Change (IPCC) to evaluate the impacts of global warming and to develop strategies that nations could implement to curtail global climate change. In 1992, the United Nations Framework Convention on Climate Change (UNFCCC) established an agreement with the goal of controlling GHG emissions, including CH4. As a result, the Climate Change Action Plan was developed to address the reduction of GHGs in the United States. The plan consists of more than 50 voluntary programs. Additionally, the Montreal Protocol was originally signed in 1987 and substantially amended in 1990 and 1992. The Montreal Protocol stipulates that the production and consumption of compounds that deplete ozone in the stratosphere (chlorofluorocarbons (CFCs), halons, carbon tetrachloride, and methyl chloroform) were phased out by 2000 (methyl chloroform was phased out by 2005).

Global warming and climate change have received substantial public attention for more than 20 years. For example, the United States Global Change Research Program was established by the Global Change Research Act of 1990 to enhance the understanding of natural and human-induced changes in the earth's global environmental system, to monitor, understand and predict global change, and to provide a sound scientific basis for national and international decision making. Even so, analytical tools have not been developed to determine the effect on

global warming from a particular increase in GHG emissions, or the resulting effects on climate change in a particular area. The scientific tools needed to evaluate the impacts that a specific project may have on the environment are even farther in the future.

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

Federal

Clean Air Act

The Federal Clean Air Act (FCAA) does not specifically regulate GHG emissions; however, on April 2, 2007, the U.S. Supreme Court in *Massachusetts v. U.S. Environmental Protection Agency*, determined that GHGs are pollutants that can be regulated under the FCAA. The EPA adopted an endangerment finding and cause or contribute finding for GHGs on December 7, 2009. Under the endangerment finding, the Administrator found that the current and projected atmospheric concentrations of the six, key, well-mixed GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future generations. Under the cause or contribute finding, the Administrator found that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the GHG pollution which threatens public health and welfare.

Based on these findings, on April 1, 2010, the EPA finalized the light-duty vehicle rule controlling GHG emissions. This rule confirmed that January 2, 2011, is the earliest date that a 2012 model year vehicle meeting these rule requirements may be sold in the United States. On May 13, 2010, the EPA issued the final GHG Tailoring Rule. This rule set thresholds for GHG emissions that define when permits under the Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities. Implementation of the federal rules is expected to reduce the level of emissions from new motor vehicles and large stationary sources.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007, among other key measures, requires the following, which would aid in the reduction of national GHG emissions:

- Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022;
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks; and

- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling discussed above, the George W. Bush Administration issued Executive Order 13432 in 2007 directing the EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, the NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011, and in 2010, the EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, the EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards are projected to achieve 163 grams per mile of CO2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 miles per gallon if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022–2025 in a future rulemaking. On January 12, 2017, the EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to the EPA, this regulatory program will reduce GHG emissions and fuel consumption for the vehicles affected by six to 23 percent over the 2010 baselines. In August 2016, the EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018 through 2027 for certain trailers, and model years 2021 through 2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO2 emissions by approximately 1.1 billion metric tons and reduce oil consumption by up to two billion barrels over the lifetime of the vehicles sold under the program.

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, the EPA published a final rule (effective December 22, 2015) establishing the carbon pollution emission guidelines for existing stationary sources: electric utility generating units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam generating units and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing standards of performance for GHG emissions from new, modified, and reconstructed stationary sources: electric utility generating units (80 FR 64661–65120). The rule prescribes CO2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change, and energy.

Presidential Executive Order 13693

Presidential Executive Order 13693, Planning for Federal Sustainability in the Next Decade, signed in 2015, seeks to maintain federal leadership in sustainability and greenhouse gas emission reductions. Its goal is to reduce agency Scope 1 and 2 GHG emissions by at least 40 percent by 2025, foster innovation, reduce spending, and strengthen communities through increased efficiency and improved environmental performance. Sustainability goals are set for building efficiency and management, energy portfolio, water use efficiency, fleet efficiency, sustainable acquisition and supply chain greenhouse gas management, pollution prevention, and electronic stewardship.

Presidential Executive Order 13783

Presidential Executive Order 13783, Promoting Energy Independence and Economic Growth (March 28, 2017), orders all federal agencies to apply cost-benefit analyses to regulations of GHG emissions and evaluations of the social cost of carbon, nitrous oxide, and methane.

State

California Air Resources Board

CARB is responsible for the coordination and oversight of State and local air pollution control programs in California. The CAAQS was established in 1969 pursuant to the Mulford Carrell Act. These standards, included with the NAAQS, are generally more stringent and apply to more pollutants than the NAAQS. In addition to the criteria pollutants, CAAQS have been established for visibility-reducing particulates, hydrogen sulfide and sulfates.

The State of California legislature has enacted a series of bills that constitute the most aggressive program to reduce GHGs of any state in the nation. Some legislation, such as the

landmark AB 32 California Global Warming Solutions Act of 2006, was specifically enacted to address GHG emissions. Other legislation, such as Title 24 building efficiency standards and Title 20 appliance energy standards, were originally adopted for other purposes such as energy and water conservation, but also provide GHG reductions. This section describes the major provisions of the legislation.

CARB Scoping Plan

CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that would be adopted to reduce California's GHG emissions. CARB determined that achieving the 1990 emissions level would require a reduction of GHG emissions of approximately 29 percent below what would otherwise occur in 2020 in the absence of new laws and regulations (referred to as "business-as-usual"). The Scoping Plan evaluates opportunities for sector-specific reductions; integrates early actions by CARB and the State's Climate Action Team and additional GHG reduction measures by both entities; identifies additional measures to be pursued as regulations; and outlines the adopted role of a cap-and-trade program. Additional development of these measures and adoption of the appropriate regulations occurred through the end of 2013. Key elements of the Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs, as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent by 2020;
- Developing a California cap-and-trade program that links with other programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions (adopted in 2011);
- Establishing targets for transportation-related GHG emissions for regions throughout California and pursuing policies and incentives to achieve those targets (several Sustainable Communities Strategies have been adopted);
- Adopting and implementing measures pursuant to existing State laws and policies, including California's Clean Car Standards, heavy-duty truck measures, the Low Carbon Fuel Standard (amendments to the Pavley Standard adopted 2009; Advanced Clean Car Standard adopted 2012), goods movement measures, and the Low Carbon Fuel Standard (adopted 2009); and
- Creating targeted fees, including a public goods charge on water use, fees on gasses with high global warming potential, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation (CARB, 2008)

In 2012, CARB released revised estimates of the expected 2020 emissions reductions. The revised analysis relied on emissions projections updated considering current economic forecasts that accounted for the economic downturn since 2008, reduction measures already approved and put in place relating to future fuel and energy demand, and other factors. This update reduced the projected 2020 emissions from 596 million metric tons of CO_2e ($MMTCO_2e$)

to 545 $MMTCO_2e$. The reduction in forecasted 2020 emissions means that the revised business-as-usual reduction necessary to achieve AB 32's goal of reaching 1990 levels by 2020 is now 21.7 percent, down from 29 percent. CARB also provided a lower 2020 inventory forecast that incorporated State-led GHG emissions reduction measures already in place. When this lower forecast is considered, the necessary reduction from business-as-usual needed to achieve the goals of AB 32 is approximately 16 percent.

CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes the most recent science related to climate change, including anticipated impacts to California and the levels of GHG emissions reductions necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32.

In 2016, the legislature passed SB 32, which codifies a 2030 GHG emissions reduction target of 40 percent below 1990 levels. With SB 32, the legislature passed companion legislation, AB 197, which provides additional direction for developing the Scoping Plan. On December 14, 2017, CARB adopted a second update to the Scoping Plan. The 2017 Scoping Plan details how the State will reduce GHG emissions to meet the 2030 target set by Executive Order B30-15 and codified by SB 32. Other objectives listed in the 2017 Scoping Plan are to provide direct GHG emissions reductions; support climate investment in disadvantaged communities; and support the Clean Power Plan and other federal actions.

Assembly Bill 32 (California Global Warming Solutions Act)
AB 32 instructs CARB to develop and enforce regulations for the reporting and verification of statewide GHG emissions. AB 32 directed CARB to set a GHG emissions limit based on 1990 levels, to be achieved by 2020. It set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

Senate Bill 32 (California Global Warming Solutions Act Of 2006: Emissions Limit)
Signed into law in September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

Senate Bill 375 (The Sustainable Communities and Climate Protection Act of 2008)
Signed into law on September 30, 2008, SB 375 provides a process to coordinate land use planning, regional transportation plans, and funding priorities to help California meet the GHG reduction goals established by AB 32. SB 375 requires metropolitan planning organizations to include sustainable community strategies in their regional transportation plans for reducing

GHG emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies.

Assembly Bill 1493 (Pavley Regulations and Fuel Efficiency Standards)

California AB 1493, enacted on July 22, 2002, required CARB to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks. Implementation of the regulation was delayed by lawsuits filed by automakers and by the U.S. EPA's denial of an implementation waiver. The U.S. EPA subsequently granted the requested waiver in 2009, which was upheld by the by the U.S. District Court for the District of Columbia in 2011. The regulations establish one set of emission standards for model years 2009–2016 and a second set of emissions standards for model years 2017 to 2025. By 2025, when all rules will be fully implemented, new automobiles will emit 34 percent fewer CO2e emissions and 75 percent fewer smog-forming emissions.

Senate Bill 1368 (Emission Performance Standards)

SB 1368 is the companion bill of AB 32, which directs the California Public Utilities Commission to adopt a performance standard for GHG emissions for the future power purchases of California utilities. SB 1368 limits carbon emissions associated with electrical energy consumed in California by forbidding procurement arrangements for energy longer than five years from resources that exceed the emissions of a relatively clean, combined cycle natural gas power plant. The new law effectively prevents California's utilities from investing in, otherwise financially supporting, or purchasing power from new coal plants located in or out of the State. The California Public Utilities Commission adopted the regulations required by SB 1368 on August 29, 2007. The regulations implementing SB 1368 establish a standard for baseload generation owned by, or under long-term contract to publicly owned utilities, of 1,100 lbs. CO_2 per megawatt-hour (MWh).

Senate Bill 1078 and Senate Bill x1-2 (Renewable Electricity Standards)

SB 1078 requires California to generate 20 percent of its electricity from renewable energy by 2017. SB 107 changed the due date to 2010 instead of 2017. On November 17, 2008, Governor Arnold Schwarzenegger signed Executive Order S-14-08, which established a Renewable Portfolio Standard target for California requiring that all retail sellers of electricity serve 33 percent of their load with renewable energy by 2020. Executive Order S21-09 also directed CARB to adopt a regulation by July 31, 2010, requiring the State's load serving entities to meet a 33 percent renewable energy target by 2020. CARB approved the Renewable Electricity Standard on September 23, 2010 by Resolution 10-23. SBX1-2, which codified the 33 percent by 2020 goal.

Senate Bill 350 (Clean Energy and Pollution Reduction Act Of 2015)

Signed into law on October 7, 2015, SB 350 implements the goals of Executive Order B-30- 15. The objectives of SB 350 are to increase the procurement of electricity from renewable sources from 33 percent to 50 percent (with interim targets of 40 percent by 2024, and 45 percent by 2027) and to double the energy efficiency savings in electricity and natural gas final end uses

of retail customers through energy efficiency and conservation. SB 350 also reorganizes the Independent System Operator (ISO) to develop more regional electricity transmission markets and improve accessibility in these markets, which will facilitate the growth of renewable energy markets in the western United States.

Executive Orders Related to GHG Emissions

California's Executive Branch has taken several actions to reduce GHGs through the use of executive orders. Although not regulatory, they set the tone for the State and guide the actions of State agencies.

Executive Order S-3-05

Executive Order S-3-05 was issued on June 1, 2005, which established the following GHG emissions reduction targets:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

The 2050 reduction goal represents what some scientists believe is necessary to reach levels that will stabilize the climate. The 2020 goal was established to be a mid-term target. Because this is an executive order, the goals are not legally enforceable for local governments or the private sector.

Executive Order S-01-07

Issued on January 18, 2007, Executive Order S-01-07 mandates that a statewide goal shall be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020. In particular, the executive order established a Low Carbon Fuel Standard (LCFS) and directed the Secretary for Environmental Protection to coordinate the actions of the California Energy Commission, CARB, the University of California, and other agencies to develop and propose protocols for measuring the "life-cycle carbon intensity" of transportation fuels. CARB adopted the Low Carbon Fuel Standard on April 23, 2009.

Executive Order S-13-08

Issued on November 14, 2008, Executive Order S-13-08 facilitated the California Natural Resources Agency development of the 2009 California Climate Adaptation Strategy. Objectives include analyzing risks of climate change in California, identifying and exploring strategies to adapt to climate change, and specifying directions for future research.

Executive Order S-14-08

Issued on November 17, 2008, Executive Order S-14-08 expands the State's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S- 21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring 33 percent of electricity sold in the State to come from renewable energy by 2020. CARB adopted the

"Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-21-09

Issued on July 17, 2009, Executive Order S-21-09 directs CARB to adopt regulations to increase California's Renewable Portfolio Standard (RPS) to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California RPS Program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Executive Order B-30-15

Issued on April 29, 2015, Executive Order B-30-15 established a California GHG reduction target of 40 percent below 1990 levels by 2030 and directs CARB to update the Climate Change Scoping Plan to express the 2030 target in terms of MMCO2e. The 2030 target acts as an interim goal on the way to achieving reductions of 80 percent below 1990 levels by 2050, a goal set by Executive Order S-3-05. The executive order also requires the State's Climate Adaptation Plan to be updated every three years and for the State to continue its climate change research program, among other provisions. With the enactment of SB 32 in 2016, the legislature codified the goal of reducing GHG emissions by 2030 to 40 percent below 1990 levels.

California Regulations and Building Codes

California has a long history of adopting regulations to improve energy efficiency in new and remodeled buildings. These regulations have kept California's energy consumption relatively flat even with rapid population growth.

Title 20 Appliance Efficiency Regulations

The appliance efficiency regulations (California Code of Regulations Title 20, Sections 1601-1608) include standards for new appliances. Twenty-three categories of appliances are included in the scope of these regulations. These standards include minimum levels of operating efficiency, and other cost-effective measures, to promote the use of energy- and water-efficient appliances.

Title 24 Building Energy Efficiency Standards

California's Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations Title 24, Part 6) was first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficient technologies and methods. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2016 Building Energy Efficiency Standards approved on January 19, 2016 went into effect on January 1, 2017. The 2019 Building Energy Efficiency Standards were adopted on May 9, 2018 and take effect on January 1, 2020. Under the 2019 standards, homes will use about 53 percent less energy and

nonresidential buildings will use about 30 percent less energy than buildings under the 2016 standards.

Title 24 California Green Building Standards Code

The California Green Building Standards Code (California Code of Regulations Title 24, Part 11 code) commonly referred to as the CALGreen Code, is a statewide mandatory construction code developed and adopted by the California Building Standards Commission and the Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency/conservation, material conservation and resource efficiency, and environmental quality. CALGreen also provides voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code went into effect January 1, 2017.

Local

San Joaquin Valley Air Pollution Control District

SJVAPCD is the primary agency responsible for addressing air quality concerns in Fresno County—its role is discussed further in Section 4.3, Air Quality. SJVAPCD recommends methods for analyzing project generated GHGs in CEQA analyses and offers multiple potential GHG reduction measures for land use development projects. SJVAPCD has developed thresholds of significance to provide a uniform scale to measure the significance of GHG emissions from land use and stationary source projects in compliance with CEQA and AB 32. SJVAPCD's goals in developing GHG thresholds include ease of implementation; use of standard analysis tools; and emissions mitigation consistent with AB 32.

2035 Kings County General Plan

The Kings County General Plan Air Quality Element and Land Use Element includes the following Goals, Objectives, and Action Plans regarding greenhouse gas emissions:

- *LU Policy B1.2.2*: Maintain the Limited Agriculture designation around community districts until substantial build out of a community district has occurred according to an adopted community plan, and consideration of new locations for urban uses is necessary to accommodate additional population growth.
- *LU Policy C1.1.1*: Urban type land uses such as residential, commercial, and industrial that are located within Rural Interface areas shall remain limited to the previously defined extent of those land use designation areas. Minor adjustments between land uses may be considered so long as land use changes do not result in the expansion of Rural Residential zoning.
- *LU Policy D1.*2.2: Prioritize infill development of vacant and underutilized parcels within the existing special district boundaries where water and sewer service are available to reduce outward growth pressure and costly expansion of district facilities.

- ***AQ GOAL C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.***
  - AQ OBJECTIVE C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed Projects within the County.
    - *AQ Policy C1.1.1*: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
    - *AQ Policy C1.1.2*: Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.
    - *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.

- ***AQ GOAL G1: Reduce Kings County's proportionate contribution of greenhouse gas emissions and the potential impact that may result on climate change from internal governmental operations and land use activities within its authority.***
  - AQ OBJECTIVE G1.1: Identify and achieve greenhouse gas emission reduction targets consistent with the County's proportionate fair share as may be allocated by ARB and KCAG.
    - *AQ Policy G1.1.1*: As recommended in ARB's Climate Change Adopted Scoping Plan (December 2008), the County establishes an initial goal of reducing greenhouse gas emissions from its internal governmental operations and land use activities within its authority to be consistent with ARB's adopted reduction targets for the year 2020. The County will also work with KCAG to ensure that it achieves its proportionate fair share reduction in greenhouse gas emissions as may be identified under the provisions of SB 375 (2008 Chapter 728) for any projects or activities requiring approval from KCAG.

5.6.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects related to greenhouse gases are:

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?

Discussion

Global climate change refers to changes in average climatic conditions on earth, including temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in the average temperature of the earth's surface and atmosphere, which in turn can cause other climatic changes, such as a shift in the frequency and intensity of rainfall or hurricanes. Global warming does not necessarily imply that all locations will be warmer. Some specific, unique, locations may be cooler even though the world, on average, is warmer.

While global warming can be caused by natural processes, there is a general scientific consensus that most current global warming is the result of human activity on the planet. This man-made, or anthropogenic, warming is primarily caused by increased emissions of greenhouse gases ("GHGs") that keep the earth's surface warm. This is called "the greenhouse effect." The greenhouse effect and the role GHGs play in it are described below.

The Greenhouse Effect

Gases that trap heat in the atmosphere are called GHGs, analogous to the way a greenhouse retains heat. The accumulation of GHGs in the atmosphere regulates the earth's temperature. The GHGs absorb longwave radiant energy reflected by the earth, which warms the atmosphere. GHGs also radiate longwave energy both upward to space and back down toward the surface of the earth. The downward part of this longwave radiation that is absorbed in the atmosphere is known as the "greenhouse effect." Without the natural heat trapping effect of GHG, the earth's surface would be cooler by about 34 degrees Centigrade (°C). It is believed that emissions from human activities, such as electricity production and vehicle use, have elevated the concentration of these gases in the atmosphere beyond the level of naturally occurring concentrations. Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snowpack, rise of sea levels, more extreme heat days per year, and more drought years.

The six major GHGs identified by the Kyoto Protocol are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulfur hexafluoride (SF_6), haloalkanes (HFCs), and perfluorocarbons (PFCs). The effect each of these gases has on global warming is a combination of the volume of their emissions and their global warming potential (GWP). The global warming potential (GWP) is the potential of a gas or aerosol to trap heat in the atmosphere. Individual GHG species have varied GWP and atmospheric lifetimes.

The most important GHG in human-induced global warming is CO_2. While many gases have much higher GWPs than the naturally occurring GHGs, CO_2 is emitted in such vastly higher quantities than other GHGs that it accounts for 85 percent of the GWP of all GHGs emitted by the United States. CO_2 is an odorless, colorless gas, which has both natural and anthropogenic

sources. Natural sources include the following: respiration of bacteria, plants, animals, and fungus; evaporation from oceans; decomposition of dead organic matter; and volcanic outgassing. Anthropogenic sources of CO_2 are from burning coal, oil, natural gas, and wood. In addition to the sheer increase in the volume of its emissions, CO_2 is a major factor in human-induced global warming because of its lifespan in the atmosphere of 50 to 200 years.

CH_4 is a flammable gas and is the main component of natural gas and of the biogas from this project. When one molecule of CH_4 is burned in the presence of oxygen, one molecule of CO_2 and two molecules of water are released. A natural source of CH_4 is from the anaerobic decay of organic matter. Geologic deposits, known as natural gas fields, also contain CH_4, which is extracted for fuel. Other sources are from rice production, gas mining, landfills, fermentation of manure, and cattle. CH_4 has a relatively short atmospheric lifespan of only 12 years, but has a higher GWP than CO_2.

N_2O, also known as laughing gas, is a colorless greenhouse gas. Higher concentrations of N_2O can cause euphoria, dizziness, and slight hallucinations. N_2O is produced by microbial processes in soil and water, including those reactions that occur in fertilizer containing nitrogen. In addition to agricultural sources, some industrial processes (nitric acid production, nylon production, fossil fuel-fired power plants, and vehicle emissions) also contribute to its atmospheric load. It is used in racecars, rocket engines, and as an aerosol spray propellant. Nitrous oxides' 120-year atmospheric lifespan increases its role in global warming. Other contributing GHGs have little or no relationship to this project.

Significance Criteria

To determine whether a proposed project could create a potential CEQA impact, local, State, and federal agencies have developed various means by which a project's impacts may be measured and evaluated. Such means can generally be categorized as follows:

- Thresholds of significance adopted by air quality agencies to guide lead agencies in their evaluation of air quality impacts under the CEQA;
- Regulations established by air districts, CARB, and EPA for the evaluation of stationary sources when applying for Authorities to Construct, Permits to Operate, and other permit program requirements (e.g., New Source Review);
- Thresholds utilized to determine if a project would cause or contribute significantly to violations of the ambient air quality standards or other concentration-based limits; and
- Regulations applied in areas where severe air quality problems exist.

Global Climate Change Thresholds of Significance

On December 17, 2009, SJVAPCD adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA (San Joaquin Valley Air Pollution Control District, 2009), which outlined the SJVAPCD's methodology for assessing a project's

significance for GHGs under CEQA. The following criteria were outlined in the document to determine whether a project could have a significant impact:

- Projects determined to be exempt from the requirements of CEQA would be determined to have a less than significant individual and cumulative impact for GHG emissions and would not require further environmental review, including analysis of project specific GHG emissions. Projects exempt under CEQA would be evaluated consistent with established rules and regulations governing project approval and would not be required to implement Best Performance Standards (BPS);
- Projects complying with an approved GHG emission reduction plan or GHG mitigation program which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement BPS;
- Projects implementing Best Performance Standards would not require quantification of project specific GHG emissions. Consistent with CEQA Guidelines, such projects would be determined to have a less significant individual and cumulative impact for GHG emissions;
- Projects not implementing Best Performance Standards would require quantification of project specific GHG emissions and demonstration that project specific GHG emissions would be reduced or mitigated by at least 29 percent, compared to Business-as-Usual (BAU), including GHG emission reductions achieved since the 2002-2004 baseline period. Projects achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG; and
- Notwithstanding any of the above provisions, projects requiring preparation of an Environmental Impact Report for any other reason would require quantification of project specific GHG emissions. Projects implementing BPS or achieving at least a 29 percent GHG emission reduction compared to BAU would be determined to have a less than significant individual and cumulative impact for GHG.

Impact #5.6a – Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

The Sozinho Dairy #5 Project is expected to generate GHG emissions during both its construction and operational phases. However, due to the implementation of best management practices, innovative wastewater treatment technologies, and operational

efficiencies, the Project's overall impact on GHG emissions is expected to be less than significant.

During the construction phase, GHG emissions will primarily be generated by construction equipment, vehicles, and machinery operating on-site. These activities will release carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) due to fuel combustion and site preparation activities. However, these emissions will be temporary and limited to the duration of construction. Once construction is complete, these emissions will cease.

During the operational phase, the Project will continue to generate GHG emissions associated with dairy operations, manure management, vehicle use, and energy consumption. Dairy facilities inherently produce methane from manure decomposition, as well as carbon dioxide from fuel use in transportation and equipment operations. However, several key design features and best performance standards have been integrated into the Project to mitigate and minimize GHG emissions:

1. *Implementation of BIDA Beds for Wastewater Treatment*: The Project will incorporate a vermicomposting-based filtration system using earthworms, microbes, and wood chips to treat process water. This aerobic treatment process significantly reduces methane emissions compared to traditional anaerobic lagoons, which are known to produce high levels of methane due to oxygen-limited decomposition. By utilizing BIDA beds, the Project will effectively decrease its overall methane emissions.
2. *Manure Management and Organic Matter Processing*: The Project will establish dedicated manure processing and drying areas that will help minimize the anaerobic decomposition of manure, which is a key source of methane and nitrous oxide emissions. Regular corral scraping and dry manure storage in graded areas will further reduce the formation of methane-producing conditions.
3. *Reduction in Transportation-Related Emissions*: The Project has optimized feed storage and calf housing locations within the Site to reduce the number of truck trips required for animal transport and feed deliveries. Additionally, the Project eliminates the need for off-site calf transport, which will lower fuel consumption and associated CO_2 emissions from vehicle operations. While the biannual vermicomposting bed cleanout will require limited additional truck trips, the overall reduction in transportation needs will help offset this impact.
4. *Dust and Odor Control Measures*: The Project includes dust suppression measures such as gravel and decomposed granite surfaces around the vermifiltration beds, which will minimize airborne particulates. Odor from the wastewater treatment process will be mitigated through regular tilling of the BIDA beds, ensuring proper aeration to prevent anaerobic conditions that can contribute to methane emissions.
5. *Energy Efficiency Measures*: The Project will utilize mechanical separators, lift stations, and wastewater processing infrastructure that are designed to operate with optimal energy efficiency, reducing electricity consumption. California's Renewable Portfolio

Standard (RPS) requires that an increasing portion of the state's energy grid be sourced from renewable energy, which will further mitigate indirect GHG emissions from the Project's electricity use.

6. *Consistency with Local and Statewide GHG Reduction Goals*: The Project aligns with the California Global Warming Solutions Act (AB 32) and Senate Bill 32, which set targets for GHG reductions. Additionally, the SJVAPCD provides Best Performance Standards for dairy operations to meet emission reduction goals. Given that the Project incorporates emission-reducing technologies and operational improvements, it is expected to comply with applicable local, state, and federal regulations aimed at mitigating climate change impacts.
7. *No Emissions of Certain GHGs*: The Project will not result in the emissions of hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6), the other gases identified as GHGs under AB 32. These gases are primarily associated with industrial and refrigeration processes, which are not part of the Project's operations.

Based on emission reduction strategies and regulatory compliance, the Sozinho Dairy #5 Project is not expected to generate GHG emissions that would have a significant impact on the environment. The incorporation of BIDA beds, manure processing improvements, transportation efficiencies, and dust/odor control measures ensures that the Project will align with California's climate action goals and contribute to reducing overall GHG emissions in Kings County.

Mitigation Measure(s)
No mitigation is required.

Level Of Significance
There would be *a Less than Significant Impact.*

Impact #5.6b – Would the project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

The Sozinho Dairy #5 Project will not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. The Project aligns with federal, state, and local climate action strategies, including the California Global Warming Solutions Act (AB 32), Senate Bill 32 (SB 32), the CARB Scoping Plan, and the SJVAPCD Guidelines. The Project incorporates Best Management Practices (BMPs) and emission reduction strategies that support state and regional climate goals while enhancing agricultural sustainability.

Consistency with CARB GHG Emission Reduction Strategies
CARB has established multiple strategies aimed at reducing GHG emissions across various sectors, including transportation and fuel use. The Sozinho Dairy #5 Project aligns with these reduction strategies as follows:

Vehicle Climate Change Standards (AB 1493 – Pavley Regulations)
The Pavley regulations set stricter fuel efficiency standards for passenger vehicles and light-duty trucks, aiming to reduce CO_2 emissions from transportation.

The Project supports these regulations by minimizing transportation emissions through optimized feed storage, on-site calf housing, and reduced off-site transport needs. By eliminating calf transport trips, the Project reduces reliance on vehicle transportation, lowering overall GHG emissions from fuel combustion.

Diesel Anti-Idling Regulations
CARB's Diesel Anti-Idling rule limits unnecessary idling of diesel-powered vehicles to reduce emissions from heavy-duty trucks.

The Project is expected to comply with these regulations by ensuring that delivery and service vehicles minimize idling during feed, manure, and livestock transport operations. Additionally, the limited increase in vehicle trips ensures that idling emissions remain minimal.

Other Light-Duty Vehicle Technology (2017 Model Year & Beyond)
California's vehicle emissions standards require new light-duty vehicles to phase in lower GHG emissions through improved fuel efficiency and cleaner technology.

The Project will contribute to compliance by utilizing modern service vehicles and reducing unnecessary transport trips through on-site operational improvements. These measures align with the state's efforts to reduce per-vehicle emissions.

Alternative Fuels and Biodiesel Blends
CARB regulations aim to increase biodiesel use by 1% to 4% in California diesel fuel.

The Project may contribute to compliance by encouraging fuel providers and service vehicles to use biodiesel blends where feasible. Additionally, by reducing overall vehicle trips, the Project helps offset fossil fuel consumption, further supporting CARB's alternative fuel initiatives.

Heavy-Duty Vehicle Emission Reduction Measures
CARB has mandated improvements in the efficiency of heavy-duty vehicles to lower GHG emissions. This includes aerodynamic enhancements, tire inflation requirements, and driver education programs for fuel efficiency.

The Project aligns with this initiative by limiting the frequency of heavy-duty vehicle use, reducing the number of necessary hauling trips for manure, feed, and dairy operations. Additionally, shorter on-site transport distances contribute to fuel conservation and reduced emissions.

Compliance with Local and State Climate Plans

The Sozinho Dairy #5 Project is consistent with the SJVAPCD Guidelines, which recommend Best Performance Standards (BPS) for GHG mitigation in dairy operations. The Project meets these standards by:

- Implementing BIDA Beds, which significantly reduce methane emissions from wastewater treatment.
- Enhancing manure management practices to prevent prolonged anaerobic decomposition, which would otherwise generate methane and nitrous oxide emissions.
- Reducing transportation emissions through on-site calf housing and storage efficiencies, aligning with regional air quality goals.

The Project also supports the Kings County General Plan, which emphasizes sustainable agricultural practices and GHG reductions through improved wastewater management, air quality strategies, and land-use planning. The Project's focus on efficient resource utilization, manure processing improvements, and groundwater protection ensures that it does not conflict with any applicable GHG reduction policies.

The Sozinho Dairy #5 Project is fully compliant with CARB's GHG emission reduction strategies and applicable climate policies. By reducing transportation emissions, improving manure management, and implementing advanced wastewater treatment technologies, the Project aligns with statewide and regional goals aimed at mitigating climate change. Additionally, the Project does not involve industrial activities that would generate hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), or sulfur hexafluoride (SF_6)—three potent GHGs regulated under AB 32. Therefore, the Project will not conflict with any adopted plan, policy, or regulation intended to reduce GHG emissions, and there is *No Impact*.

Mitigation Measure(s)

No mitigation is required.

Level Of Significance

There is *No Impact.*

5.7 Hazards and Hazardous Materials

5.7.1 Introduction

This section evaluates the potential effect the Project may have due to Hazards and Hazardous Materials. The discussion is based on findings from the Initial Study for the Sozinho Dairy #5 Project, the Hazardous Materials Business Plan (HMBP), the Waste Management Plan (Appendix H), and comments received from the Kings County Environmental Health Services and California Geologic Energy Management Division (CalGEM) which are included as appendices to this EIR.

5.7.2 Environmental Setting

The Sozinho Dairy Project is located in a rural agricultural area of Kings County. The Project involves modifications to an existing dairy facility, including the addition of wastewater processing beds (BIDA beds), mechanical separators, feed storage areas, animal housing, and organic matter processing areas. Hazardous materials used on-site include bulk quantities of fuel, lube oils, waste oil, heavy equipment fluids, welding gases, and other substances typical of dairy operations. Hazardous wastes, such as used oil, oil filters, waste antifreeze, and batteries, are generated and managed in accordance with state and local regulations. The nearest sensitive receptor, a single-family residence, is approximately 250 feet from the dairy boundary. The nearest school, Kit Carson Union Elementary School, is approximately 2 miles north, and the Site is not within an airport land use plan or near a public airport. The Site is not located in a Very High Fire Hazard Severity Zone (FHSZ) or a State Responsibility Area (SRA), and the risk of wildland fires is low due to the flat, agricultural landscape.

A review of the CalGEM Well Finder database indicates no oil, gas, or geothermal wells are located within the Project parcel boundaries or vicinity, as confirmed in CalGEM's enclosure to their October 17, 2025, comment letter. The site is situated in an area with no recorded history of oil or gas extraction activities that could pose subsurface hazards, such as gas migration or structural instability. Baseline soil and groundwater testing has not identified hydrocarbon contamination, further supporting the absence of well-related risks under existing conditions.

5.7.3 Regulatory Setting

Federal

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.).

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration

The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to assure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.)

The Toxic Substance Control Act was enacted by Congress in 1976 and authorized the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

State

Hazardous Waste Control Law, Title 26

The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11

Title 22 of the California Code of Regulations contains regulations for identifying and classifying hazardous wastes. The CCR defines waste as hazardous if it has the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Health and Safety Code

California Health and Safety Code (HSC) Chapter 6.95 and Title 19 CCR §5030.1 require facilities handling hazardous materials above thresholds (55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of gas) to submit an HMBP to the California Environmental Reporting System (CERS). The California Emergency Services Act coordinates multi-agency emergency response plans.

California Emergency Services Act

The California Emergency Services Act created a multi-agency emergency response plan for California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

California Geologic Energy Management Division

Relevant state regulations governing oil, gas, and geothermal wells include Public Resources Code (PRC) sections 3106 (authority over drilling, operation, maintenance, and abandonment to prevent damage to life, health, property, natural resources, and waters), 3208 (adequate abandonment requirements), 3208.1 (re-abandonment responsibilities for wells impacted by development), 3224 (authority to order well work), and 3236, 3236.5, and 3359 (civil and criminal penalties for violations). Compliance with these provisions is supported by California Code of Regulations (CCR), title 14, sections 1723 et seq. (onshore well abandonment guidelines) and 1745 et seq. (offshore wells), including section 1723.5 (casing cut-off depths of 5 to 10 feet below final grade).

Local

Kings County Department of Public Health

The Kings County Department of Public Health implements the Hazardous Waste Program and the Hazardous Waste Treatment/Tiered Permit Program throughout Kings County. These programs aim to ensure that all hazardous waste generated in Kings County businesses is appropriately handled, recycled, treated, stored, and disposed. Environmental Health staff inspects facilities that generate hazardous waste, investigates reports of illegal hazardous waste disposal, and responds to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs to inform industries and residents about the laws and regulations relating to the safe disposal of hazardous waste.

Kings County Environmental Health Services

The Kings County Environmental Health Services, as the Certified Unified Program Agency (CUPA), oversees hazardous materials and waste programs.

2035 Kings County General Plan

The Kings County 2035 General Plan *Health & Safety Element* includes the following goals, objectives, and policies on hazards and hazardous materials and have been relevant to this analysis:

- ***HS GOAL A1: Preventative measures reduce the potential impacts of natural hazards upon people's lives, property, and the environment.***
  - HS OBJECTIVE A1.1: Coordinate County General Plan Health and Safety Element updates with the Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan.
    - *HS Policy A1.1.1*: Collaborate with the Kings County Office of Emergency Services to conduct joint updates of the Kings County Multijurisdictional Multi-Hazard Mitigation Plan and the Health and Safety Element of the County's General Plan.

- *HS Policy A1.1.2*: Integrate mitigation measures of the Kings County Multi-jurisdictional Multi-Hazard Mitigation Plan into the Health and Safety Element policies where applicable and relevant to County operational areas of responsibility.

➢ HS OBJECTIVE A1.3: Limit growth and development in hazard areas to minimize new areas susceptible to higher risk of natural hazards.

- *HS Policy A1.3.1*: Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the Health and Safety Element to improve long term loss prevention.

❖ ***HS GOAL B1: Promote the health and well being of County residents, and support healthy living environments, physical activity opportunities, medical services, and readily available nutritious food sources.***

➢ HS OBJECTIVE B1.5: Ensure adequate protection of County residents from new generations of toxic or hazardous waste substances.

- *HS Policy B1.5.1*: Evaluate development applications to determine the potential for hazardous waste generation and be required to provide sufficient financial assurance that is available to the County to cover waste cleanup and/or site restoration in instances where the site has been abandoned or the business operator is unable to remove hazardous materials from the site.

5.7.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on hazards and hazardous materials are:

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code 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 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 significant risk of loss, injury or death involving wildland fires?

Discussion

Impact #5.7a - Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

The Project involves the routine use of hazardous materials typical of dairy operations, including fuels, oils, and welding gases, which exceed reportable quantities (55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of gas) as defined by HSC Chapter 6.95. Hazardous wastes, such as used oil, filters, antifreeze, and batteries, are generated and managed per HSC Chapter 6.5 and Title 22 CCR.

The Kings County Environmental Health Services noted that the HMBP submitted to CERS was marked "Not Accepted," requiring a resubmittal. The Project proponent will revise and resubmit the HMBP, including facility inventory, site map, and emergency response plan, and register as a hazardous waste generator with Kings County Environmental Health Services prior to operation. These measures ensure compliance with state and local regulations, minimizing risks from routine handling. The Waste Management Plan prepared for this Project (Appendix H) outlines proper storage, transport, and disposal procedures, with waste handled by the Kings Waste and Recycling Authority (KWRA). The distance to the nearest sensitive receptor and the absence of significant spill or leak risks due to containment measures (e.g., lined bins, containment structures) reduce potential public or environmental hazards. However, to ensure no significant hazards occur, mitigation measures are required to formalize compliance with HMBP and hazardous waste regulations.

Mitigation Measure(s)

Mitigation Measure HAZ-1

The Project proponent shall submit a complete Hazardous Materials Business Plan (HMBP) to the California Environmental Reporting System addressing all agency comments and including facility inventory, site map, emergency response plan, and other required elements per HSC Chapter 6.95 and Title 19 CCR §5030.1-5030.1. The proponent shall register with Kings County Environmental Health Services as a hazardous waste generator prior to operation and manage hazardous wastes (e.g., used oil, filters, antifreeze, batteries) per HSC Chapter 6.5 and Title 22 CCR. Compliance shall be verified by Kings County Environmental Health Services prior to operation.

Level Of Significance

With the implementation of Mitigation Measures HAZ-1, the potential for significant hazards to the public or environment from the routine transport, use, or disposal of hazardous materials is reduced to *Less than Significant with Mitigation Incorporation.*

Impact #5.7b – 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?

While the use of hazardous materials during construction and operation poses some risk, the Project includes BMPs to prevent and manage accidental releases. These measures include proper storage, handling, and disposal of hazardous materials, as well as immediate response protocols in the event of a spill. The Project's design includes containment measures, such as lined bins and low containment structures near docks and trash areas, to prevent leaks or spills from entering the drainage system (Section 3-9). The Waste Management Plan (Appendix H) ensures that hazardous wastes are stored and disposed of in compliance with state regulations, reducing the risk of accidental releases. The Project's use of a reinforced composite polyethylene (RCPE) liner in waste management systems will minimize the risk of hazardous materials contaminating groundwater or surface waters.

The Fugitive Dust Emissions Control Plan (Appendix F) includes measures to stabilize soils and prevent dust-related hazards, which could otherwise mobilize contaminants. The distance to the nearest sensitive receptor (250 feet) and the rural setting minimize the potential for public exposure in the event of an accident.

The Project site contains no documented oil, gas, or geothermal wells based on CalGEM's Well Finder database and October 17, 2025, comment enclosure, minimizing risks of gas/liquid leaks, impeded access, or structural hazards during construction or operations. Pre-construction coordination with CalGEM will verify site conditions, with protocols for immediate notification, leak testing, and NOI submission if wells are encountered unexpectedly. Construction plans avoid impermeable barriers over potential well locations and ensure access for servicing equipment without disturbing infrastructure integrity. Soil management during grading/excavation includes testing for hydrocarbons, with compliant disposal to prevent environmental release. These measures, incorporated into MM HAZ-2, ensure regulatory compliance under PRC sections 3106, 3208, and 3208.1, and CCR sections 1723 and 1723.5.

Given these precautions, any accidental release of hazardous materials is not reasonably foreseeable to result in significant environmental harm. Therefore, the impact is considered *Less Than Significant with Mitigation Incorporation.*

Mitigation Measure(s)

Mitigation Measure HAZ-2

The Project Proponent will:

1. Consult CalGEM prior to groundbreaking to reaffirm no wells are present;
2. If wells are identified during site activities, halt work, notify CalGEM immediately, conduct leak testing, and submit an NOI via WellSTAR for any re-abandonment;

3. Maintain unimpeded access routes to wells;
4. Dispose of hydrocarbon soils per applicable laws and notify authorities; and
5. Record well information with the Kings County Recorder. Kings County shall verify compliance via construction permits and site inspections.

Level Of Significance
There would be a *Less than Significant Impact with Mitigation.*

Impact #5.7c – Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The nearest school, Kit Carson Union Elementary School, is approximately 2 miles north of the Project Site, well beyond the one-quarter mile threshold. The Project involves routine handling of hazardous materials (e.g., fuels, oils) and generation of hazardous wastes (e.g., used oil, antifreeze), but these activities occur on-site and are managed per state and local regulations. The Initial Study concludes no impact due to the distance from schools and the absence of acutely hazardous materials. No emissions or handling activities are expected to affect schools, and no mitigation is required.

Mitigation Measure(s)
None required.

Level of Significance
There is *No Impact.*

Impact #5.7d – Be located on a site 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?

The Project Site is not listed on the California Department of Toxic Substances Control's EnviroStor database or other hazardous materials site lists pursuant to Government Code Section 65962. The Site is in a rural agricultural area with no known history of contamination, and the geotechnical report (Appendix I) does not identify hazardous materials concerns. No mitigation is required.

Mitigation Measure(s)
None required.

Level of Significance
There is a *Less than Significant Impact.*

Impact #5.7e – 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, result in a safety hazard or excessive noise for people residing or working in the project area?

The nearest public airport, Hanford Municipal Airport, is located approximately 2.15 miles northwest of the Project Site. The Project is outside the influence area of the airport and is not subject to any airport land use plans. Therefore, there is no safety hazard associated with the proximity to the airport, and the impact is considered *No Impact.*

Mitigation Measure(s)
None required.

Level of Significance
There is *No Impact.*

Impact #5.7f – Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Project's primary access via Houston Avenue is designed to accommodate large agricultural vehicles and meets public works and fire code standards for emergency access. The Kings County Fire Department (Letter 4) requires all-weather access roads (20 feet wide, 13 feet 6 inches vertical clearance) and no structures more than 150 feet from fire apparatus access, with turnaround provisions if exceeded. The Project proponent will comply with these requirements, ensuring no interference with emergency response or evacuation plans. The California Emergency Services Act coordinates multi-agency response, and the Project's rural location and design do not conflict with these plans. Mitigation measures are proposed to formalize compliance with fire access standards.

Mitigation Measure(s)
Mitigation Measure HAZ-3
The Project proponent shall ensure that all on-site access roads are all-weather, at least 20 feet wide, with 13 feet 6 inches of vertical clearance, capable of supporting heavy fire apparatus, per California Fire Code requirements. No structure shall be more than 150 feet from fire apparatus access, with adequate turnaround provisions provided if exceeded. Updated site plans shall be submitted to the Kings County Fire Department for approval prior to construction.

Mitigation Measure HAZ-4
The Project proponent shall install address identification per California Fire Code Section 505.1, with visible signage at the main entrance (12252 7th Ave., Hanford) and other key locations, approved by the Kings County Fire Department prior to operation.

Level of Significance
With the implementation of Mitigation Measures HAZ-3 and HAZ-4, the potential for interference with emergency response or evacuation plans is reduced to a *Less than Significant Impact with Mitigation.*

Impact #5.7g – Expose people or structures, either directly or indirectly, to significant risk of loss, injury, or death involving wildland fires?

The Project Site is not located within a Very High Fire Hazard Severity Zone or a State Responsibility Area, and the surrounding flat, agricultural landscape has a low risk of wildland fires.

The Kings County Fire Department requires fire extinguishers (2A 10BC) in all structures, employee training on fire safety equipment, and, if applicable, fire protection system inspections. The Project proponent will comply with these requirements, including installing fire extinguishers and implementing a training program. The training program will ensure all employees are proficient in the use of fire extinguishers and other emergency response equipment, in accordance with California Fire Code standards.

All Project plans shall be reviewed and approved by the Kings County Fire Department to ensure compliance with the California Fire Code and local fire regulations. The rural setting and compliance with California Fire Code standards minimize fire risks. Mitigation measures are proposed to ensure fire safety compliance.

Mitigation Measure(s)
Mitigation Measure HAZ-5
The Project proponent shall train employees and equip appropriate structures (e.g., freestall barn, maternity barn, shop) with 2A 10BC fire extinguishers, located no more than 75 feet from any point, easily accessible, visible, near entrances or exits, securely mounted, and at a height compliant with the California Fire Code. Extinguisher locations shall be approved by the Kings County Fire Department during plan review.

Mitigation Measure HAZ-6
If a fire protection system (e.g., sprinklers) is installed, it shall be inspected and tested per California Fire Code requirements, with documentation of compliance submitted to the Kings County Fire Department for approval prior to operation.

Level of Significance
With the implementation of Mitigation Measures HAZ-5 and HAZ-6, the potential for significant risk from wildland fires is reduced to *a Less than Significant Impact with Mitigation.*

5.8 Hydrology and Water Quality

5.8.1 Introduction

This section evaluates the potential impacts of the Sozinho Dairy Project on hydrology and water quality. The analysis addresses potential effects on surface water and groundwater quality, groundwater supply, drainage patterns, flood risks, and compliance with applicable water quality and groundwater management plans. The discussion builds on findings from the IS/MND.

5.8.2 Environmental Setting

Surface Water
The proposed Project Site is within the Tulare Lake Basin Watershed, covering portions of Fresno, Kern, Kings, and Tulare Counties. More than 16 rivers and creeks flow from surrounding mountains into the Basin's small lakes and wetlands. The most prominent rivers and streams within the Watershed are the Kings River and the Kaweah River. The alluvial fans of the Kings River and Kaweah River dominate the Kings County Water District landscape.

Aquatic features in the near vicinity of the site include two dairy wastewater retention ponds, one of which is proposed for the construction of two earthen berms within it, an irrigation ditch approximately 0.3 miles west of the Project Site, a seasonal basin approximately 0.4 miles northwest of the Site, and a percolation basin approximately 0.2 miles southeast of the Site. Guernsey Slough and Cross Creek are located approximately 1.7 miles southeast of the project site and 1.7 miles east of the project site respectively.

Groundwater
The proposed Project would be located within the Tulare Lake Subbasin. Within the Tulare Lake Subbasin, the Site is under the jurisdiction of the Mid-Kings River Groundwater Sustainability Agency. The Project is within the Kings River Conservation District.

Stormwater Drainage
The stormwater management system at Sozinho Dairy #5 is designed to effectively control runoff, prevent erosion, and minimize environmental impact. The Site has been strategically graded to ensure that surface water is directed away from operational areas and toward designated collection and treatment basins. This helps prevent water accumulation around structures and operational zones, reducing the risk of standing water and potential contamination.

Manure storage and process water areas are carefully designed to ensure that any stormwater runoff is collected within the wastewater retention ponds rather than flowing into surrounding agricultural lands. The facility also incorporates erosion control measures, such as rock aprons

and stabilized drainage channels, to prevent soil displacement during heavy rainfall events. These features enhance the stability of the Site and protect surrounding areas from potential sediment runoff.

The existing reception pit, located within the production area, collects and directs process water into the proposed treatment system. To ensure protection of groundwater resources, the project proponent will submit a design report for the BIDA project that includes detailed engineering information on the reception pit. Following construction of the BIDA system, a Post-Construction Report will provide as-built drawings, material specifications, and a description of the preventative measures (such as liners, concrete construction, or other impermeable barriers) that minimize or eliminate dairy wastewater infiltration to groundwater.

Once collected, stormwater is directed to retention basins, where it undergoes controlled treatment before either being reused or discharged in compliance with regulatory standards. The underlying soil composition, primarily Kimberlina fine sandy loam and Wasco sandy loam, provides effective drainage while minimizing the risk of stormwater infiltration into groundwater. Additionally, the facility maintains compliance with local and state stormwater management regulations, including those established by the DWR and the SJVAPCD. By implementing these stormwater management strategies, Sozinho Dairy #5 ensures that its operations do not negatively impact surrounding water resources or agricultural land.

5.8.3 Regulatory Setting

Federal

Clean Water Act

The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

State

California Water Quality Porter-Cologne Act

California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board

(SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water Act within California. The applicable RWQCB for the proposed Project is the Central Valley RWQCB.

Regional

Central Valley RWQCB

The proposed Project Site is within the jurisdiction of the RWQCB. The Central Valley RWQCB requires a NPDES Permit and a SWPPP for Projects disturbing more than one acre of total land area. Because the Project is greater than one acre, an NPDES Permit and SWPPP will be required.

The project will fully comply with all requirements of the Reissued General Order by providing the Central Valley Water Board with the necessary documentation for the existing reception pit. This will occur through the BIDA project design report (submitted prior to BIDA construction) and the subsequent Post-Construction Report (submitted within 60 days of BIDA completion).

Mid-Kings River Groundwater Sustainability Agency

The MKRGSA is joint powers authority, comprised of three local public agencies (Kings County Water District, City of Hanford and County of Kings). The MKRGSA is responsible for the implementation of California's Sustainable Groundwater Management Act (SGMA) compliance within the GSA's boundary of the Tulare Lake Subbasin.

Local

2035 Kings County General Plan

The Kings County General Plan *Resource Conservation Element* and *Health and* Safety Element contains the following Goals, Objectives, and Action Plans on flood control and water use that are potentially applicable to the proposed Project:

- ***HS GOAL A4: Prevent unnecessary exposure of people and property to flood damage.***
  - HS OBJECTIVE A4.1: Direct new growth away from designated flood hazard risk areas and regulate new development to reduce the risk of flood damage to an acceptable level.
    - *HS Policy A4.1.1*: Review new development proposals against current Federal Emergency Management Agency (FEMA) digital flood insurance rate maps and California Department of Water Resource special flood hazard maps to determine project site susceptibility to flood hazard.
    - *HS Policy A4.1.2*: Reserve FEMA designated flood hazard areas for agricultural and natural resource conservation uses along the floodway channels and Tulare Lake Basin.
    - *HS Policy A4.1.3*: Determine base flood elevations for new development proposals within or adjacent to 100-year flood zone areas as identified in latest FEMA Digital Flood Insurance Rate Map, to definitively assess the extent of property potentially subject to onsite flood hazards and risks.

- *HS Policy A4.1.4*: Direct new urban growth to existing cities and community districts, or away from New Community Discouragement Areas to avoid flood hazard areas and increased risk to people and property.
- *HS Policy A4.1.5*: Regulate development, water diversion, vegetation removal, and grading to minimize any increase in flood damage to people and property.
- *HS Policy A4.1.6*: New development shall provide onsite drainage or contribute towards their fair share cost of off-site drainage facilities to handle surface runoff.
- *HS Policy A4.1.7*: Consider and identify all areas subject to flooding in the review of all land divisions and development projects.
- *HS Policy A4.1.8*: Enforce the "Kings County Flood Damage Prevention Ordinance," Chapter 5A of the Kings County Code of Ordinances.

❖ ***RC GOAL A1: Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long term sustainable water supplies for the region.***

- RC OBJECTIVE A1.4: Protect the quality of surface water and groundwater resources in accordance with applicable federal, state, and regional requirements and regulations.
  - *RC Policy A1.4.1*: Evaluate proposed land uses and development projects for their potential to create surface and groundwater contamination from point and non-point sources. Confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products or waste; floating debris; and runoff from the site.
  - *RC Policy A1.4.2*: Monitor and enforce provisions to control water pollution contained in the U.S. EPA National Pollutant Discharge Elimination System (NPDES) program as implemented by the California Water Quality Control Board, Central Valley Region.
  - *RC Policy A1.4.3*: Require the use of feasible and cost-effective Best Management Practices (BMPs) and other measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban and agricultural runoff in coordination with the California Water Quality Control Board, Central Valley Region.
  - *RC Policy A1.4.4*: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.
- RC OBJECTIVE A1.5: Avoid the placement of potential pollution sources in areas that have the potential to foster groundwater recharge.
  - *RC Policy A1.5.1*: Cooperate with local agencies in the preservation and purchase of natural sloughs for use as water recharge and drainage basins.
- RC OBJECTIVE A1.6: Protect groundwater quality by applying development standards which seek to prevent pollution of surface or groundwater and net loss of natural water features.
  - *RC Policy A1.6.2*: Support measures to ensure that water users do not unreasonably use groundwater resources.

- RC OBJECTIVE C2.2: Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.
  - *RC Policy C2.2.1*: Require erosion control measures for any development involving construction or grading near waterways, or on land with slopes over ten percent. Require that improvements such as roads and driveways be designed to retain natural vegetation and topography to the extent feasible.
  - *RC Policy C2.2.2*: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

5.8.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on hydrology and water quality are:

Would the project:

a) Violate any water quality standards or waste discharge requirements or otherwise sustainably degrade surface or ground water quality?
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would:
(i) result in substantial erosion or siltation on- or off-site?
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
(iv) impede or redirect flood flows?
d) In flood hazard, tsunami, or seiche zones risk the release of pollutants due to project inundation?
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater movement plan?

Discussion

Impact #5.8a - Violate any water quality standards or waste discharge requirements or otherwise sustainably degrade surface or ground water quality?

The Project, located within the Tulare Lake Subbasin under the jurisdiction of the Mid-Kings River Groundwater Sustainability Agency, proposes facility modifications including an advanced wastewater treatment system utilizing BIDA beds and vermifiltration to manage process water. These systems, combined with mechanical separators, earthen berms, and retention ponds, are designed to treat process water for reuse, storage, or land application while protecting water quality. The Project adheres to the RWQCB requirements, including the NPDES permit and a SWPPP, as mandated for projects disturbing more than one acre.

The wastewater management system incorporates structural improvements to minimize contamination risks. The BIDA beds use worms, microbes, and wood chips to remove contaminants, and retention ponds maintain a vertical separation from the first usable groundwater that substantially exceeds the five-foot minimum requirement. This requirement, established under the Central Valley RWQCB's Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Order No. R5-2013-0122), specifies a minimum vertical separation between the bottom of retention ponds and the highest anticipated elevation of underlying groundwater to prevent contamination of groundwater resources. The Project complies with this standard. Geotechnical evaluations (Appendix I) confirm that shallow groundwater was not encountered during subsurface explorations, with regional groundwater depths exceeding 50 feet below ground surface. Stormwater is managed through a system of retention basins, rock aprons, and stabilized drainage channels to prevent untreated runoff from impacting surrounding agricultural lands or water resources.

The Project participates in the Central Valley Dairy Representative Monitoring Program (CVDRMP), which requires semi-annual groundwater sampling for contaminants such as nitrate and ammonia to ensure compliance with water quality standards.

The Waste Management Plan (WMP) (Appendix H) confirms that retention ponds have adequate capacity for both operational wastewater and stormwater from a 25-year, 24-hour storm event, minimizing the risk of uncontrolled discharges. Regular maintenance, including bi-weekly tillage of BIDA beds and cleaning of drainage channels, further reduces the potential for water quality degradation.

However, to ensure consistent compliance with NPDES and RWQCB standards, mitigation measures are necessary. Mitigation Measure HYD-1 requires the Applicant to submit a Notice of Intent (NOI) to the California State Water Resources Control Board (SWRCB) Storm Water Permit Unit before construction, with documentation reviewed by Kings County prior to grading permits. Mitigation Measure HYD-2 mandates the preparation and implementation of an SWPPP with Best Management Practices BMPs, including provisional retention basins, silt fencing, and erosion control blankets, to manage runoff during construction. Mitigation Measure HYD-3 requires long-term maintenance of wastewater and stormwater systems with a Development Maintenance Manual to prevent pollutant buildup and ensure operational

efficiency. County monitoring staff will inspect the Site during construction to verify compliance.

Potential impacts related to dairy wastewater infiltration from the existing reception pit will be reduced to less than significant through implementation of Mitigation Measure HYD-4: Reception Pit Documentation. The project proponent shall submit a design report for the BIDA project (including the existing reception pit) to the Central Valley Water Board prior to construction of the BIDA system. Upon completion of the BIDA system, a Post-Construction Report shall be prepared and submitted that includes as-built documentation of the reception pit, identifying materials used and describing preventative measures to minimize or eliminate dairy wastewater infiltration to groundwater. These reports will confirm compliance with the Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Order No. R5-2013-0122).

Mitigation Measure(s)

Mitigation Measure HYD-1

Before the issuance of any construction/building permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit.

- Before issuance of building permits for Phase 1, the Applicant shall submit a copy of the NOI to the County.
- The County shall review noticing documentation before the approval of the building permit.

Mitigation Measure HYD-2

The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days before the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for Site construction shall be developed before the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control material discharge from the Site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures;
- Provisional retention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used;

- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours before and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants on Site, such as material storage, trash disposal, construction entrances, etc.

Mitigation Measure HYD-3

A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained following the manufacturer's maintenance conditions. The manual shall require that devices be cleaned before the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:

- Runoff shall be directed away from the trash and loading dock areas;
- Bins shall be lined or otherwise constructed to reduce the leaking of liquid wastes;
- Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and,
- Impervious berms, trench catch basins, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or washdown water to enter the drainage system.

Mitigation Measure HYD-4

The project proponent shall submit a design report for the BIDA project (including the existing reception pit) to the Central Valley Water Board prior to construction of the BIDA system. Upon completion of the BIDA system, a Post-Construction Report shall be prepared and submitted that includes as-built documentation of the reception pit, identifying materials used and describing preventative measures (such as impermeable liners, concrete construction, or equivalent barriers) to minimize or eliminate dairy wastewater infiltration to groundwater.

Level of Significance

With the implementation of Mitigation Measures HYD-1, HYD-2, HYD-3, and HYD-4 the Project's wastewater and stormwater management systems are expected to meet all applicable water quality standards and waste discharge requirements, preventing substantial degradation of surface or groundwater quality. Therefore, the impact is considered *Less than Significant with Mitigation Incorporation.*

Impact #5.8b - Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

The Project incorporates facility modifications designed to minimize impacts on groundwater supplies and recharge. The Project's wastewater management system, including BIDA beds, mechanical separators, and retention ponds, facilitates water recycling and reuse for irrigation, reducing the demand for groundwater extraction. The WMP (Appendix H) confirms that the wastewater retention ponds are designed to handle operational process water and stormwater from a 25-year, 24-hour storm event, ensuring that water is retained on-site and does not contribute to off-site runoff that could affect groundwater recharge.

The Site's underlying soils consist primarily of Kimberlina fine sandy loam and Wasco sandy loam, which are well drained with moderately rapid permeability (U.S. Department of Agriculture Natural Resources Conservation Service Official Soil Series Descriptions). Geotechnical evaluations (Appendix I) confirm subsurface conditions consistent with effective drainage and no shallow restrictive layers or groundwater encountered during explorations, with site-specific and regional conditions indicating a deep water table. These factors support effective drainage while minimizing the risk of contaminant infiltration.

The retention ponds maintain a vertical separation from the first usable groundwater that exceeds the five-foot minimum requirement established under the Central Valley RWQCB's Order No. R5-2013-0122. This requirement specifies a minimum vertical separation between the bottom of retention ponds and the highest anticipated elevation of underlying groundwater to prevent contamination of groundwater resources. The Project complies with this standard, and the substantial separation, supported by regional groundwater depths exceeding 50 feet below ground surface as confirmed in geotechnical evaluations (Appendix I), further reduces the potential for groundwater contamination that could impact recharge quality.

The Project aligns with the Mid-Kings River Groundwater Sustainability Agency's goals under California's SGMA by incorporating water conservation measures and ensuring that stormwater is directed to retention basins for controlled treatment and potential recharge. The 2035 Kings County General Plan (RC Policy A1.2.3) supports water conservation and groundwater recharge, and the Project's design complies with these objectives by avoiding the placement of pollution sources in areas critical for recharge and utilizing erosion control measures, such as rock aprons and stabilized drainage channels, to maintain soil stability and permeability.

No significant increase in water demand is anticipated, as the Project relies primarily on on-site wells and recycled process water, and the rural setting does not support foreseeable future development that would strain groundwater supplies. The Project's participation in the CVDRMP includes semi-annual groundwater sampling to monitor for contaminants, ensuring ongoing protection of groundwater quality and sustainable management.

Mitigation Measure(s)
No mitigation is required.

Level of Significance

The Project is not expected to substantially decrease groundwater supplies or interfere with groundwater recharge in a manner that would impede sustainable groundwater management of the Tulare Lake Subbasin. The impact is considered *Less than Significant.*

Impact #5.8c - Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner, which would
(i) result in substantial erosion or siltation on- or off-site?
(ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?
(iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
(iv) impede or redirect flood flows?

The Project proposes facility modifications that involve grading, construction, and the addition of limited impervious surfaces, such as a 14' x 20' concrete pad for a tank and small areas for feed storage and animal housing. These modifications have the potential to alter the existing drainage patterns of the Project Site. This analysis evaluates whether these changes would result in substantial erosion or siltation, flooding, exceedance of stormwater drainage capacity, or impedance of flood flows, per CEQA Guidelines Appendix G.

(i) Result in substantial erosion or siltation on- or off-site?

The Project includes grading and earthmoving activities for the construction of BIDA beds, earthen berms, and other infrastructure, which could potentially lead to erosion or siltation during construction and operation. The Site's underlying soils consist primarily of Kimberlina fine sandy loam and Wasco sandy loam, which are well drained with moderately rapid permeability (U.S. Department of Agriculture Natural Resources Conservation Service Official Soil Series Descriptions). However, without proper controls, construction activities could disturb the soil and result in sediment runoff, particularly during rainfall events.

The Project's stormwater management system is designed to minimize erosion and siltation by directing runoff to retention basins and incorporating erosion control measures, such as rock aprons and stabilized drainage channels. The WMP (Appendix H) confirms that these systems are integrated with wastewater management to prevent sediment from leaving the site. Additionally, MM-HYD-2 requires the preparation and implementation of a SWPPP that includes BMPs such as provisional retention basins, silt fencing, erosion control blankets, and mulching to control sediment during construction. These measures will be monitored by Kings County staff to ensure compliance.

During operation, regular maintenance of BIDA beds (bi-weekly tillage) and drainage channels will prevent soil buildup and maintain effective drainage, further reducing erosion risks. The implementation of MM-HYD-3 ensures long-term maintenance of these systems to prevent sediment displacement. With these mitigation measures, the Project will not 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?

The Project's modifications, including the addition of a small concrete pad and feed storage areas, introduce minimal impervious surfaces that could increase surface runoff. The Site is strategically graded to direct runoff toward designated retention basins, preventing water accumulation in operational areas. The WMP confirms that the wastewater retention ponds and stormwater drainage system are designed to handle runoff from a 25-year, 24-hour storm event, ensuring adequate capacity to prevent flooding. The site's flat topography and well-drained soils further reduce the risk of flooding.

MM-HYD-2 mandates the SWPPP with BMPs to manage runoff during construction, while MM-HYD-3 ensures ongoing maintenance of drainage systems to prevent blockages or overflow. The absence of nearby streams or rivers, with the closest aquatic features (e.g., Guernsey Slough and Cross Creek) located approximately 1.7 miles away, eliminates the risk of altering natural watercourses. Kings County will review the SWPPP and inspect the site to verify compliance. With these measures, the Project will not substantially increase runoff leading to flooding.

(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?

The Project's stormwater management system is integrated with wastewater treatment infrastructure, including retention ponds and BIDA beds, designed to capture and treat runoff before reuse or discharge. The WMP verifies that the retention ponds have sufficient capacity to handle both operational wastewater and stormwater from significant storm events, in compliance with Central Valley RWQCB standards. The system prevents runoff from exceeding drainage capacity or contributing to polluted runoff by directing surface water away from operational areas and treating it in retention basins.

MM-HYD-1 requires the submission of a NOI to the California SWRCB for an NPDES permit, ensuring compliance with water quality standards. MM-HYD-2 mandates an SWPPP with BMPs to control potential pollutants during construction, such as sediment or construction-related debris. MM-HYD-3 ensures regular maintenance of drainage and treatment systems to

prevent pollutant buildup. The Project's participation in the CVDRMP includes semi-annual groundwater sampling to monitor contaminants, further ensuring that runoff does not degrade water quality. With these measures, the Project will not exceed drainage system capacity or contribute substantial polluted runoff.

(iv) Impede or redirect flood flows?

The Project Site is not located within a 100-year flood hazard zone, as confirmed by the FEMA Digital Flood Insurance Rate Maps. The flat topography and strategic grading direct runoff to retention basins, preventing any alteration of flood flows. The WMP and stormwater management system are designed to retain all water on-site, ensuring no off-site redirection of flood flows. The absence of streams or rivers within the immediate vicinity further reduces the risk of impacting flood flows.

MM-HYD-2 ensures that the SWPPP includes measures to maintain proper drainage during construction, while MM-HYD-3 mandates ongoing maintenance to prevent blockages that could redirect water. County oversight will verify compliance with these measures. The Project's design aligns with the 2035 Kings County General Plan (HS Policy A4.1.2), which reserves flood hazard areas for agricultural uses, ensuring no impedance of flood flows.

Mitigation Measure(s)
MM-HYD-1, MM-HYD-2, MM-HYD-3, discussed in Impact 5.8a.

Level of Significance
Impact 5.8c will have a *Less than Significant Impact with Mitigation Incorporation.*

Impact #5.8d - In flood hazard, tsunami, or seiche zones risk the release of pollutants due to Project inundation?

The Project Site is located inland, away from oceanic or large water bodies, eliminating the risk of tsunamis. Additionally, the Site is not within a 100-year flood hazard zone, and the relatively flat topography reduces the risk of inundation. Consequently, there is no risk of pollutant release due to inundation.

Mitigation Measure(s)
No Mitigation is Required

Level of Significance
Impact 5.8d will have *No Impact.*

Impact #5.8e - Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater movement plan?

The Project's potential to conflict with or obstruct the implementation of a water quality control plan or sustainable groundwater management plan is evaluated in accordance with CEQA Guidelines Appendix G. The Project is subject to the Central Valley RWQCB's water quality control plan, including the requirements of the Porter-Cologne Water Quality Control Act and the NPDES program, as well as the MKRGSA plan under California's SGMA.

The Project's wastewater management system, incorporating BIDA beds, mechanical separators, earthen berms, and retention ponds, is designed to treat process water and stormwater to meet RWQCB standards, ensuring no degradation of surface or groundwater quality. The WMP confirms adequate storage capacity, with retention ponds providing vertical separation from the first usable groundwater that exceeds the five-foot minimum requirement established under Order No. R5-2013-0122. This requirement specifies a minimum vertical separation between the bottom of retention ponds and the highest anticipated elevation of underlying groundwater to prevent contamination of groundwater resources, and the Project complies with this standard. Geotechnical evaluations (Appendix I) confirm that shallow groundwater was not encountered during subsurface explorations, with regional groundwater depths exceeding 50 feet below ground surface. The system is sized to accommodate operational wastewater and stormwater volumes, including a 25-year, 24-hour storm event. The Project's participation in the CVDRMP includes semi-annual groundwater sampling for contaminants such as nitrate and ammonia, ensuring ongoing compliance with water quality standards.

The Project aligns with the MKRGSA's sustainable groundwater management plan by recycling process water for irrigation, reducing groundwater demand, and directing stormwater to retention basins that support potential recharge. The 2035 Kings County General Plan (RC Policy A1.2.3 and RC Objective A1.6) promotes water conservation and groundwater protection, and the Project complies with these objectives through erosion control measures (e.g., rock aprons, stabilized drainage channels) and adherence to NPDES requirements, including the submission of a Notice of Intent NOI and a SWPPP. The SWPPP incorporates BMPs to prevent pollution from construction and operational activities, further ensuring compliance with the RWQCB's water quality control plan.

The Project's design and operations do not introduce features that would obstruct the implementation of regional water quality or groundwater management plans. Instead, its water recycling, containment, and monitoring practices support the goals of the RWQCB and MKRGSA.

Mitigation Measure(s)
No mitigation is required.

Level of Significance

The Project will not conflict with or obstruct any applicable water quality control plan or sustainable groundwater management plan, resulting in *No Impact.*

5.9 Transportation

5.9.1 Introduction

This section evaluates the potential effects the Project may have on transportation and traffic. The discussion is based on findings from the Initial Study for the Sozinho Dairy #5 Project, comments from the Kings County Public Works Department and the California Department of Transportation.

5.9.2 Environmental Setting

The Sozinho Dairy #5 Project is located in a rural agricultural area of Kings County.

Vehicular Access
The primary vehicular access point for Sozinho Dairy #5 is located at 7205 Houston Avenue, on the northern side of the Project Site. This access point provides direct entry to the dairy facility and is used for the transportation of goods, materials, and livestock to and from the Site. The access is designed to accommodate large agricultural vehicles and ensures efficient movement of traffic associated with dairy operations.

Transportation Facilities
Transportation facilities near the proposed Project area include Houston Avenue, which connects to other significant local roads. Additionally, 7th Avenue and other agricultural access roads surround the dairy. These roads are designed to support the heavy machinery and transportation vehicles typically used in dairy and agricultural operations. The Site is also relatively close to larger transportation routes (Highways 198 and 43) that connect the agricultural area to the broader region, supporting logistics and supply chain activities vital to the dairy industry. The Kings County Association of Governments (KCAG) is the County's Regional Transportation Planning Agency and Metropolitan Planning Organization.

5.9.3 Regulatory Setting

State
CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

1. Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.
2. Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to

determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.

3. Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
4. Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Local

- Any alternatives to Kings County Improvement Standards shall be submitted to and approved by the Kings County Public Works Department prior to implementation.

Kings County Improvement Standards

The Kings County Improvement Standards are developed and enforced by the Kings County Public Works Department to guide the development and maintenance of County Roads. The cross-section drawings in the County Improvement Standards dictate the development of roads within the county.

2035 Kings County General Plan

The 2035 Kings County General Plan *Circulation Element* establishes policies relating to transportation:

- C OBJECTIVE A1.3: Maintain an adequate Level of Service operation for County roadways and ensure proper maintenance occurs along critical routes for emergency response vehicles.
  - *C Policy A1.3.1: Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.*
  - *C Policy A1.3.2: Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most*

recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.

5.9.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on transportation are: 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?

Discussion

Impact #5.9a – Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

The Project's primary access is via Houston Avenue, with additional ingress from 7th Avenue, both designed to accommodate large agricultural vehicles per Kings County Improvement Standards. The Project will generate minimal additional traffic (one service vehicle per day for calf hutch maintenance and two trucks per day for 14 days every other year for BIDA bed material transport), which is consistent with existing agricultural traffic patterns.

The Kings County Public Works Department requires that all improvements, including roads and drive approaches, conform to Kings County Improvement Standards, with any alternatives approved by the Department. This includes that all asphalt concrete drive approaches shall be constructed at all points of ingress from county-maintained roads, sloped to prevent water runoff toward the roadway, per Kings County Improvement Standards. Improvement drawings shall be submitted to the Public Works Department for approval. Additionally, any work within the county right-of-way would require approval of an encroachment permit from the Kings County Public Works Department. The Project proponent will ensure compliance through submission of improvement drawings for review. Mitigation measures are proposed to formalize compliance with county standards.

The General Plan's Circulation Objective A1.3 and Policy A1.3.1 aim for a minimum LOS Standard "D" on county roadways, and the Project's minimal traffic increase will not degrade LOS. Caltrans (Letter 5 of Appendix B) confirms no significant impact on the State Highway System.

Mitigation Measure(s)

Mitigation Measure TRANS-1

The Project proponent shall ensure that all Project improvements, including roads and asphalt concrete drive approaches, conform to Kings County Improvement Standards. Improvement drawings shall be submitted to the Kings County Public Works Department for approval prior to construction.

Mitigation Measure TRANS-2
The Project proponent shall obtain an encroachment permit from the Kings County Public Works Department for any work within the county right-of-way, including construction of drive approaches, prior to commencing such activities.

Level of Significance
With the implementation of Mitigation Measures TRANS-1 and TRANS-2, the potential for conflict with circulation system plans, ordinances, or policies is reduced to *a Less than Significant Impact with Mitigation.*

Impact #5.9b – Conflict or be inconsistent with CEQA Guidelines Section 15064.3, Subdivision (b)?

CEQA Guidelines Section 15064.3(b), implemented pursuant to Senate Bill 743, establishes criteria for analyzing transportation impacts of proposed projects and shifts the focus from vehicle delay and LOS to VMT as the primary metric. The section from SB743 states that vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact.

The Governor's OPR issued a Technical Advisory in 2018 to guide implementation. The OPR Technical Advisory recommends that small projects generating or attracting fewer than 110 trips per day generally may be presumed to cause a less-than-significant transportation impact and may be screened from detailed VMT analysis.

The Project generates no net increase in daily vehicle trips. Minimal additions consist of one daily service vehicle for calf hutch maintenance and two trucks per day for 14 days every other year for BIDA bed material transport. These limited additions are offset by reductions achieved through on-site feed storage relocation and addition of calf hutches, which eliminate off-site calf transport. The Project therefore remains well below the 110-trip screening threshold and is eligible for screening from detailed VMT analysis.

Existing traffic volumes on roads serving the Site are low, consistent with the rural agricultural setting:

- Houston Avenue (east of SR 43, the primary access road) carries approximately 3,109 average daily trips (ADT), with peak-hour volumes of 319 vehicles and Level of Service (LOS) B.

- State Route 43 (south of Houston Avenue) carries approximately 7,300 ADT, with peak-hour volumes of 710 vehicles and LOS B.

Given the absence of any net increase in daily trips, the Project's eligibility for VMT screening under OPR guidance, and the rural location with low existing traffic volumes, no significant VMT impact is expected.

Mitigation Measure(s)
None required.

Level of Significance
There is a *Less than Significant Impact.*

Impact #5.9c – Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Project's access roads and drive approaches are designed to accommodate large agricultural vehicles, with no sharp curves, dangerous intersections, or other hazardous geometric features. The Kings County Public Works Department requires asphalt concrete drive approaches at all ingress points, sloped to prevent water runoff, per Kings County Improvement Standards, as addressed in MM-TRANS-1. The Project's operations involve typical agricultural equipment (e.g., trucks, tractors), which are compatible with the rural road network and existing dairy operations. The minimal increase in traffic does not introduce incompatible uses or increase hazards. The Project proponent will ensure that drive approaches are constructed to county standards, with improvement drawings submitted for review. No mitigation is required, as the Project's design aligns with existing agricultural traffic patterns and county standards.

Mitigation Measure(s)
None required.

Level of Significance
There is *No Impact.*

Impact #5.9d – Result in inadequate emergency access?

The primary vehicular access to the Sozinho Dairy #5 is via Houston Avenue, which is adequately sized and designed to accommodate emergency vehicles. The Kings County Fire Department (Letter 4 of Appendix B) requires all-weather access roads (minimum 20 feet wide, 13 feet 6 inches vertical clearance, capable of supporting heavy fire apparatus) and no structures more than 150 feet from fire apparatus access, with turnaround provisions if exceeded. The Project proponent will comply with these requirements, submitting updated site

plans to the Kings County Fire Department for approval. Address identification per California Fire Code Section 505.1 will be installed to ensure visibility for emergency responders. The Project's rural location and compliance with fire code standards ensure no interference with emergency access. Mitigation measures, proposed in section 5.7, Hazards and Hazardous Materials, to formalize compliance with fire access standards.

Mitigation Measure(s)

- MM-HAZ-3 and MM-HAZ-4 as discussed in Section 5.7.

Level of Significance

With the implementation of Mitigation Measures HAZ-3 and HAZ-4, the potential for inadequate emergency access is reduced to *Less than Significant with Mitigation Incorporated.*

5.10 Utilities and Service Systems

5.10.1 Introduction

This section evaluates the potential effects the Project may have on utilities and service systems. The discussion is based on findings from the Initial Study for the Project, the Waste Management Plan (Appendix H), comments from the Kings County Environmental Health Services and Kings County Public Works Department, which are included as appendices.

5.10.2 Environmental Setting

Wastewater
The Project, located in an unincorporated area of Kings County, is not connected to municipal sewer services and instead relies on an advanced wastewater management system tailored for dairy operations.

The facility features a comprehensive wastewater treatment system, including wastewater retention ponds, mechanical separators, and BIDA beds. The existing retention ponds serve as primary storage and treatment facilities for process water generated by dairy operations, including flush water from freestall barns and cleaning water from the milk barn. These ponds maintain a minimum five-foot separation from groundwater, as required by regulatory standards, and have adequate capacity to handle wastewater from the facility, including stormwater runoff.

A key upgrade in the Project is the integration of BIDA beds, which utilize vermifiltration—a process that combines wood chips, microbial activity, and earthworms—to treat wastewater naturally. This system removes contaminants and enhances water quality before reuse in irrigation and land application. Additionally, the facility will incorporate mechanical separators to filter solid waste from the liquid stream, further optimizing wastewater treatment efficiency.

To prevent stormwater contamination, the wastewater management system is integrated with the Site's drainage infrastructure, ensuring that all runoff is directed toward the wastewater treatment system rather than flowing into nearby agricultural lands or waterways.

The facility's wastewater management practices comply with local and state regulations, including those set by the RWQCB and SJVAPCD. These measures reduce the environmental impact of dairy operations while ensuring compliance with groundwater protection and wastewater reuse standards.

Solid Waste

Solid waste from Sozinho Dairy #5 includes manure, organic matter from process water treatment, and general operational waste. The organic waste generated by dairy operations is managed through a structured process that includes:

- A 200,000 ft² manure processing area where manure is separated and prepared for land application.
- A 40,000 ft² post-manure organic matter processing area, where worms are introduced to enhance nutrient availability and soil benefits.
- A 150,000 ft² post-BIDA bed organic matter processing area for handling, storing, and drying material removed from the BIDA beds before land application.
- A 30,000 ft² area used for screening material from the organic matter areas into smaller particle sizes for various types of land application.

All solid manure and organic matter are either land-applied as organic fertilizer on associated cropland or stored and processed for future use. Manure storage areas are graded to prevent runoff and ensure proper drainage to wastewater retention ponds.

General solid waste, including non-organic waste, is managed through the Kings Waste and Recycling Authority (KWRA), which oversees collection, recycling, and disposal services for Kings County and its incorporated cities. Waste from the facility is transported to the KWRA Material Recovery Facility and Transfer Station, where recyclable materials are diverted from landfills. The remaining non-recyclable waste is sent to the Kettleman Hills Facility, which operates municipal and hazardous waste landfills. These practices ensure compliance with local solid waste regulations while promoting sustainability through recycling and organic material reuse.

Water

The Sozinho Dairy #5 facility sources its water primarily from on-site wells to support livestock hydration, cleaning, irrigation, and wastewater treatment. The facility adheres to a water conservation strategy, which includes the use of recycled water from the BIDA beds and wastewater retention ponds for irrigation and flushing operations, reducing dependence on fresh water. This recycled water is carefully monitored to ensure it meets quality standards before being applied to crops or other uses on-site.

Additionally, the stormwater management system is integrated with the water facilities, allowing rainwater to be collected, treated, and reused where possible. This not only helps conserve water but also minimizes runoff that could impact surrounding agricultural lands.

The geotechnical evaluation for the Project confirms that groundwater was not encountered during subsurface explorations, and the depth to regional groundwater at the Site exceeds 50 feet below ground surface, well below any facility operations. Additionally, all irrigation wells

meet Kings County construction standards, with proper seals and setbacks to prevent contamination.

Stormwater
The stormwater management system at Sozinho Dairy #5 is designed to effectively control runoff, prevent erosion, and minimize environmental impact. The Site has been strategically graded to ensure that surface water is directed away from operational areas and toward designated collection and treatment basins. This helps prevent water accumulation around structures and operational zones, reducing the risk of standing water and potential contamination.

Manure storage and process water areas are carefully designed to ensure that any stormwater runoff is collected within the wastewater retention ponds rather than flowing into surrounding agricultural lands. The facility also incorporates erosion control measures, such as rock aprons and stabilized drainage channels, to prevent soil displacement during heavy rainfall events. These features enhance the stability of the Site and protect surrounding areas from potential sediment runoff.

Once collected, stormwater is directed to retention basins, where it undergoes controlled treatment before either being reused or discharged in compliance with regulatory standards. The underlying soil composition, primarily Kimberlina fine sandy loam and Wasco sandy loam, provides effective drainage while minimizing the risk of stormwater infiltration into groundwater. Additionally, the facility maintains compliance with local and state stormwater management regulations, including those established by the DWR and the SJVAPCD. By implementing these stormwater management strategies, Sozinho Dairy #5 ensures that its operations do not negatively impact surrounding water resources or agricultural land.

Electric Power and Natural Gas
The proposed Project will not require new electrical or natural gas services.

5.10.3 Regulatory Setting

State
CalRecycle
California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB

The Central Valley RWQCB requires a SWPPP for projects disturbing more than one acre of the total land area. Because the Project is more than one acre, a SWPPP to manage stormwater generated during construction will be required. The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.

The Central Valley RWQCB is also responsible for implementing the Federal program, the NPDES. The NPDES Program is the Federal permitting program that regulates the discharges of pollutants to the surface waters of the U.S. Under this program, an NPDES permit is required to discharge pollutants into the Waters of the U.S. There are 350 permitted facilities within the Central Valley Region.

Local

- Any alternatives to Kings County Improvement Standards shall be submitted to and approved by the Kings County Public Works Department prior to implementation.

2035 Kings County General Plan

The 2035 General Plan *Resource Conservation Element* includes the following goals, objectives, and policies which would reduce potential impacts on water supply and utility infrastructure:

- ***RC GOAL A1: Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long term sustainable water supplies for the region.***
  - RC OBJECTIVE A1.1: Maintain and Protect Existing Water Supplies
    - *RC Policy A1.1.2*: Review new discretionary development proposals, including new or expanded uses within agricultural zone districts, to ensure that there are adequate water supplies to accommodate such uses. Projects should provide evidence of adequate and sustainable water availability prior to approval of a tentative map or other land use approval.
  - RC OBJECTIVE A1.2: Conserve and reuse water to provide for the efficient use of water resources.
    - *RC Policy A1.2.2*: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.
    - *RC Policy A1.2.3*: Continue to support efforts and educational programs intended to reduce water consumption on agricultural lands and enhance groundwater recharge.

- *RC Policy A1.2.4*: Encourage and support the development of recycled water systems in Kings County.
- *RC Policy A1.2.5*: Encourage and support the safe use of gray water for landscaping, agriculture, recreation and open space areas.

➢ RC OBJECTIVE C2.2: Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.

- *RC Policy C2.2.2*: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

❖ ***RC GOAL C1: Encourage the conservation of soil resources that are critical to the long-term protection and sustainability of the County's agricultural productivity and economy.***

➢ RC OBJECTIVE C2.2: Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.

- *RC Policy C2.2.2*: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

5.10.4 Impact Evaluation Criteria

Criteria for evaluating adverse effects on utilities and service systems are:

Would the Project:

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
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?

Discussion

Impact #5.10a – Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

The Project relies on existing on-site wells for water supply and does not require new or expanded water facilities. Wastewater is managed on-site through the proposed BIDA beds, mechanical separators, retention ponds, and other infrastructure, with no reliance on municipal wastewater treatment systems. The BIDA system uses vermifiltration, combining wood chips, microbes, and earthworms to remove contaminants from process water before reuse in irrigation and land application. The wastewater retention ponds have adequate capacity to handle all facility wastewater, including runoff from rainfall events, in compliance with RWQCB standards.

Stormwater drainage is integrated with the wastewater system, ensuring proper collection and treatment before discharge or reuse. The Site's topography directs surface runoff toward designated collection areas, preventing erosion and minimizing uncontrolled runoff. Erosion control measures, including rock aprons and stabilized drainage channels, further ensure stormwater is properly managed. The SWPPP ensures that stormwater maintains a vertical separation from the first usable groundwater exceeding the five-foot minimum requirement., established under the Central Valley RWQCB's Order No. R5-2013-0122. The geotechnical evaluation (Appendix I) for the Project confirms that groundwater was not encountered during subsurface explorations, and the depth to regional groundwater at the Site exceeds 50 feet below ground surface, well below any facility operations.

No new or expanded electric power, natural gas, or telecommunications facilities are required, as existing infrastructure is sufficient.

The construction of BIDA beds, separators, and other on-site infrastructure is evaluated in the Initial Study and this EIR, with mitigation measures (HYD-2 for SWPPP implementation) addressing potential environmental effects such as soil erosion or water quality impacts. The Kings County Public Works Department (Letter 7 of Appendix B) requires on-site drainage containment, which is addressed in the Project's design. No significant environmental effects from new or expanded utility facilities are anticipated, but mitigation is proposed to ensure compliance with stormwater and infrastructure standards.

Mitigation Measure(s)

Mitigation Measure UTIL-1

The Project proponent shall ensure that all drainage is contained on-site per Kings County Improvement Standards, as detailed in the Storm Water Pollution Prevention Plan. The SWPPP shall be submitted to the Kings County Public Works Department prior to construction, with compliance verified during site inspections.

Level of Significance
With the implementation of Mitigation Measures UTIL-1, the potential for significant environmental effects from the construction of new or expanded utility facilities is reduced to *Less than Significant with Mitigation Incorporation.*

Impact #5.10b – Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry, and multiple dry years?

The Project sources water from on-site wells, which currently support livestock hydration, cleaning, irrigation, and wastewater treatment. The Project does not propose a herd expansion, and the addition of BIDA beds and other infrastructure is designed to improve water recycling and reuse through vermifiltration, potentially reducing water demand compared to existing operations. The Initial Study notes that groundwater supplies are sufficient, as the wells are deep and the Project complies with the Sustainable Groundwater Management Act (SGMA) through coordination with the Kings River Conservation District. No significant increase in water demand is anticipated, and the rural setting does not support foreseeable future development that would strain water supplies. The 2035 Kings County General Plan (RC Policy A1.2.3) supports water conservation and groundwater recharge, which the Project enhances through on-site treatment and reuse. No mitigation is required.

Mitigation Measure(s)
None required.

Level of Significance
No Impact.

Impact #5.10c – 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?

The Project manages all wastewater on-site through retention ponds, BIDA beds, and mechanical separators, with no reliance on municipal or third-party wastewater treatment providers. The proposed infrastructure is designed to handle existing and projected wastewater volumes, with BIDA beds improving treatment efficiency for reuse or land application. The Central Valley RWQCB requires clarification to ensure compliance with General Order WQ 2015-0211-DWQ for composting operations, which the Project proponent will address, but this does not involve off-site treatment capacity. As no external wastewater treatment provider is involved, this criterion is not applicable. No mitigation is required.

Mitigation Measure(s)
None required.

Level of Significance
No Impact.

Impact #5.10d – 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?

The Project generates solid waste, including manure, compost, and wood chips from BIDA beds, managed per the Waste Management Plan (Appendix H). Composting operations are classified as an excluded activity under CCR Title 14 §17855(a)(1), limiting off-site compost distribution to 1,000 cubic yards annually, subject to inspection by Kings County Environmental Health Services or CalRecycle. Excess waste is handled by the Kings Waste and Recycling Authority (KWRA), which has sufficient capacity to manage the Project's waste. The Project's design, including manure processing and BIDA bed material recycling, supports solid waste reduction goals by reusing materials for land application. The minimal increase in solid waste (e.g., biennial BIDA bed cleanout) does not exceed state or local standards or KWRA's capacity. Mitigation is proposed to ensure compliance with composting regulations.

Mitigation Measure(s)
None required.

Level of Significance
Impacts would be *less than significant.*

Impact #5.10e – Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

The Project's Waste Management Plan (Appendix H) ensures compliance with federal (RCRA), state (CCR Title 14, Division 7), and local (Kings County) regulations for solid waste management. Composting operations adhere to CCR §17855(a)(1) and General Order WQ 2015-0211-DWQ, with off-site compost limited to 1,000 cubic yards annually. Hazardous waste (e.g., used oil, filters) are managed per HSC Chapter 6.5 and Title 22 CCR, with the Project proponent registering as a hazardous waste generator. Solid waste not reused on-site is managed by KWRA, compliant with local standards. The Project's design promotes waste reduction through on-site recycling and land application, aligning with state and local reduction goals. Mitigation is proposed to formalize compliance with hazardous waste regulations.

Mitigation Measure(s)

Mitigation Measure UTIL-2: The Project proponent shall register with Kings County Environmental Health Services as a hazardous waste generator prior to operation and manage hazardous wastes (e.g., used oil, filters, antifreeze, batteries) per HSC Chapter 6.5 and Title 22 CCR. Compliance shall be verified by Kings County Environmental Health Services prior to operation.

Level of Significance

With the implementation of Mitigation Measure UTIL-2, the Project's compliance with solid waste management and reduction statutes is ensured, resulting in a *Less than Significant Impact with Mitigation Incorporation*.

Section 6: Alternatives to the Proposed Project

Sozinho Dairy #5

An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which could feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the Project, and evaluate the comparative merits of the alternatives (14 CCR 15126.6). The range of alternatives that needs to be considered includes those which are within the rule of reason. The significant effects of the project dictate the alternatives to be considered. In evaluation of the alternatives to the Project, it is useful to again review the project objectives:

- Enhance wastewater treatment through vermifiltration and mechanical separation to produce higher-quality process water for reuse and land application.
- Improve local groundwater quality by implementing advanced treatment systems, such as BIDA beds, to reduce contaminants.
- Ensure compliance with environmental regulations, including Central Valley RWQCB General Order WQ 2015-0211-DWQ, SJVAPCD rules, and CalRecycle standards for composting and hazardous materials management.
- Improve animal comfort and health through upgraded housing, including freestall barns, maternity barns, and shade structures, without expanding the herd.
- Streamline operational efficiency with designated feed storage areas and organic matter processing for nutrient recycling and land application.
- Minimize environmental impacts by controlling odor, dust, and vectors through regular tillage, dust suppression measures, and compliance with the Fugitive Dust Emissions Control Plan.
- Maintain compatibility with surrounding agricultural land uses and adhere to Kings County Improvement Standards and California Fire Code requirements.

6.1 Alternatives Considered and Evaluated

An evaluation of two alternatives that were considered and evaluated are provided below. These alternatives represent a reasonable range of alternatives to the proposed Project. This analysis includes alternatives that could feasibly accomplish some of the basic objectives of the proposed Project and could potentially avoid or substantially lessen one or more of the significant effects. It should be noted that the proposed Project does not have significant adverse effects on any of the analyzed impact areas.

Among the factors that may be taken into account in addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, and jurisdictional boundaries. This EIR analyzes the following alternatives: (A) No-Project Alternative, and (B) Reduced-Project Alternative. An alternative site location is not considered a reasonable choice for addressing impacts associated with the expansion of this existing dairy facility. Construction of a new dairy, or

expansion of an existing dairy at another location, would be economically infeasible, and would potentially result in significant and unavoidable impacts. A matrix comparing differing environmental impacts of the Project and the alternatives evaluated in this Chapter is presented here in brief summary of the Chapter's analyses.

6.2 No Project Alternative

CEQA, through case law and statutory language, requires that "no project" alternatives be evaluated; under Section 15126.6(e)(2), "the No Project Alternative shall discuss the existing conditions at the time the notice of preparation is published . . .as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

Under the No Project Alternative, the Project area would remain unchanged. no new infrastructure for manure processing, process water treatment, or animal housing would be constructed, and current operational practices would remain unchanged. This section compares the environmental impacts of the No Project Alternative to those of the proposed Project across key environmental topics, as required by the CEQA, and evaluates its relationship to the Project objectives.

The purpose of the No Project Alternative is to allow the County to compare the impacts of the proposed project with the impacts of not approving it. Under the No Project Alternative the existing dairy would remain 'as is'. Any project-level or cumulative environmental effects associated with facilities construction and operation. In comparison of the environmental effects of continuation of operation of the existing dairy facilities on the Project Site (the No-Project Alternative) with those of the Project.

6.3 Comparison of Impacts

6.3.1 Air Quality

Under the No Project Alternative, no new construction would occur, eliminating construction-related emissions (e.g., from off-road equipment and fugitive dust). However, existing operations would continue without the proposed improvements, such as advanced wastewater treatment and odor control measures. Current manure management practices may generate higher fugitive dust and odor emissions due to less efficient processing and lack of BIDA beds, potentially increasing PM10 and volatile organic compound VOC emissions compared to the proposed Project. The absence of bi-weekly tillage and enhanced dust suppression measures could exacerbate Valley Fever risks from Coccidioides immitis in Kings County soils. Operational emissions would likely remain similar to current levels but would not benefit from reductions achieved through optimized delivery schedules and energy-efficient equipment. Overall, air quality impacts would be slightly greater than the proposed Project due to less effective dust and odor control.

6.3.2 Biological Resources

Without construction, the No Project Alternative would avoid potential disturbances to special-status species during construction, such as burrowing owls or San Joaquin kit foxes. Existing operations, however, would continue to limit habitat value due to ongoing agricultural disturbance, with no change to the current low potential for supporting special-status species. The absence of preconstruction surveys or mitigation measures could result in unaddressed impacts if species are present, though the disturbed nature of the Site makes this unlikely. No impacts to riparian habitats, wildlife corridors, or conservation plans would occur, similar to the proposed Project. The No Project Alternative avoids construction-related disturbances but lacks formal mitigation, potentially leaving any incidental impacts unaddressed.

6.3.3 Cultural and Tribal Resources

Without ground-disturbing activities, the No Project Alternative would avoid any potential for uncovering cultural or tribal resources. Existing operations do not involve significant new disturbance, so no impacts to cultural resources are expected. However, the lack of preconstruction surveys or protocols means any incidental discoveries during routine maintenance would not be systematically addressed, potentially increasing risks compared to the proposed Project's structured approach.

6.3.4 Hydrology and Water Quality

The No Project Alternative would maintain existing wastewater management practices, which rely on retention ponds without the advanced treatment provided by BIDA beds or mechanical separators. This could result in higher contaminant loads to groundwater, potentially violating RWQCB standards. Without the proposed SWPPP or erosion control measures, stormwater runoff may not be as effectively managed, increasing the risk of erosion or contamination of nearby agricultural lands. The existing system meets minimum standards but does not enhance water quality to the extent of the proposed Project. The No Project Alternative's less efficient practices could result in greater environmental impacts.

6.3.5 Energy

Without the proposed upgrades, the No Project Alternative would avoid construction-related energy use. However, existing operations would continue with less efficient equipment and transport practices, potentially requiring more fuel for off-site feed transport and less efficient manure processing. This could result in higher operational energy consumption compared to the proposed Project's optimized systems. The No Project Alternative's reliance on less efficient practices may lead to greater energy use over time.

6.3.6 Greenhouse Gas Emissions

The No Project Alternative would avoid construction-related GHG emissions but continue existing operations, which lack advanced methane-reducing technologies like BIDA beds. This could result in higher methane emissions from manure management, contributing to greater GHG impacts compared to the proposed Project. The absence of VMT reduction strategies would also maintain higher emissions from transport activities. The proposed Project is significantly preferable due to its methane reduction through BIDA beds and alignment with state GHG reduction strategies (e.g., AB 32, SB 32). The No Project Alternative's less efficient manure management may result in higher GHG emissions.

6.3.7 Hazards and Hazardous Materials

Existing operations involve similar hazardous materials but lack the updated HMBP and structured waste management protocols proposed in the Project. Fire safety measures would remain unchanged, potentially not meeting current California Fire Code standards. The proposed Project is preferable due to its updated HMBP, structured waste management, and fire safety compliance (HAZ-4, HAZ-5) reducing risks compared to the No Project Alternative.

6.3.8 Hydrology and Water Quality

Under the proposed Project, facility modifications significantly enhance process water management through the addition of advanced wastewater treatment systems, including mechanical separators and BIDA vermifiltration beds. These improvements will lead to a substantial reduction in contaminants and enhanced quality of process water for reuse and land application. Additionally, the proposed Project ensures compliance with Central Valley RWQCB General Orders, minimizing potential impacts on groundwater quality through stringent separation distances and on-site stormwater management. The No Project Alternative would maintain existing conditions without the proposed facility upgrades. Existing wastewater management systems, lacking advanced treatments like vermifiltration, would continue, potentially posing higher risks to groundwater quality due to less effective contaminant removal and lower-quality process water reuse.

6.3.9 Transportation

Without new infrastructure, the No Project Alternative would avoid construction-related traffic but maintain higher VMT from off-site calf transport and less efficient delivery schedules. Existing access roads may not meet current Kings County Improvement Standards for asphalt drive approaches or emergency access specifications, potentially increasing hazards compared to the proposed Project. The proposed Project is preferable due to its VMT reduction and compliance with transportation standards (TRANS-1, TRANS-2), ensuring safe and efficient access. The No Project Alternative's higher VMT and potential non-compliance with standards make it less favorable.

6.3.10 Utilities and Service Systems

Existing wastewater and solid waste management systems would continue without BIDA beds or enhanced retention ponds, potentially leading to less efficient contaminant removal and higher risks of non-compliance with RWQCB standards. Solid waste management would lack the structured approach of the proposed Waste Management Plan, and off-site compost distribution may not be formally limited, risking regulatory violations. Stormwater management would rely on existing systems, which may not meet the current Kings County Improvement Standards. The proposed Project is significantly preferable due to its advanced wastewater treatment, structured waste management, and compliance with regulatory standards.

6.3.11 Relationship with Project Objectives

The No Project Alternative fails to meet most Project objectives, including enhancing wastewater treatment through vermifiltration and mechanical separation, improving groundwater quality with BIDA beds, ensuring compliance with RWQCB, SJVAPCD, and CalRecycle standards, improving animal comfort with new housing, streamlining operational efficiency, minimizing environmental impacts through odor and dust control, and maintaining compatibility with Kings County Improvement Standards and California Fire Code, as it continues less efficient existing practices without proposed upgrades, making the proposed Project environmentally superior.

6.4 Reduced Scale Alternative

The Reduced-Project Alternative would scale down the scope of the Sozinho Dairy #5 Project by reducing the size of key infrastructure components by approximately 50 percent. Specifically, the manure processing area would be reduced from 200,000 square feet to 100,000 square feet, the post-manure organic matter processing area from 40,000 square feet to 20,000 square feet, and the post-BIDA bed organic matter processing area from 150,000 square feet to 75,000 square feet. The process water treatment system would include three BIDA beds instead of five, and the number of shade structures over existing corrals would be reduced from twelve to six. The freestall barn, maternity barn, commodity barn, shop, and three feed storage areas would remain as proposed, but the number of calf hutches would be reduced from twelve rows to six rows.

This alternative would decrease the volume of processed manure and organic matter by approximately 50 percent, reducing the capacity for nutrient recycling and land application. Consequently, this would result in a 50 percent reduction in the improvement of process water quality through vermifiltration compared to the proposed Project. Odor generation would be reduced by approximately 50 percent due to the smaller scale of manure processing and BIDA bed operations. However, the reduced capacity would limit the Project's ability to enhance groundwater quality and manage wastewater as effectively as the proposed Project.

The purpose of the Reduced-Project Alternative is to allow Kings County to compare the environmental impacts of the proposed Project with those of a significantly scaled-down version. This alternative would still provide improvements over existing conditions at the Site, such as enhanced animal housing and operational efficiency, but it would achieve only approximately 50 percent of the proposed Project's objectives, including wastewater treatment enhancement, groundwater quality improvement, and compliance with environmental regulations (e.g., Central Valley RWQCB General Order WQ 2015-0211-DWQ and SJVAPCD rules).

While the Reduced-Project Alternative would result in reduced air quality impacts (e.g., lower fugitive dust and volatile organic compound emissions) and slightly reduced water and energy demands due to the smaller scale of operations, it would not fully meet the Project's goals of maximizing wastewater treatment efficiency, animal welfare, and nutrient recycling. Therefore, the Reduced-Project Alternative is considered environmentally inferior to the proposed Project, as it compromises the Project's ability to achieve its environmental and operational objectives while still requiring significant infrastructure investment.

6.5 Comparison of Impacts

6.5.1 Air Quality

Under the Reduced-Project Alternative, the scale of construction would be reduced by approximately 50 percent. This would reduce construction-related emissions (e.g., from off-road equipment and fugitive dust) by approximately 50 percent compared to the proposed Project. Operational emissions would also be lower due to reduced manure processing and fewer BIDA beds, potentially decreasing PM10, PM2.5, and volatile organic compound (VOC) emissions. However, the reduced capacity of BIDA beds and manure processing would limit odor control and dust suppression compared to the proposed Project. The Reduced-Project Alternative would implement Mitigation Measure AQ-1 and adhere to the Fugitive Dust Emissions Control Plan (Appendix F), but its reduced wastewater treatment capacity would result in less effective odor and dust control compared to the proposed Project. Overall, air quality impacts would be slightly greater than the proposed Project due to less efficient odor and dust mitigation, though still below SJVAPCD significance thresholds.

6.5.2 Biological Resources

The Reduced-Project Alternative would involve less ground disturbance due to smaller infrastructure footprints, reducing potential impacts to special-status species like burrowing owls or San Joaquin kit foxes during construction compared to the proposed Project. Preconstruction surveys and mitigation measures would still be implemented, ensuring less-than-significant impacts. The Site's ongoing agricultural disturbance limits habitat value, and

the reduced scale would not significantly alter this baseline. No impacts to riparian habitats, wildlife corridors, or conservation plans would occur, similar to the proposed Project. The Reduced-Project Alternative would have slightly lower construction-related disturbance but similar operational impacts to the proposed Project, with no significant difference in biological resource outcomes.

6.5.3 Cultural and Tribal Resources

With reduced ground-disturbing activities, the Reduced-Project Alternative would have a lower potential for uncovering cultural or tribal resources compared to the proposed Project. Mitigation measures would still be applied, including preconstruction surveys and consultation with Native American tribes per AB 52, ensuring less-than-significant impacts. The reduced scale would not significantly alter the baseline risk, as the Site lacks known resources. The Reduced-Project Alternative would have a slightly lower risk of impact compared to the proposed Project but would still require the same structured approach to address any incidental discoveries.

6.5.4 Hydrology and Water Quality

The Reduced-Project Alternative would implement three BIDA beds instead of five, reducing the capacity for advanced wastewater treatment by approximately 50 percent. This would result in less effective contaminant removal compared to the proposed Project, potentially increasing groundwater contaminant loads, though still within Central Valley RWQCB standards. The Storm Water Pollution Prevention Plan and erosion control measures (e.g., rock aprons, stabilized drainage channels) would be implemented, but the reduced treatment capacity could lead to slightly higher risks of runoff contamination compared to the proposed Project. The Reduced-Project Alternative would still maintain over the minimum five foot separation from groundwater, but its less efficient wastewater management would result in slightly greater environmental impacts compared to the proposed Project.

6.5.5 Energy

The Reduced-Project Alternative would reduce construction-related energy use due to the smaller infrastructure footprint. However, operational energy consumption would be only marginally lower than the proposed Project, as the reduced BIDA bed and processing areas would still require continuous operation of mechanical separators and material handling equipment. The alternative would incorporate energy-efficient equipment, but the reduced wastewater treatment capacity would limit nutrient recycling efficiency, potentially requiring more off-site transport and higher fuel use compared to the proposed Project. Overall, energy impacts would be slightly higher than the proposed Project due to less optimized operational systems.

6.5.6 Greenhouse Gas Emissions

The Reduced-Project Alternative would generate fewer construction-related GHG emissions due to reduced construction activities. However, the reduced number of BIDA beds would decrease methane capture and reduction by approximately 50 percent compared to the proposed Project, potentially resulting in higher operational GHG emissions from manure management. The alternative would still implement GHG reduction strategies, but the reduced treatment capacity would limit alignment with state GHG reduction goals (e.g., AB 32, SB 32). The proposed Project is preferable due to its greater methane reduction through five BIDA beds and enhanced operational efficiencies. The Reduced-Project Alternative's less effective manure management may result in slightly higher GHG emissions.

6.5.7 Hazards and Hazardous Materials

The Reduced-Project Alternative would involve similar hazardous materials (e.g., fuel, oil, antifreeze) but with a smaller operational footprint, slightly reducing the volume handled. The updated Hazardous Materials Business Plan and structured waste management protocols would still be implemented, ensuring compliance with state and local regulations. Fire safety measures (HAZ-4, HAZ-5) would be applied, including fire extinguishers and employee training, meeting California Fire Code standards. The reduced scale would slightly lower the risk of hazardous material incidents, but the proposed Project's more comprehensive wastewater treatment and odor control make it preferable for minimizing environmental risks.

6.5.8 Hydrology and Water Quality

Under the proposed Project, facility modifications significantly enhance process water management through the addition of advanced wastewater treatment systems, including mechanical separators and BIDA vermifiltration beds. These improvements will lead to a substantial reduction in contaminants and enhanced quality of process water for reuse and land application. Additionally, the proposed Project ensures compliance with RWQCB General Orders, minimizing potential impacts on groundwater quality through stringent separation distances and on-site stormwater management. The Reduced Scale Alternative would partially implement advanced treatment technologies, including fewer BIDA beds and reduced mechanical separation capacity, resulting in moderate improvements in process water quality compared to existing conditions. However, this alternative would fall short of the comprehensive water quality improvements achievable by the proposed Project, potentially allowing higher levels of contaminants to persist and offering reduced groundwater protection.

6.5.9 Transportation

The Reduced-Project Alternative would reduce construction-related traffic due to the smaller infrastructure footprint. Operational VMT would be slightly lower than the proposed Project due

to fewer BIDA beds requiring less frequent woodchip transport (e.g., one truck per day for 14 days biennially instead of two). However, the reduced calf hutch capacity (six rows vs. twelve) would still eliminate off-site calf transport, similar to the proposed Project. The alternative would comply with Kings County Improvement Standards for asphalt drive approaches and emergency access, ensuring safe access. The proposed Project is preferable due to its greater operational efficiency and VMT reduction through optimized infrastructure, but the Reduced-Project Alternative's impacts would be comparable and less than significant.

6.5.10 Utilities and Service Systems

The Reduced-Project Alternative would reduce wastewater treatment capacity with three BIDA beds, potentially leading to less efficient contaminant removal compared to the proposed Project's five BIDA beds. Solid waste management would still follow the Waste Management Plan, limiting off-site compost distribution to 1,000 cubic yards annually, but the reduced processing capacity would decrease nutrient recycling efficiency. Stormwater management would comply with Kings County Improvement Standards and the SWPPP, maintaining on-site containment. The proposed Project is preferable due to its enhanced wastewater treatment and greater compliance with RWQCB and CalRecycle standards, while the Reduced-Project Alternative's reduced capacity could result in slightly higher risks of non-compliance.

6.5.11 Relationship to Project Objectives

The Reduced-Project Alternative partially meets the Project objectives but achieves only approximately 50 percent of the proposed outcomes. It would enhance wastewater treatment through vermifiltration and mechanical separation, but with reduced capacity, limiting improvements to groundwater quality and nutrient recycling. Animal comfort would be improved with fewer calf hutches and shade structures, but not to the extent of the proposed Project. Compliance with RWQCB, SJVAPCD, and CalRecycle standards would be maintained, but less effectively due to reduced infrastructure. Operational efficiency and environmental impact minimization (e.g., odor, dust, vectors) would be achieved to a lesser degree. Compatibility with Kings County Improvement Standards and California Fire Code would be maintained, but the proposed Project is environmentally superior due to its greater effectiveness in meeting wastewater treatment, environmental, and operational goals.

6.6 Comparison of Alternatives

Environmental Resource	Proposed Project Following Mitigation	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative
Air Quality	Less than Significant Impact	Greater Impact	Greater Impact

Biological Resources	Less than Significant Impact	Fewer Impacts	Fewer Impacts
Cultural and Tribal Resources	Less than Significant Impact	Fewer Impacts	Fewer Impacts
Hydrology and Water Quality	Less than Significant Impact	Greater Impact	Greater Impact
Energy	Less than Significant Impact	Greater Impact	Greater Impact
Greenhouse Gas Emissions	Less than Significant Impact	Greater Impact	Greater Impact
Hazards and Hazardous Materials	Less than Significant Impact	Greater Impact	Greater Impact
Hydrology and Water Quality	Less than Significant Impact	Greater Impact	Greater Impact
Transportation	Less than Significant Impact	Greater Impact	Similar Impact
Utilities and Service Systems	Less than Significant Impact	Greater Impact	Greater Impact
Meet Project Objectives?	Yes	No	Fewer
Reduce Significant and Unavoidable Impacts?	N/A	N/A	N/A

Table 6.1: Comparison of the Project and Alternatives

6.7 Environmentally Superior Alternative

CEQA requires that additions to the analysis of feasible alternatives, the alternatives must be ranked according to which alternatives have less environmental effects. The ranking is shown in the table above. The Project is considered environmentally superior, followed by the Reduced Project and No Project Alternatives. The No Project Alternative would not meet any of the Project's objectives, while the Reduced Project Alternative would fulfill some of the Project objectives, therefore, the Project is the environmentally superior alternative.

Section 7: Cumulative Impacts

Sozinho Dairy #5

7.1 Summary

The *California Environmental Quality Act Guidelines* require that all environmental impact reports contain an analysis of cumulative impacts for the project. An EIR must discuss the "cumulative impacts" of a project when its incremental effect will be cumulatively considerable. Section 15355 defines cumulative impacts as *"two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."* A cumulative impact *"consists of an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts"* [Section 15130(a)(1)]. The discussions of cumulative impacts *"shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone"* [Section 15130(b)].

The Guidelines provide further direction regarding cumulative impacts analysis. They state that *"Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used"* [Section 15130(b)(1)(B)(3)]. The cumulative impact analysis *"shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects"* [Section 15130(b)(5)]. With some projects, "*the only feasible mitigation for cumulative impacts may involve the adoption of ordinances or regulations rather than the imposition of conditions on a project-by-project basis"* [Section 15130(c)].

Section 15130(a)(3) states also that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of mitigation measure(s) designed to alleviate the cumulative impact.

As indicated above, a cumulative impact involves two or more individual effects. Per State CEQA Guidelines Section 15130, the discussion of cumulative impacts shall be guided by the standards of practicality and reasonableness. Per CEQA Guidelines Section 15130(b), the following elements are necessary in an adequate discussion of significant cumulative impacts:

1) *Either:*
   a) *A list of relevant, past, present, and probable future project producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency, or*

b) A summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect. Such plans may include: a general plan, regional transportation plan, or plans for the reduction of greenhouse gas emissions. A summary of projections may also be contained in an adopted or certified prior environmental document for such a plan. Such projections may be supplemented with additional information such as a regional modeling program. Any such document shall be referenced and made available to the public at a location specified by the lead agency, and;

2) When utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic hen utilizing a list, as suggested in paragraph (1) of subdivision (b), factors to consider when determining whether to include a related project should include the nature of each environmental resource being examined, the location of the project and its type. Location may be important, for example, when water quality impacts are at issue since projects outside the watershed would probably not contribute to a cumulative effect. Project type may be important, for example, when the impact is specialized, such as a particular air pollutant or mode of traffic.

3) Lead agencies should define the geographic scope of the area affected by the cumulative effect and provide a reasonable explanation for the geographic limitation used.

4) A summary of the expected environmental effects to be produced by those projects with specific reference to additional information stating where that information is available; and

5) A reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

Although no other development projects are proposed within one mile of the Site, the ongoing California High-Speed Rail (HSR) project involves active construction west of the Site. The HSR is a major infrastructure project subject to its own CEQA review and mitigation. The Project's modifications generate limited incremental effects and do not result in cumulatively

considerable contributions when viewed in combination with the HSR, regional agricultural operations, or other foreseeable activities.

Cumulative impacts for a project would be significant if the incremental effects of the individual project are considerable when combined with the effects of past projects, other current projects, and probable future projects. The following environmental effects require extensive Cumulative Impact discussion.

7.1.1 Air Quality Cumulative Impacts

As shown in Table 7-1, the proposed Project does not pose a substantial increase to basin or county emissions, as current pollutants are not impacted by the Project's construction or operation. Additionally, in Table 7-2, the Project's operational emissions do not significantly impact the county or Air Basin. Although concurrent HSR construction nearby could involve overlapping fugitive dust and equipment emissions, both projects are subject to San Joaquin Valley Air Pollution Control District Regulation VIII controls (including approved Dust Control Plans where required), resulting in the combined effects to be less than significant. Therefore, cumulative impacts to Air Quality would be considered less than significant.

Emissions Inventory Source	Pollutant (Tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Kings County – 2024[1]	8,018.32	3,771.91	13,787.51	97.09	7,245.62	1,820.26
SJVAB – 2024[1]	108,775.11	51,926.73	215,561.34	2,265.19	97,564.50	23,861.15
Proposed Project Construction	0.55	1.82	2.34	0.005	0.37	0.18
Project's Construction % of Kings	0.006859%	0.048251%	0.016972%	0.005150%	0.005107%	0.009889%
Project's Construction % of SJVAB	0.000506%	0.003505%	0.001086%	0.000221%	0.000379%	0.000754%
Proposed Project Operation	1.05	0.79	3.43	0.015	0.445	0.125
Project's Operation % of Kings	0.013095%	0.020944%	0.024878%	0.015450%	0.006142%	0.006867%
Project's Operation % of SJVAB	0.000965%	0.001521%	0.001591%	0.000662%	0.000456%	0.000524%
1. Source: CARB Standard Emission Tool, All sources except natural						

Table 7-1: Project Emissions Compared to 2024 Emission Inventory

Emissions Inventory Source	Pollutant (Tons/year)					
	ROG	NOx	CO	SOx	PM_{10}	$PM_{2.5}$
Kings County – 2030[1]	8,018.32	3,771.91	13,787.51	97.09	7,245.62	1,820.26
SJVAB – 2030[1]	108,775.11	51,926.73	215,561.34	2,265.19	97,564.50	23,861.15
Proposed Project Operation	1.05	0.79	3.43	0.015	0.445	0.125
Project's % of Kings	0.013095%	0.020944%	0.024878%	0.015450%	0.006142%	0.006867%
Project's % of SJVAB	0.000965%	0.001521%	0.001591%	0.000662%	0.000456%	0.000524%

1. Source: CARB Standard Emission Tool, All sources except natural

Table 7-2: Project Emissions Compared to 2030 Emission Inventory

Due to the minimal and temporary emissions during construction, and long-term operations that will not lead to increased emissions and may even contribute to improved air quality, cumulative impacts of the Project to air quality would be less than significant.

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.2 Biological Cumulative Impacts

There are no known additional projects proposed within 1 mile of the Project Site. Impacts associated with biological resources were analyzed in this EIR. Because of the temporary nature of the construction phase and no expansion of the existing dairy operations, the indirect impacts to wildlife and the vegetation communities and habitats surrounding the Project would be minimal, and no impacts to adjacent habitats are anticipated during the operational phase. The biological resource impacts analyzed in Section 5.2, with implementation of the recommended Mitigation Measures BIO-1.1 through BIO-5.3, would reduce cumulative impacts of the Project to biological resources to a level that would be *less than significant.*

Mitigation Measures
Mitigation Measures BIO-1.1 through BIO-5.3

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant with mitigation incorporated.*

7.1.3 Cultural and Tribal Cumulative Impacts

Impacts associated with cultural resources were analyzed in this EIR. The cultural resource impacts analyzed in Section 5.4 indicate that, based on the results of cultural records search findings and the lack of historical or archaeological resources previously identified within a half mile radius of the proposed Project, the potential to encounter subsurface cultural resources is minimal. Additionally, the Project construction would be conducted within the partially developed and previously disturbed parcel. The potential to uncover subsurface historical or archaeological deposits would be considered unlikely. Therefore, implementation of mitigation measures Mitigation Measures CUL-1, CUL-2, and CUL-3 would reduce cumulative impacts of the Project to a level that would be less than significant. Based on reducing the Project's

potential significant impact to less than significant with the implementation of the mitigation measures, the Project's contribution to cumulative impacts would be *less than significant.*

Mitigation Measures
Mitigation Measures CUL-1 through CUL-3

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant with mitigation incorporated.*

7.1.4 Energy Cumulative Impacts

There are no known additional projects proposed within 1 mile of the Project site, As described in Section 5.5, the Project incorporates energy-efficient measures, such as optimized wastewater treatment systems and on-site organic matter processing, which reduce energy demands for material transport and processing. These improvements align with the Kings County General Plan and state energy goals, including California's Renewables Portfolio Standard and Senate Bill 350, to promote energy efficiency and reduce reliance on fossil fuels. The Project does not result in a substantial increase in energy consumption, as operational energy use remains comparable to existing conditions. Therefore, cumulative impacts to energy resources are considered less than significant. Due to the minimal increase in demand for electricity and natural gas, the Project's cumulative impact on energy resources would be *less than significant.*

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.5 Greenhouse Gas Emissions Cumulative Impacts

There are no known additional projects proposed within one mile of the Project Site. As discussed in Section 5.6, the Project is subject to regulations under the California Global Warming Solutions Act of 2006 (AB 32), as administered by the California Air Resources Board (CARB). The Project's construction-phase GHG emissions are minimal and temporary, primarily from off-road equipment and worker vehicles. During operation, the Project incorporates advanced wastewater treatment (e.g., BIDA beds) and operational efficiencies that maintain or reduce existing GHG emissions levels, with no new significant sources of GHG emissions introduced. Consequently, the Project's direct GHG impacts are less than significant. Given the absence of nearby projects and the Project's minimal GHG contributions, its cumulative impact on GHG emissions is not cumulatively considerable. Therefore, the Project's cumulative impact on greenhouse gas emissions is less than significant.

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.6 Hazards and Hazardous Materials Cumulative Impacts

There are no known additional projects proposed within one mile of the Project site. As discussed in Section 5.7, the Project involves the routine use, storage, and disposal of hazardous materials typical of dairy operations, such as fuel, lubricants, and cleaning agents, managed in accordance with federal, state, and local regulations, including the Hazardous Materials Business Plan (HMBP) requirements under California Health and Safety Code Chapter 6.95 and Title 22 CCR. Construction-phase activities involve minimal hazardous materials, and operational measures, including the Waste Management Plan (Appendix H), ensure compliance with all applicable regulations to prevent releases. The Project's design and mitigation measures, minimize risks to the public and environment. Given the absence of nearby projects and the Project's adherence to stringent hazardous materials management protocols, its contribution to cumulative hazards and hazardous materials impacts is not cumulatively considerable. Therefore, the Project's cumulative impact on hazards and hazardous materials is *less than significant.*

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.7 Hydrology and Water Quality Cumulative Impacts

Cumulative impacts to hydrology and water quality are assessed by considering the proposed Project in conjunction with other existing and reasonably foreseeable projects in the region. Given the rural and agricultural nature of the surrounding area, cumulative water quality impacts primarily stem from agricultural runoff, wastewater management from dairy operations, and groundwater extraction practices. The nearby HSR construction may involve temporary stormwater runoff risks, but it is subject to its own Stormwater Pollution Prevention Plan and regulatory compliance. The proposed Project would positively contribute to cumulative hydrology and water quality conditions by implementing advanced wastewater management practices, such as BIDA vermifiltration and mechanical separators, which significantly reduce contaminant levels. This improvement in process water management and reuse would help mitigate the incremental addition of pollutants typically associated with

agricultural and dairy operations. Overall, the proposed Project substantially mitigates cumulative hydrology and water quality impacts by integrating advanced wastewater management systems, thereby significantly reducing the potential for adverse cumulative effects on groundwater resources in the area.

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.8 Transportation Cumulative Impacts

As discussed in Section 5.9, the Project will not result in traffic volumes exceeding Level of Service Threshold volumes, shown on Table C-3 of the County Circulation Element, and Level of Service will not fall below LOS D on County Roads or LOS C on SR-43, the Project does not conflict with any plans or ordinances regarding the effectiveness of the circulation system. The Project's minor additional service vehicles would not interfere with the temporary HSR construction traffic. The implementation of the Project will not create a potentially significant impact to transportation. As such, the cumulative impacts would be less than significant.

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

7.1.9 Utilities and Service Systems Cumulative Impacts

There are no known additional projects proposed within one mile of the Project Site. As discussed in Section 5.10, the Project's utilities and service systems impacts are evaluated for water supply, wastewater treatment, stormwater management, and solid waste, in compliance with federal, state, and local regulations. The Project relies on existing on-site wells for water supply and incorporates advanced wastewater treatment systems to manage process water, ensuring no new or expanded utility infrastructure is required. Stormwater is contained on-site through retention ponds, as detailed in the Storm Water Pollution Prevention Plan. Solid waste, including manure and organic matter, is managed per the Waste Management Plan with composting operations complying with Title 14 CCR §17855(a)(1) by limiting off-site compost distribution to 1,000 cubic yards annually. These measures ensure compliance with Kings County Improvement Standards and minimize environmental impacts. Given the absence of nearby projects and the Project's self-contained utility systems, its contribution to cumulative impacts on utilities and service systems is not cumulatively

considerable. Therefore, the Project's cumulative impact on utilities and service systems is less than significant.

Mitigation Measures
No mitigation is required.

Effectiveness Of Mitigation
Cumulative impacts of the Project are *less than significant.*

Section 8: Other CEQA Considerations

Sozinho Dairy #5

8.1 Growth-Inducing Impacts

Section 15126.2(e) of the CEQA Guidelines requires that EIRs provide a discussion of the "growth inducing impacts of the proposed project." Growth inducing impacts could be caused by projects that foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Growth inducing impacts can also be caused by removing obstacles to population growth, such as an expansion of a wastewater treatment plant. Growth inducement impacts can result from population increases that require the construction of new roadways, infrastructure or community services facilities. Growth inducement can also be a result of new development that requires an increase in employment levels, removes barriers to development, or provides resources that lead to secondary growth. With respect to employment, the Project would not induce substantial growth.

The development of the proposed Project is not growth inducing. The development of the proposed Project is not likely to result in or contribute to population growth, in that it is not proposing to significantly increase staffing, as the dairy will increase by only two employees following the Project construction. The Project involves facility modifications to enhance animal housing, feed storage, process water treatment, and organic matter operations without expanding the herd size. The Project requires only two additional employees—one for maintaining BIDA beds and one for calf hutch maintenance and feeding. Additionally, it will generate approximately 5–10 temporary construction jobs, which are expected to be filled by existing local residents. This minimal increase in employment does not constitute substantial growth and is unlikely to drive population growth or demand for new housing in the surrounding area.

The Project includes advanced wastewater treatment infrastructure, such as BIDA beds and mechanical separators, designed to manage on-site process water more efficiently. However, this infrastructure serves only the Project Site and does not expand capacity to accommodate off-site development. Similarly, the Project's energy consumption aligns with existing on-site needs, and no new or expanded power infrastructure is proposed to serve external areas. The Project's organic matter operations, including manure processing and nutrient recycling, are confined to the Site and comply with Title 14 CCR §17855(a)(1), limiting off-site compost distribution to 1,000 cubic yards annually, which does not facilitate broader development.

While the Project supports energy conservation through efficient wastewater treatment and operational improvements, it does not produce renewable energy or contribute to the energy supply in a manner that would induce growth. The Project's design aligns with the Kings County

General Plan's goals (e.g., AQ Objective E1.1) to minimize energy consumption and promote sustainability. The Project's energy impacts are limited to on-site operations and do not drive new growth beyond the existing agricultural use permitted by the Site's zoning.

Kings County's planning documents anticipate and accommodate a certain level of agricultural and rural development in the area. The Project operates within this framework, enhancing existing dairy operations without introducing new infrastructure or services that would enable unplanned growth. The minor increase in service vehicle trips does not significantly alter traffic patterns or necessitate new roadway infrastructure.

In conclusion, the Sozinho Dairy #5 Project does not foster economic or population growth, facilitate housing development, or remove obstacles to growth. Its limited staffing needs, on-site infrastructure focus, and compliance with existing zoning and regulatory frameworks ensure that it does not induce significant direct or indirect growth. Any connection between the Project and broader growth in Kings County would be speculative.

8.2 Significant Environmental Effects that Cannot be Avoided

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, mineral, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Section 15126.2(c) of the State CEQA Guidelines requires that the EIR describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the Project is being proposed, notwithstanding their effect, should be described.

After further study and environmental review, as provided in this document, it was determined that there are no project-level and cumulative impacts considered to be significant and unavoidable.

With the incorporation of reasonable mitigation measures, project and cumulative impacts to biological resources and cultural/tribal resources would be reduced to less than significant levels.

It was also determined that impacts of the proposed Project to air quality, energy, greenhouse gases, hazards and hazardous materials, hydrology and water quality, transportation and utilities and service systems are considered *less than significant.*

8.3 Significant Irreversible Changes

Section 15126.2(d) of the CEQA Guidelines defines an irreversible impact as an impact that uses nonrenewable resources during the initial and continued phases of the project. Irreversible impacts can also result from damage caused by environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to ensure that such consumption is justified.

The build-out of the Project will involve the use of nonrenewable resources, such as fossil fuels and construction materials, during the construction phase. These resources will be consumed for activities including the development of the manure processing area, process water treatment infrastructure, and animal housing facilities. However, during Project operations, the consumption of nonrenewable resources, such as oil, gas, and other fossil fuels, is expected to remain consistent with or lower than the existing baseline due to operational efficiencies and optimized delivery schedules, as well as energy-efficient equipment. The Project's Waste Management Plan and compliance with the 2035 Kings County General Plan's energy conservation policies (e.g., AQ Objective E1.1) further minimize resource consumption by promoting nutrient recycling and sustainable practices.

No significant irreversible commitment of nonrenewable resources is anticipated during long-term Project operations, as the Project maintains the existing herd size and incorporates measures to enhance resource efficiency. The Project aligns with the adopted goals, policies, and implementation measures of the Kings County General Plan. Additionally, the Project's adherence to mitigation measures minimizes the potential for environmental accidents, such as hazardous material spills, that could result in irreversible impacts. The Hazardous Materials Business Plan and registration as a hazardous waste generator further ensure proper management of materials to prevent accidents.

The 2035 Kings County General Plan, through policies such as RC Objective C1.1 and AQ Policy C1.1.3, ensures that any irreversible environmental changes associated with the Project are minimized to less-than-significant levels through compliance with CEQA, SJVAPCD regulations (e.g., Rules 2010, 2201, 4550, 4570), and other state and local requirements.

Section 9: Mitigation Monitoring and Reporting Program

Sozinho Dairy #5

9.1 Overview of MMRP

Pursuant to California Public Resources Code Section 21081.6, the following Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Project. This MMRP identifies the mitigation measures adopted in the EIR to reduce or avoid significant environmental impacts, assigns implementation and monitoring responsibilities, and specifies timing requirements. Kings County, as Lead Agency, is responsible for ensuring full compliance with these measures as a condition of Project approval.

9.2 Mitigation Monitoring and Reporting Program

Mitigation Measure	Description	Implementation Responsibility	Timing	Monitoring/Verification Responsibility	Verification
AQ-1	To reduce construction-related diesel exhaust emissions for the Sozinho Dairy #5 Project, all off-road construction equipment shall meet Tier 4 emission standards or incorporate equivalent emission control technologies, as specified by the San Joaquin Valley Air Pollution Control District (SJVAPCD). The Project proponent shall ensure that all contractors and subcontractors use equipment compliant with these standards or retrofit existing equipment with approved emission control devices, such as diesel particulate filters or selective catalytic reduction systems. Compliance shall be verified through equipment inventories and maintenance records submitted to the Kings County Community Development Agency and SJVAPCD prior to the issuance of building permits.	Project Applicant/Contractor	During all construction phases	Kings County Community Development Agency	
AQ-2	To mitigate air quality impacts on sensitive receptors north of the Project site, the Project Proponent shall install a vegetative buffer along the northern boundary prior to operations. The buffer shall consist of native, drought-tolerant species and shall be designed and implemented in full compliance with applicable setback requirements and traffic safety visibility standards, including any restrictions on plant height or placement near intersections to ensure unobstructed sight lines for vehicular and pedestrian traffic. The final buffer design shall be reviewed and approved by the appropriate jurisdictional authority	Project Applicant	Prior to issuance of occupancy permits and ongoing during operation	Kings County Community Development Agency	

	prior to installation to confirm compliance with all relevant visibility and safety regulations.				
AQ-3	To minimize odor impacts from the Project, the Applicant shall implement an odor management plan. The plan will incorporate several odor management strategies. These strategies will include regularly tilling the BIDA beds to prevent stagnation, reducing the potential for odor emissions. Additionally, the drainage channels associated with the BIDA beds shall be routinely maintained to ensure proper drainage and prevent the accumulation of odorous materials. The Applicant shall develop and adhere to a maintenance schedule for tilling and drainage channel upkeep, with records of these activities maintained and available for review by the Kings County Community Development Agency.	Project Applicant	Ongoing during Project operation	Kings County Community Development Agency	
AQ-4	To minimize construction-related air quality impacts, the Applicant shall implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan shall include measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. The Applicant shall ensure these controls are applied throughout the construction phase to reduce dust and exhaust emissions, with documentation of implementation maintained for review by relevant regulatory agencies.	Project Applicant/Contractor	During all construction phases	Kings County Community Development Agency	
AQ-5	To minimize operational emissions from the wastewater processing beds, the Applicant shall conduct regular maintenance of the BIDA beds to prevent stagnation and odor release. This shall include adherence to a vermifiltration design that	Project Applicant	Ongoing during Project operation upon request	Kings County Community Development Agency	

	improves wastewater quality and reduces volatile organic compound (VOC) emissions. The Applicant shall develop a maintenance protocol, with records available for inspection.				
AQ-6	To minimize odors and VOC emissions from silage storage, the Applicant shall cover silage piles with tarps or other impermeable materials. Regular monitoring and maintenance of silage piles shall be performed to prevent spoilage and anaerobic conditions that could exacerbate odors. The Applicant shall establish a schedule for these activities, ensuring records are kept and accessible for review by regulatory authorities upon request.	Project Applicant	Ongoing during Project operation upon request	Kings County Community Development Agency	
AQ-7	To minimize fugitive dust emissions from feed storage areas, the Applicant shall utilize enclosed or covered structures where feasible. Dust suppression techniques, such as misting systems or windbreaks, shall be employed during material handling. The Applicant shall implement these measures in alignment with SJVAPCD-recommended best management practices for agricultural operations, with compliance documentation maintained.	Project Applicant	Ongoing during Project operation upon request	Kings County Community Development Agency	
AQ-8	To reduce overall emissions from silage and feed activities, the Applicant shall adhere to SJVAPCD-recommended best management practices, including proper storage and handling protocols. This shall encompass strategies to mitigate odors, VOCs, and particulate matter, with a focus on the proximity of storage areas to sensitive receptors. The Applicant shall prepare a plan outlining these practices.	Project Applicant	Prior to issuance of final occupancy permits for expanded operations	Kings County Community Development Agency	
AQ-9	To reduce fugitive PM10 and PM2.5 emissions from on-Site unpaved roads and traffic areas, the Applicant shall limit vehicle speeds to 15 mph, apply water three	Project Applicant	Ongoing during	Kings County Community Development Agency	

	times daily (or more frequently as needed during dry conditions), or use chemical dust suppressants, and pave or gravel high-traffic areas where feasible. Signs posting speed limits shall be installed.		Project operation		
AQ-10	To address emissions from expanded dairy operations or waste management systems, the Applicant shall treat wastewater through vermifiltration-based BIDA beds to reduce VOC and ammonia emissions compared to traditional systems. Regular maintenance of these beds shall be conducted to prevent stagnation and odor release, with a documented schedule.	Project Applicant	Ongoing during Project operation	Kings County Community Development Agency	
AQ-11	To capture odorous compounds and ammonia from animal housing or waste management systems, the Applicant shall incorporate technologies such as biofilters or scrubbers where applicable. These controls shall be integrated into project improvements, aligning with SJVAPCD guidelines, and the Applicant shall maintain records of installation and operation for regulatory verification.	Project Applicant	Prior to full operation and ongoing upon request	Kings County Community Development Agency	
AQ-12	To minimize emissions from expanded operational activities, the Applicant shall limit idling times for vehicles and equipment, utilize low-emission machinery where feasible, and implement dust suppression measures in expanded areas. These controls shall be part of a broader operational plan, with adherence documented and available for review.	Project Applicant	Ongoing during Project operation upon request	Kings County Community Development Agency	
BIO-1.1	Prior to any ground-disturbing activities, and, if construction has not commenced within 12 months of the 2025 surveys, a new set of protocol-level surveys shall be conducted by a qualified biologist following the entire survey methodology in the Recommended	Project Applicant (Qualified Biologist)	Prior to ground disturbance	Kings County Community Development Agency	

	Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Survey reports shall be submitted to Kings County for review.				
BIO-1.2	If an active Swainson's hawk nest is discovered within 0.5 miles of the Project site during protocol or pre-construction surveys, a minimum one-half-mile (½-mile / 2,640-foot) no-disturbance buffer shall be established around the nest from March 1 through September 15 or until a qualified biologist determines that the nest is no longer active (e.g., young have fledged and are no longer dependent), whichever is later. No ground-disturbing activities, vegetation removal, or construction-related disturbance shall occur within this buffer during the restricted period. If site-specific constraints prevent full implementation of the ½-mile buffer, the Project proponent shall immediately consult with CDFW and implement any CDFW-approved alternative buffers or measures. If take cannot be avoided, the Project proponent shall obtain an Incidental Take Permit (ITP) from CDFW prior to any activity that could result in take.	Project Applicant (Qualified Biologist)	Prior to and during construction near nests	Kings County Community Development Agency and CDFW	
BIO-2.1	A qualified biologist shall conduct burrowing owl surveys in accordance with the survey methodology contained in the California Department of Fish and Wildlife Staff Report on Burrowing Owl Mitigation (CDFW, March 7, 2012) for both the breeding season (April 1–August 15) and non-breeding season (August 16–March 31). Surveys conducted for the EIR in 2025 shall be updated if ground disturbance has not commenced within 12 months. Pre-construction take-avoidance surveys shall be conducted no more than 14 days prior to initiation of ground-disturbance.	Project Applicant (Qualified Biologist)	Prior to ground disturbance	Kings County Community Development Agency	

	Survey reports shall be submitted to Kings County Community Development Agency.				
BIO-2.2	If pre-construction surveys discover active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet shall be established around all active owl nests. The buffer areas shall be enclosed with temporary fencing or flagging, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as in BIO-2.3.	Project Applicant (Qualified Biologist)	During construction if nests present	Kings County Community Development Agency	
BIO-2.3	If western burrowing owls are detected during protocol-level or pre-construction surveys, the Project proponent shall implement the following measures in accordance with the CDFW Staff Report on Burrowing Owl Mitigation (2012 or most recent version): 1. No-disturbance buffers shall be established around occupied burrows based on the time of year, level of disturbance, and type of project activity, as specified in the CDFW guidelines. 2. Impacts to occupied burrows and owls shall be avoided to the maximum extent practicable through implementation of buffers, project timing restrictions (e.g., outside the breeding season of February 1–August 31), or other avoidance measures. 3. Passive relocation (burrow exclusion or eviction) is prohibited unless specifically authorized by CDFW through an approved Burrowing Owl Exclusion Plan. Passive relocation shall only be considered during the non-breeding season	Project Applicant	Prior to ground disturbance if impacts unavoidable	Kings County Community Development Agency and CDFW	

	(September 1–January 31), after surveillance confirms burrows are unoccupied by adults, juveniles, or eggs, and only as a last resort after exhaustion of avoidance and minimization options. 4. If impacts to occupied burrows or owls cannot be fully avoided, the Project proponent shall consult with CDFW and obtain all necessary authorizations, including an Incidental Take Permit under CESA if determined required by CDFW. 5. All buffer maps, exclusion plans, monitoring reports, and permits shall be submitted to Kings County for review prior to initiation of ground-disturbing activities. This revised measure eliminates the conflict by prioritizing avoidance, restricting passive relocation to CDFW-authorized circumstances, and explicitly requiring permitting for potential take consistent with current regulatory requirements. It provides a clear, enforceable framework while maintaining protectiveness for the species.				
BIO-3.1	CDFW encourages that Project ground-disturbing activities occur during the bird non-nesting season. However, if ground-disturbing or vegetation-disturbing activities must occur during the nesting season (February 1 through September 15), the Project proponent shall ensure that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections (3503, 3503.5, and 3513). A qualified biologist shall conduct a pre-construction survey for active nests no more than 10 days prior to the start of ground or vegetation disturbance to	Project Applicant (Qualified Biologist)	Within 10 days prior to construction during nesting season	Kings County Community Development Agency and CDFW	

	maximize the probability that nests that could potentially be impacted are detected. Surveys shall cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected, either directly or indirectly, by the Project. In addition to direct impacts, noise, vibration, and movement of workers or equipment could also affect nests. The qualified biologist shall establish a behavioral baseline of all identified nests.				
BIO-3.2	Once Project activities begin, a qualified biologist shall continuously monitor identified nests to detect behavioral changes resulting from the Project. If behavioral changes occur, the work causing that change shall cease immediately and CDFW shall be consulted for additional avoidance and minimization measures. If continuous monitoring of identified nests by a qualified biologist is not feasible, a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors shall be implemented. These buffers shall remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. A qualified biologist shall advise and support any variance from these	Project Applicant (Qualified Biologist)	During construction during nesting season	Kings County Community Development Agency and CDFW	

	buffers and shall notify CDFW in advance of implementing a variance.				
BIO-3.3	If ground-disturbing activities or vegetation removal are scheduled to occur during the tricolored blackbird nesting season (February 1 – September 15), a qualified biologist shall conduct focused colony surveys of all potential nesting substrate within the Project site. Focused colony surveys shall be conducted no more than 10 days prior to the start of Project construction. If a colony is found, a 300-foot buffer no more than 10 days prior to initiation of construction activities shall be implemented. Surveys shall follow CDFW-approved protocols and include multiple visits during appropriate weather conditions to maximize detection probability. A survey report shall be submitted to Kings County within 5 days of survey completion.	Project Applicant (Qualified Biologist)	Prior to ground disturbance in suitable habitat	Kings County Community Development Agency	
BIO-3.4	If an active tricolored blackbird colony is discovered during pre-construction surveys or construction monitoring, a minimum 300-foot no-disturbance buffer shall be established around the colony and maintained until a qualified biologist confirms that fledglings are no longer dependent or the colony has been naturally abandoned. No ground-disturbing activities, vegetation removal, equipment staging, or other construction-related disturbance shall occur within this buffer during the nesting period.	Project Applicant (Qualified Biologist)	Prior to ground disturbance in suitable habitat	Kings County Community Development Agency	
BIO-4.1	A qualified biologist familiar with Crotch's bumble bee shall conduct a habitat assessment of the Project site. The assessment shall evaluate the presence of potential nesting substrate (small mammal burrows, thatch, bundled grass) and suitable foraging plants. A	Project Applicant (Qualified Biologist)	Prior to ground disturbance	Kings County Community Development Agency	

	habitat assessment report shall be submitted to Kings County.				
BIO-4.2	If the habitat assessment determines that potentially suitable habitat is present, a qualified biologist shall conduct protocol-level surveys following the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023) during the appropriate seasonal survey window (typically March–October, weather-dependent). Surveys shall be valid for one year. If Crotch's bumble bee is detected and impacts cannot be fully avoided through project design or timing, the Project proponent shall consult with CDFW. A 50-foot no-disturbance buffer shall be implemented around all small mammal burrows and thatched/bunch grasses. Consultation with CDFW shall occur to discuss Project implementation to avoid take or to acquire appropriate take authorization through a CESA Incidental Take Permit (ITP).	Project Applicant (Qualified Biologist)	Prior to ground disturbance if habitat present	Kings County Community Development Agency and CDFW	
BIO-5.1	A qualified biologist shall conduct a habitat assessment to determine if the Project site and immediate surrounding vicinity contain habitat suitable to support western spadefoot.	Project Applicant (Qualified Biologist)	Prior to ground disturbance	Kings County Community Development Agency and CDFW	
BIO-5.2	If potentially suitable habitat is identified, a qualified biologist shall conduct focused surveys for western spadefoot using appropriate survey methodologies, prior to any ground-disturbing activities.	Project Applicant (Qualified Biologist)	Prior to ground disturbance if habitat present	Kings County Community Development Agency and CDFW	
BIO-5.3	If western spadefoot burrows, cracks, loose soil areas, or other refugia are found to be used by western spadefoot during focused surveys, avoidance is encouraged via delineation and observance of a 50-foot no-disturbance buffer around these resources, including all potential breeding habitat (agricultural	Project Applicant (Qualified Biologist)	Prior to ground disturbance if habitat present	Kings County Community Development Agency and CDFW	

	sumps and irrigation ditches, even when dry). Avoidance of potential breeding habitat shall occur even when dry, since post-metamorphic western spadefoot juveniles utilize the dried pond bottom as a refuge. If any life stage of western spadefoot is observed, Project activities in the immediate vicinity shall cease, allowing individuals to leave the site on their own accord.				
CUL-1	Prior to any construction activities, a qualified professional consultant must conduct a field survey of the project site to determine if any cultural resources are present. The results of this survey must be submitted to the Kings County Community Development Agency for review. If any cultural resources are identified, further consultation with the appropriate authorities, including the Native American Heritage Commission, may be necessary to ensure proper management and preservation of these resources. No ground-disturbing activities shall commence until the survey has been completed and the results have been reviewed by the County.	Project Applicant (Qualified Archaeologist)	Prior to ground disturbance	Kings County Community Development Agency	
CUL-2	In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project: • Cultural Resources Alert on Project Plans: The project proponent shall note on any plans that require ground disturbing activities that there is a potential for exposing buried cultural resources. • Pre-Construction Briefing: The project proponent shall retain Santa Rosa Rancheria	Project Applicant/Contractor	During construction	Kings County Community Development Agency	

	Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and, on the procedures, to be enacted if resources are found. • Stop Work Near any Discovered Cultural Resources: The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. • Mitigation for Discovered Cultural Resources: If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation,				

	additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken. • Native American Monitoring: Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities. Tribal participation would be dependent upon the availability and interest of the Tribe. • Disposition of Cultural Resources: Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.				

CUL-3	In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project: • Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery and the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project	Project Applicant/Contractor	During construction	Kings County Community Development Agency	

	will follow Public Resources Code Section 5097.98(b) which states that "…. the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance." • Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.				
HAZ-1	The Project proponent shall submit a complete Hazardous Materials Business Plan (HMBP) to the California Environmental Reporting System addressing all agency comments and including facility inventory, site map, emergency response plan, and other required elements per HSC Chapter 6.95 and Title 19 CCR §5030.1-5030.1. The proponent shall register with Kings County Environmental Health Services as a hazardous waste generator prior to operation and manage hazardous wastes (e.g., used oil, filters, antifreeze, batteries) per HSC Chapter 6.5 and Title 22 CCR. Compliance shall be verified by Kings County Environmental Health Services prior to operation.	Project Applicant	Prior to operation	Kings County Environmental Health Services	
HAZ-2	The Project Proponent will: 1. Consult CalGEM prior to groundbreaking to reaffirm no wells are present; 2. If wells are identified during site activities, halt work, notify CalGEM immediately, conduct leak	Project Applicant	Prior to ground disturbance	Kings County Community Development Agency	

	testing, and submit an NOI via WellSTAR for any re-abandonment; 3. Maintain unimpeded access routes to wells; 4. Dispose of hydrocarbon soils per applicable laws and notify authorities; and 5. Record well information with the Kings County Recorder. Kings County shall verify compliance via construction permits and site inspections.				
HAZ-3	The Project proponent shall ensure that all on-site access roads are all-weather, at least 20 feet wide, with 13 feet 6 inches of vertical clearance, capable of supporting heavy fire apparatus, per California Fire Code requirements. No structure shall be more than 150 feet from fire apparatus access, with adequate turnaround provisions provided if exceeded. Updated site plans shall be submitted to the Kings County Fire Department for approval prior to construction.	Project Applicant	Prior to operation	Kings County Fire Department	
HAZ-4	The Project proponent shall install address identification per California Fire Code Section 505.1, with visible signage at the main entrance (12252 7th Ave., Hanford) and other key locations, approved by the Kings County Fire Department prior to operation.	Project Applicant	Prior to operation	Kings County Fire Department	
HAZ-5	The Project proponent shall train employees and equip appropriate structures (e.g., freestall barn, maternity barn, shop) with 2A 10BC fire extinguishers, located no more than 75 feet from any point, easily accessible, visible, near entrances or exits, securely mounted, and at a height compliant with the California Fire Code. Extinguisher locations shall be approved by the Kings County Fire Department during plan review.	Project Applicant	Prior to occupancy	Kings County Fire Department	
HAZ-6	If a fire protection system (e.g., sprinklers) is installed, it shall be inspected and tested per California Fire Code requirements, with documentation of	Project Applicant	Prior to occupancy and ongoing	Kings County Fire Department	

	compliance submitted to the Kings County Fire Department for approval prior to operation.				
HYD-1	Before the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit. • Before issuance of building permits for Phase 1, the Applicant shall submit a copy of the NOI to the County. • The County shall review noticing documentation before the approval of the building permit.	Project Applicant	Prior to ground disturbance	Kings County Community Development Agency	
HYD-2	The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days before the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for Site construction shall be developed before the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control material discharge from the Site. The following BMP methods shall include, but would not be limited to:	Project Applicant/Contractor	Prior to and during construction	Kings County Community Development Agency	

	• Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust; • A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures; • Provisional retention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used; • Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours before and during extreme weather conditions; and, • BMPs will be strictly followed to prevent spills and discharges of pollutants on Site, such as material storage, trash disposal, construction entrances, etc.				
HYD-3	A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained following the manufacturer's maintenance conditions. The manual shall require that devices be cleaned before the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:	Project Applicant	Prior to occupancy	Kings County Community Development Agency	

	• Runoff shall be directed away from the trash and loading dock areas; • Bins shall be lined or otherwise constructed to reduce the leaking of liquid wastes; • Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and, • Impervious berms, trench catch basins, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or washdown water to enter the drainage system.				
HYD-4	The project proponent shall submit a design report for the BIDA project (including the existing reception pit) to the Central Valley Water Board prior to construction of the BIDA system. Upon completion of the BIDA system, a Post-Construction Report shall be prepared and submitted that includes as-built documentation of the reception pit, identifying materials used and describing preventative measures (such as impermeable liners, concrete construction, or equivalent barriers) to minimize or eliminate dairy wastewater infiltration to groundwater.	Project Applicant	Prior to construction	Kings County Community Development Agency	
TRANS-1	The Project proponent shall ensure that all Project improvements, including roads and asphalt concrete drive approaches, conform to Kings County Improvement Standards. Improvement drawings shall be submitted to the Kings County Public Works Department for approval prior to construction.	Project Applicant	Prior to construction	Kings County Public Works Department	
TRANS-2	The Project proponent shall obtain an encroachment permit from the Kings County Public Works Department for any work within the county right-of-	Project Applicant	Prior to construction in right-of-way	Kings County Public Works Department	

	way, including construction of drive approaches, prior to commencing such activities.				
UTIL-1	The Project proponent shall ensure that all drainage is contained on-site per Kings County Improvement Standards, as detailed in the Storm Water Pollution Prevention Plan. The SWPPP shall be submitted to the Kings County Community Development Agency prior to construction.	Project Applicant	During design and operation	Kings County Community Development Agency	
UTIL-2	The Project proponent shall register with Kings County Environmental Health Services as a hazardous waste generator prior to operation and manage hazardous wastes (e.g., used oil, filters, antifreeze, batteries) per HSC Chapter 6.5 and Title 22 CCR. Compliance shall be verified by Kings County Environmental Health Services prior to operation.	Project Applicant	Prior to operation	Kings County Environmental Health Services	

Section 10: List of Preparers

Sozinho Dairy #5

4-Creeks Inc.

Nate Antepenko, Associate Planner

Tyler Esteves, Assistant Engineering Designer

Kings County

Victor Hernandez, County Planner

Alex Hernandez, Deputy Director – Planning

Core Environmental Consulting

Jesse Madsen, Owner; Principal Scientist

Live Oak Associates, Inc

Austin Pearson, Vice President

Natalie Neff, Staff Ecologist

BSK Associates

Adrian Sizemore, EIT Staff Professional II

Neva M. Popenoe, PE, GE Fresno Branch Manager

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Sozinho Dairy #5

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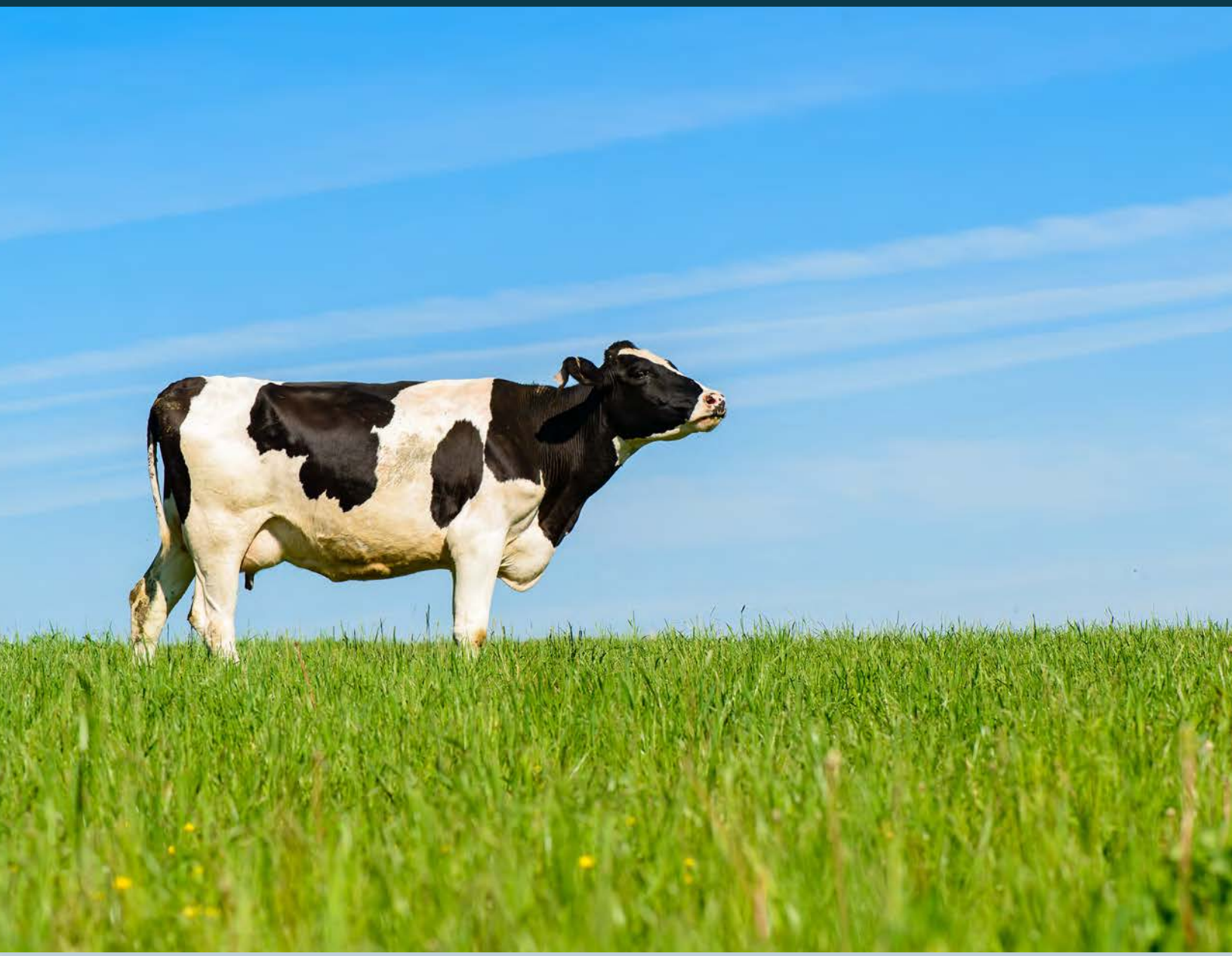
11.2 Technical Studies and Reports

- **Appendix A:** Initial Study/Mitigated Negative Declaration for the Sozinho Dairy #5 Project
- **Appendix B:** Response to Agency Comments
- **Appendix C**: Air Quality Report
- **Appendix D**: Health Risk Assessment Technical Report
- **Appendix E**: Biological Evaluation
- **Appendix F**: Dust Control Plan
- **Appendix G**: Cultural Resources Records Search
- **Appendix H**: Waste Management Plan Addendum
- **Appendix I**: Geotechnical Engineering Investigation Report

Appendix A: Initial Study/Mitigated Negative Declaration for the Sozinho Dairy #5 Project

Initial Study for Sozinho Dairy #5

October 2025



Prepared By:

4Creeks, Inc.
324 S Santa Fe, Suite A
Visalia, CA 93292

Prepared For:

Kings County
1400 W. Lacey Blvd
Hanford, CA 93230

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Appendix F: Waste Management Plan
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Appendix H: Fugitive Dust Emissions Control Plan
Appendix I: Occurrence Report

Kings County
1400 W Lacey Blvd, Bldg #6
Hanford, CA 93230

SECTION 1: CEQA Review Process

Project Title: Sozinho Dairy #5

1.1 California Environmental Quality Act Guidelines

Section 15063 of the California Environmental Quality Act (CEQA) Guidelines requires that the Lead Agency prepare an Initial Study to determine whether a discretionary project will have a significant effect on the environment. All phases of the project planning, implementation, and operation must be considered in the Initial Study. The purposes of an Initial Study, as listed under Section 15063(c) of the CEQA Guidelines, include:

(1) Provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or negative declaration;
(2) Enable an applicant or lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for a negative declaration;
(3) Assist the preparation of an EIR, if one is required, by:
  (a) Focusing the EIR on the effects determined to be significant,
  (b) Identifying the effects determined not to be significant,
  (c) Explaining the reasons for determining that potentially significant effects would not be significant, and
  (d) Identifying whether a program EIR, tiering, or another appropriate process can be used for analysis of the project's environmental effects.
(4) Facilitate environmental assessment early in the design of a project;
(5) Provide documentation of the factual basis for the finding in a negative declaration that a project will not have a significant effect on the environment.
(6) Eliminate unnecessary EIRs;
(7) Determine whether a previously prepared EIR could be used with the project.

1.2 Initial Study

The Initial Study provided herein covers the potential environmental effects of the proposed facility modifications to provide animal housing for increased animal comfort and operational ease, feed storage and wastewater treatment infrastructure to further treat existing wastewater generated on site. Kings County will act as the Lead Agency for processing the Initial Study pursuant to the CEQA Guidelines.

1.3 Environmental Checklist

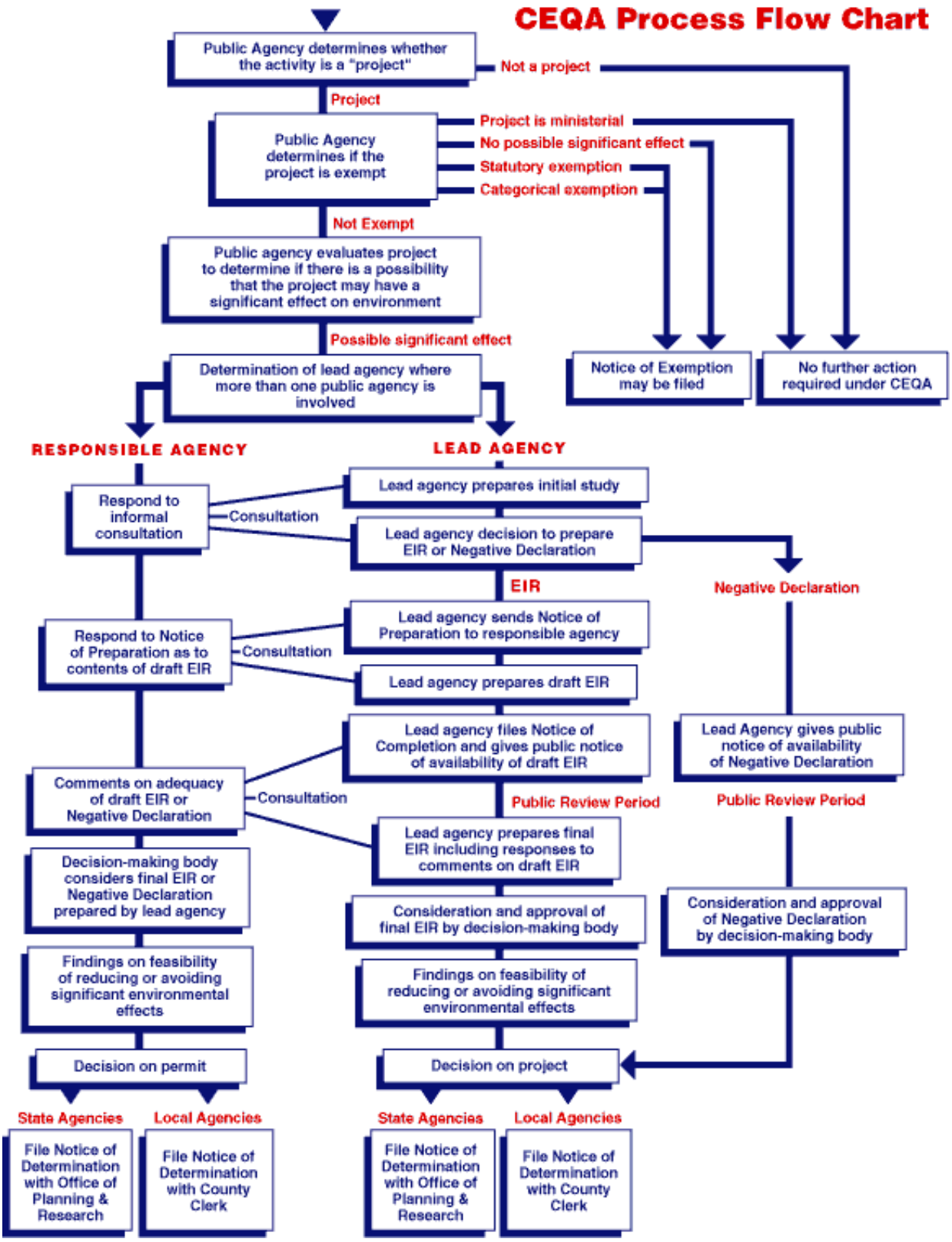
The Lead Agency may use the CEQA Environmental Checklist Form [CEQA Guidelines, Section 15063(d)(3) and (f)] in preparation of an Initial Study to provide information for determination if there are significant effects of the project on the environment. A copy of the complete Environmental Checklist is set forth in **Section Three**.

1.4 Notice of Determination (NOD)

The Lead Agency shall file a Notice of Determination within five working days after deciding to approve the project. The Notice of Determination (CEQA Guidelines, Section 15075) shall include the following:

(1) An identification of the project including the project title as identified on the proposed negative declaration, its location, and the State Clearinghouse identification number for the proposed negative declaration if the notice of determination is filed with the State Clearinghouse.
(2) A brief description of the project.
(3) The agency's name and the date on which the agency approved the project.
(4) The determination of the agency that the project will not have a significant effect on the environment.
(5) A statement that a negative declaration or a mitigated negative declaration was adopted pursuant to the provisions of CEQA.
(6) A statement indicating whether mitigation measures were made a condition of the approval of the project, and whether a mitigation monitoring plan/program was adopted.
(7) The address where a copy of the negative declaration or mitigated negative declaration may be examined.
(8) The identity of the person undertaking a project which is supported, in whole or in part, through contracts, grants, subsidies, loans, or other forms of assistance from one or more public agencies or the identity of the person receiving a lease, permit, license, certificate, or other entitlement for use from one or more public agencies.

1.5 CEQA Process Flow Chart



1.6 Mitigation Measures Included in the Project to Avoid Potentially Significant Effect

The full description of each mitigation measure can be found in Chapter XXII, Mandatory Findings of Significance.

Mitigation Measure AIR-1 (Odor Management). To minimize odor impacts from the Project, the Applicant shall implement an odor management plan. The plan will incorporate several odor management strategies. These strategies will include regularly tilling the BIDA beds to prevent stagnation, reducing the potential for odor emissions. Additionally, the drainage channels associated with the BIDA beds shall be routinely maintained to ensure proper drainage and prevent the accumulation of odorous materials. The Applicant shall develop and adhere to a maintenance schedule for tilling and drainage channel upkeep, with records of these activities maintained and available for review by the Kings County Community Development Agency and the San Joaquin Valley Air Pollution Control District to ensure compliance.

Mitigation Measure AIR-2 (Dust Control During Construction). To minimize construction-related air quality impacts, the Applicant shall implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan shall include measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. The Applicant shall ensure these controls are applied throughout the construction phase to reduce dust and exhaust emissions, with documentation of implementation maintained for review by relevant regulatory agencies.

Mitigation Measure AIR-3 (Wastewater Processing Bed Maintenance). To minimize operational emissions from the wastewater processing beds, the Applicant shall conduct regular maintenance of the BIDA beds to prevent stagnation and odor release. This shall include adherence to a vermifiltration design that improves wastewater quality and reduces volatile organic compound (VOC) emissions. The Applicant shall develop a maintenance protocol, with records available for inspection by the San Joaquin Valley Air Pollution Control District to verify compliance.

Mitigation Measure AIR-4 (Silage Management). To minimize odors and VOC emissions from silage storage, the Applicant shall cover silage piles with tarps or other impermeable materials. Regular monitoring and maintenance of silage piles shall be performed to prevent spoilage and anaerobic conditions that could exacerbate odors. The Applicant shall establish a schedule for these activities, ensuring records are kept and accessible for review by regulatory authorities.

Mitigation Measure AIR-5 (Feed Storage Dust Suppression). To minimize fugitive dust emissions from feed storage areas, the Applicant shall utilize enclosed or covered structures where feasible. Dust suppression techniques, such as misting systems or

windbreaks, shall be employed during material handling. The Applicant shall implement these measures in alignment with SJVAPCD-recommended best management practices for agricultural operations, with compliance documentation maintained.

Mitigation Measure AIR-6 (Agricultural Best Management Practices). To reduce overall emissions from silage and feed activities, the Applicant shall adhere to SJVAPCD-recommended best management practices, including proper storage and handling protocols. This shall encompass strategies to mitigate odors, VOCs, and particulate matter, with a focus on the proximity of storage areas to sensitive receptors. The Applicant shall prepare a plan outlining these practices, subject to periodic review by the San Joaquin Valley Air Pollution Control District.

Mitigation Measure AIR-7 (Enhanced Waste Management for Additional Improvements). To address emissions from expanded dairy operations or waste management systems, the Applicant shall treat wastewater through vermifiltration-based BIDA beds to reduce VOC and ammonia emissions compared to traditional systems. Regular maintenance of these beds shall be conducted to prevent stagnation and odor release, with a documented schedule ensuring ongoing compliance.

Mitigation Measure AIR-8 (Emission Control Technologies). To capture odorous compounds and ammonia from animal housing or waste management systems, the Applicant shall incorporate technologies such as biofilters or scrubbers where applicable. These controls shall be integrated into project improvements, aligning with SJVAPCD guidelines, and the Applicant shall maintain records of installation and operation for regulatory verification.

Mitigation Measure AIR-9 (Operational Controls for Vehicles and Equipment). To minimize emissions from expanded operational activities, the Applicant shall limit idling times for vehicles and equipment, utilize low-emission machinery where feasible, and implement dust suppression measures in expanded areas. These controls shall be part of a broader operational plan, with adherence documented and available for review by the San Joaquin Valley Air Pollution Control District to ensure air quality impacts remain less than significant.

Mitigation Measure BIO-1.1 (Temporal Avoidance). In order to avoid any potential impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside of this species' nesting season, typically defined as March 1-September 15.

Mitigation Measure BIO-1.2 (Preconstruction Surveys). If construction activities must occur between March 1 and September 15, then within 10 days prior to the start of construction, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ¼ mile of the work area. The survey will consist of

inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure BIO-1.3 (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Mitigation Measure BIO-2.1 (Take Avoidance Survey). A take avoidance survey for burrowing owls shall be conducted by a qualified biologist no less than 14 days prior to the start of construction. This take avoidance survey shall be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area shall include all potential roosting and nesting habitat on and within 200 meters of project impact areas, where accessible.

Mitigation Measure BIO-2.2 (Avoidance of Active Nests). If pre-construction surveys are undertaken during the breeding season (February 1 through August 31) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet shall be established around all active owl nests. The buffer areas shall be enclosed with temporary fencing or flagging, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure BIO-2.3 (Passive Relocation of Resident Owls). During the nonbreeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the impact area during the nonbreeding season, a 50-meter disturbance-free buffer shall be established around these burrows. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.

Mitigation Measure BIO-3.1 (Avoidance). In order to avoid impacts to native nesting birds, including the tricolored blackbird, the project will be constructed, if feasible, outside the nesting season, or between September 1st and January 31st.

Mitigation Measure BIO-3.2 (Preconstruction Surveys). If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and native bird nests within 15 days prior to the start of these activities. The survey will include the proposed work area(s) for that particular phase of work and surrounding lands within 250 feet, where accessible, for all nesting birds. If no active nests are found within the survey area, no further mitigation is required.

Mitigation Measure BIO-3.3 (Establish Buffers). Should any active nests be discovered in or near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Mitigation Measure CUL-1: Pre-Construction Cultural Survey Requirement. Prior to any construction activities, a qualified professional consultant must conduct a field survey of the project site to determine if any cultural resources are present. The results of this survey must be submitted to the Kings County Community Development Agency for review. If any cultural resources are identified, further consultation with the appropriate authorities, including the Native American Heritage Commission, may be necessary to ensure proper management and preservation of these resources. No ground-disturbing activities shall commence until the survey has been completed and the results have been reviewed by the County.

Mitigation Measure CUL-2: Protection of Cultural Resources. In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Cultural Resources Alert on Project Plans: The project proponent shall note on any plans that require ground disturbing activities that there is a potential for exposing buried cultural resources.
- Pre-Construction Briefing: The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and, on the procedures, to be enacted if resources are found.
- Stop Work Near any Discovered Cultural Resources: The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of

the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.

- Mitigation for Discovered Cultural Resources: If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than-significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken.
- Native American Monitoring: Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities. Tribal participation would be dependent upon the availability and interest of the Tribe.
- Disposition of Cultural Resources: Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-3: Protection of Buried Human Remains. In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery and the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission

(NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(b) which states that "…. the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."

- Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

Mitigation Measure HAZ-1: To ensure compliance with applicable safety regulations and minimize risks associated with the handling, storage, and use of hazardous materials at the Sozinho Dairy #5 facility, the applicant shall prepare and file a Hazardous Materials Business Plan (HMBP), prior to the initiation of any construction or operational activities involving hazardous materials. The HMBP shall include the following components:

- Inventory of Hazardous Materials: A detailed inventory of all hazardous materials to be used, stored, or disposed of on-site, including quantities, storage locations, and handling procedures.
- Emergency Response Plan: Procedures for responding to spills, leaks, or other incidents involving hazardous materials, including notification protocols, containment measures, and cleanup procedures.
- Employee Training: A training program for all employees handling hazardous materials, ensuring they are informed of proper handling, storage, and emergency response procedures in accordance with state and federal regulations.
- Site Map: A detailed site map indicating the locations of hazardous materials storage, handling areas, and emergency response equipment, such as spill kits and fire extinguishers.

The applicant shall submit the HMBP for review and approval by the Kings County Environmental Health Services Division prior to the issuance of any construction or grading permits. The plan shall be updated annually or as required by regulatory authorities, and the applicant shall maintain records of compliance, including inspection reports and employee training logs, for review by the County upon request. Implementation of the HMBP will reduce potential impacts related to hazardous materials to a less than significant level by ensuring safe handling, storage, and emergency response procedures are in place.

Mitigation Measure HYD-1: Before the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit.

- Before issuance of grading permits for Phase 1, the Applicant shall submit a copy of the NOI to the County.
- The County shall review noticing documentation before the approval of the grading permit. County monitoring staff will inspect the Site during construction for compliance.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days before the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for Site construction shall be developed before the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control material discharge from the Site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures;
- Provisional retention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used;
- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours before and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants on Site, such as material storage, trash disposal, construction entrances, etc.

Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained following the manufacturer's maintenance conditions. The manual shall require that devices be cleaned before the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:

- Runoff shall be directed away from the trash and loading dock areas;
- Bins shall be lined or otherwise constructed to reduce the leaking of liquid wastes;
- Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and,
- Impervious berms, trench catch basins, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or washdown water to enter the drainage system.

Kings County
1400 W Lacey Blvd., Bldg. #6
Hanford, CA 93230

SECTION 2: Project Description

Project Title: Sozinho Dairy #5

2.1 Project Description and Purpose

Sozinho Dairy #5 is proposing facility modifications to provide animal housing for increased animal comfort and operational ease, feed storage, implement process water treatment infrastructure to manage existing on-site process water, and establish organic matter operations for nutrient recycling and drying materials generated from animal operations and process water treatment for land applications. The facility is not proposing a herd expansion. The facility is proposing the following:

Organic Matter Operations (3) and Product Storage:

- Manure Processing Area: A 200,000 ft² area for managing manure off the proposed mechanical separators.
- Post Manure Organic Matter Processing Area: A 40,000 ft² area will be used to dry and improve manure for land application. Worms will be introduced to enhance nutrient availability and soil benefits.
- Post BIDA Bed Organic Matter Processing Area: A 150,000 ft² area for handling, storing, and drying material removed from the BIDA beds before land application.
- Processing and Product Storage Area: A 30,000 ft² area used for screening material from the organic matter areas into smaller particle sizes for various types of land application.

Process Water Treatment and Management:

- One (1) Reception Pit: A designated pit for receiving process water from operations, directing process water into appropriate treatment or processing systems.
- Two (2) mechanical separators: Machines used to remove solid particles from process water.
- One (1) Tank and One (1) Concrete Pad: A proposed 14' x 20' tank on a concrete pad for solid separation and collection.
- Two (2) Earthen Berms: Dirt Berms in the wastewater retention pond for additional process water separation and settling.
- Two (2) Lift Stations: A designated pit for receiving process water from operations, directing process water into appropriate treatment or processing systems.
- 216,000 square feet of Process Water Processing Beds: Also called Biodynamic Aerobic (BIDA) beds which utilize a combination of worms, microbes, and wood chips to

remove contaminants within the process water through vermifiltration. Process water will not be stored in the proposed BIDA beds but will be used for filtration and additional process water treatment.

Animal Housing and Operations:

- Three (3) Feed Storage Areas: A designated area for storing silage for animal feed. One is located approximately 650 feet south from the northeast corner of the property and is 13,500 square feet. The second is located in the northwestern corner of the facility and is approximately 84,000 square feet. The third is located in the northeast corner of the facility and is approximately 185,400 square feet.
- Twelve (12) Rows of Calf Hutches: Animal housing for calves ages 0-3 months of age.
- One (1) Freestall Barn: Animal Housing for heifers/cows over existing exercise pens for increased animal comfort and operational ease.
- One (1) Maternity Barn: Animal housing for calving cows over an existing open lot corral for a safe, clean and comfortable environment for pregnant cows to give birth. It offers a controlled space where cows can calve with reduced stress and risk of injury while being monitored.
- Twelve (12) shade structures over existing open lot corrals for animal comfort.
- One (1) Open Lot Corral: An approximately 44,625 square feet (175' x 255') animal housing corral for increased animal comfort and operational ease.
- One (1) Commodity Barn: A commodity barn for the storing of agricultural products.
- One (1) Shop: A shop for the repair of equipment used on the dairy.

The proposed modifications aim to improve wastewater treatment by using vermifiltration to produce higher quality process water for reuse, storage, and land application. The proposed BIDA beds will further treat process water generated and benefit local groundwater quality. At the same time, the facility will enhance animal comfort and health through improved housing and operations, while streamlining daily activities with designated feed storage areas and operational upgrades, ensuring a seamless and efficient workflow.

Service and delivery vehicles occur regularly at the dairy to provide feed, haul milk, haul animals, provide mechanical services, provide veterinary services and breeding services, and fuel deliveries. With the addition of the proposed facility improvements, a minor amount of limited additional maintenance and service vehicles will visit the site a few times per week.

Every other year, the vermifiltration beds will be cleaned out, requiring additional services to haul woodchips from the processing beds to the facility stacking area for processing and land application. This process requires two trucks per day for 14 days to move processed wood chips on-site for land application. The wood chips will be moved to a drying area on-site and then will be transported and land applied following processing.

The addition of calf hutches will require one additional service vehicle per day. However, this improvement is expected to reduce the number of truck trips, as it eliminates the need for

calves to be picked up and returned. No additional service vehicles will be required for the feed storage area, as this location was relocated on-site and existing operations will be utilized, maintaining or potentially reducing the overall truck trips.

The vermifiltration beds and separators will be operated 24 hours per day treating process water generated on site. The calf hutches will be operated within the existing employee operational hours. The modifications will require two additional employees on-site. One of the employees will be required to monitor and maintain the BIDA beds. The other additional employee will be used for calf hutch maintenance and feeding.

There will be minimal air pollution from the proposed project. Overall, the project will improve air quality due to the improved quality of process water entering the retention ponds on-site and enhanced facility flush water. Confirmation of the air study is being verified at a nearby operational vermifiltration bed dairy facility.

The odor in the beds will be minimized through tillage of the beds every two weeks. The tillage promotes movement in the beds, so the woodchips and process water filtering through the beds are not stagnant, which allows constant air exposure. The drainage channels will also be cleaned regularly so the beds drain properly, and odor is not released.

The dust will be controlled using gravel or decomposed granite around the vermifiltration beds. The amount of vectors near the vermifiltration beds will be reduced by tilling the beds to allow airflow and absorb excess moisture. The removal of plants, manure buildup, and puddles of process water near the beds will also aid in the reduction of vectors.

2.2 Project Location

The proposed Project is in a rural unincorporated area of Kings County, just east of Hanford. The Site is on the southwest corner of Houston Avenue and 7th Avenue. The Project Site is approximately 79.08 acres on APNs 016-200-005, -029, -028 and -035. The Site is topographically flat and surrounded by agricultural uses and some rural residences to the north. The surrounding areas are zoned as General Agriculture – 20 Acre Minimum (AG-20). Kings County designates the Site as General Agriculture – 20 Acre Minimum and is under agricultural use. The Site has existing features such as process water retention ponds, open lot corrals, freestall barns, a milk barn, a maternity barn, multiple residences, a hay barn, a shop, and a manure stacking area.

2.3 Other Permits and Approvals

The following discretionary approvals are required from Kings County and outside agencies for the proposed Project. It should be noted that this list is not exhaustive and additional permits and approvals may also be required:

- Kings County Conditional Use Permit
- Kings County Building and Encroachment Permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Central Valley Regional Water Quality Control Board (RWQCB), Storm Water Pollution Prevention Plan (SWPPP)
- Central Valley RWQCB, Notice of Intent for Coverage under General Order WQ 2015-0121-DWQ, General Waste Discharge Requirements for Composting Operations

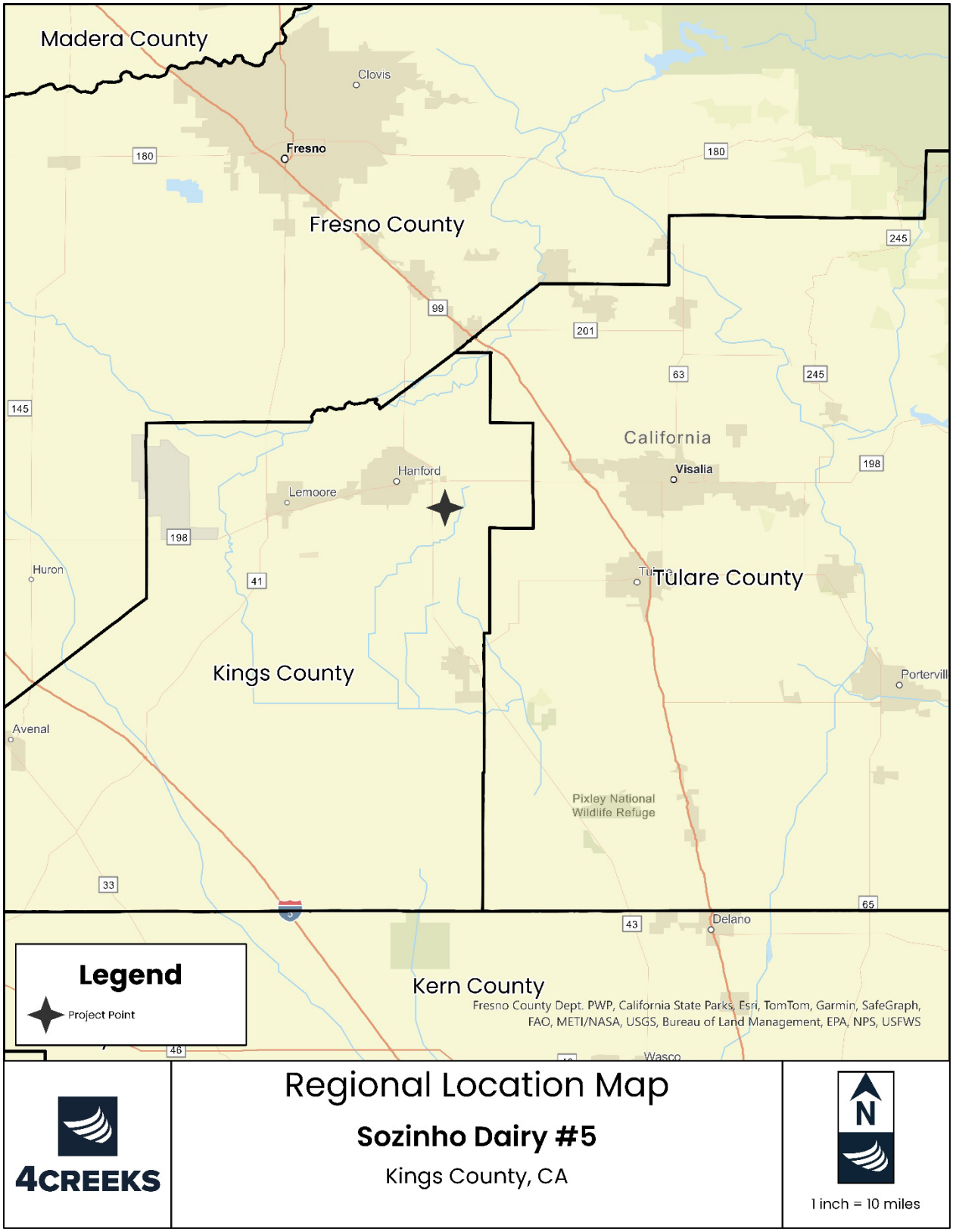


Figure 2-1. Regional Location Map



Figure 2-2. Vicinity Map

Kings County
1400 W Lacey Blvd., Bldg. #6
Hanford, CA 93230

SECTION 3: Evaluation of Environmental Impacts

Project Title: Sozinho Dairy #5

This document is the Initial Study for the proposed facility modifications to house calves, store feed, and further treat and store existing wastewater generated on site. Kings County will act as the Lead Agency for this Project under the California Environmental Quality Act (CEQA) and the CEQA Guidelines.

3.1 PURPOSE

This environmental document aims to implement the California Environmental Quality Act. Section 15002(a) of the CEQA Guidelines describes the basic purposes of CEQA:

(1) Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
(2) Identify the ways that environmental damage can be avoided or significantly reduced.
(3) Prevent significant, avoidable damage to the environment by requiring changes in Projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
(4) Disclose to the public the reasons why a governmental agency approved the Project in the manner the agency chose if significant environmental effects are involved.

This Initial Study of environmental impacts has been prepared to conform to the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et seq.) and the State CEQA Guidelines (California Code of Regulations Section 15000 et seq.). According to Section 15070, a public agency shall prepare or have prepared a proposed negative declaration or mitigated negative declaration for a Project subject to CEQA when:

(1) The initial study shows that there is no substantial evidence, in light of the whole record before the agency, that the Project may have a significant effect on the environment, or
(2) The initial study identifies potentially significant effects, but:
  a) Revisions in the Project plans or proposals made by, or agreed to by the applicant before a proposed mitigated negative declaration and initial study are released for public review would avoid the effects or mitigate the effects to a point where clearly no significant effects would occur, and
  b) There is no substantial evidence, in light of the whole record before the agency, that the Project as revised may have a significant effect on the environment.

3.2 INITIAL STUDY

1. Project Title:	Sozinho Dairy #5
2. Lead Agency:	Kings County Community Development Agency Contact Person: Victor Hernandez, Planner IV 1400 Lacey Blvd., Bldg. #6 Hanford, CA 93230 Phone Number: (559) 852-2670
3. Applicant:	4Creeks, Inc. Contact Person: Kyle Parreira 324 S. Santa Fe St. Visalia, CA 93292 Phone Number: (559) 802-3052

4. Project Location: The proposed Project is in a rural unincorporated area of Kings County, just east of Hanford. The Site is on the southwest corner of Houston Avenue and 7th Avenue. The Project Site is approximately 79.08 acres on APNs 016-200-005, -029, -028 and -035. The Site is topographically flat and surrounded by agricultural uses and some rural residences to the north. The surrounding areas are zoned as General Agriculture – 20 Acre Minimum (AG-20). Kings County designates the Site as General Agriculture – 20 Acre Minimum and is under agricultural use. The Site has existing features such as process water retention ponds, open lot corrals, freestall barns, a milk barn, a maternity barn, multiple residences, a hay barn, a shop, and a manure stacking area.

5. General Plan Designation: The 2035 Kings County General Plan has designated the proposed Project Site as General Agriculture – 20 Acre Minimum.

6. Zoning Designation: Kings County zoned the Site as General Agricultural – 20 Acre Minimum (AG-20).

7. Project Description: Sozinho Dairy #5 is proposing facility modifications to provide animal housing for increased animal comfort and operational ease, feed storage, implement process water treatment infrastructure to manage existing on-site process water, and establish organic matter operations for nutrient recycling and drying materials generated from animal operations and process water treatment for land applications. The facility is not proposing a herd expansion. The facility is proposing the following:

<u>Organic Matter Operations (3) and Product Storage:</u>

- Manure Processing Area: A 200,000 ft² area for managing manure off the proposed mechanical separators.

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The odor in the beds will be minimized through tillage of the beds every two weeks. The tillage promotes movement in the beds, so the woodchips and process water filtering through the beds are not stagnant, which allows constant air exposure. The drainage channels will also be cleaned regularly so the beds drain properly, and odor is not released.

The dust will be controlled using gravel or decomposed granite around the vermifiltration beds. The amount of vectors near the vermifiltration beds will be reduced by tilling the beds to allow airflow and absorb excess moisture. The removal of plants, manure buildup, and puddles of process water near the beds will also aid in the reduction of vectors.

8. Surrounding Land Uses and Settings:

North: General Agriculture – 20 Acre Minimum (2035 Kings County General Plan), Rural residences, farmland
South: General Agriculture – 20 Acre Minimum (2035 Kings County General Plan), farmland
East: General Agriculture – 20 Acre Minimum (2035 Kings County General Plan), farmland
West: General Agriculture – 20 Acre Minimum (2035 Kings County General Plan), farmland

9. Required Approvals: The following discretionary approvals are required from Kings County and outside agencies for the proposed Project. It should be noted that this list is not exhaustive and additional permits and approvals may also be required:

- Kings County Conditional Use Permit
- Kings County Building and Encroachment Permits
- San Joaquin Valley Air Pollution Control District (SJVAPCD)
- Central Valley Regional Water Quality Control Board (RWQCB), Storm Water Pollution Prevention Plan (SWPPP)
- Central Valley RWQCB, Notice of Intent for Coverage under General Order WQ 2015-0121-DWQ, General Waste Discharge Requirements for Composting Operations

10. Native American Consultation: The State requires lead agencies to consider the potential effects of proposed Projects and consult with California Native American tribes during the local planning process to protect Traditional Tribal Cultural Resources through the CEQA Guidelines. Pursuant to PRC Section 21080.3.1, the lead agency shall begin consultation with the California Native American tribe that is traditionally and culturally affiliated with the geographical area of the proposed Project. Such significant cultural resources are either Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a tribe that is either on or eligible for inclusion in the California Historic Register or local historic register, or the lead agency, at its discretion, and support by substantial evidence, choose to treat the resources as a Tribal Cultural Resources (PRC Section 21074(a) (1-2)). According to the most recent census data, California is home to 109 currently recognized Native American Tribes. Tribes in California currently have nearly 100 separate reservations or Rancherias.

Note: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and Project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See PRC Section 21083.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred

Lands File per PRC Section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that PRC Section 21082.3l contains provisions specific to confidentiality.

11. Parking and access: The primary vehicular access point for Sozinho Dairy #5 is located at 7205 Houston Avenue, on the northern side of the Project Site. This access point provides direct entry to the dairy facility. The access is designed to accommodate large agricultural vehicles and ensures efficient movement of traffic associated with dairy operations. When the High-Speed Rail improvements are constructed, facility access from Houston Avenue will be consolidated to a single entrance at the northeast corner of the milk barn, rather than the current configuration with access points at both the northeast and northwest sides.

12. Landscaping and Design: No landscaping or fencing is proposed for this Project.

13. Utilities and Electrical Services: The Project includes wastewater management system that includes wastewater lagoons and a BIDA system, which uses vermifiltration to treat effluent. This system reduces pollutants and pathogens, allowing treated water to be reused for irrigation. The Project also integrates stormwater management, directing surface runoff to on-site basins for treatment, thus minimizing environmental impacts. Water for the dairy is sourced primarily from on-site wells and supplemented by recycled water from the BIDA system, ensuring sustainability and compliance with local and state regulations. Solid waste, mainly manure, is managed on-site with additional waste handled by the Kings Waste and Recycling Authority. The Project does not require new electrical or natural gas services.

Acronyms

AAQS	Ambient Air Quality Standards
AB	Assembly Bill
BMP	Best Management Practices
BPS	Best Performance Standards
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CBSC	California Building Standards Commission
CCAP	Climate Change Action Plan
CCR	California Code of Regulation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CRHR	California Register of Historical Resources
CWA	California Water Act
DOC	California Department of Conservation
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
FCSSE	Five County Seismic Safety Element
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
EIA	Energy Information Administration
HSC	Health and Safety Code
GAMAQI	Guidance for Assessing and Mitigating Air Quality Impacts
ISMND	Initial Study Mitigated Negative Declaration
LCI	Governor's Office of Land Use and Climate Innovation
LOS	Level of Service
NAAQS	National Ambient Air Quality Standards
NOI	Notice of Intent
ND	Negative Declaration
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
NPDES	National Pollution Discharge System
PEIR	Program Environmental Impact Report
PRC	Public Resources Code
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SSJVIC	Southern San Joaquin Valley Information Center
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
TAC	Toxic Air Contaminant

TCR	Tribal Cultural Resource
USEPA	United States Environmental Protection Agency
USGS	U.S. Geological Survey
USDOT	United States Department of Transportation



Figure 3-1. Vicinity Map

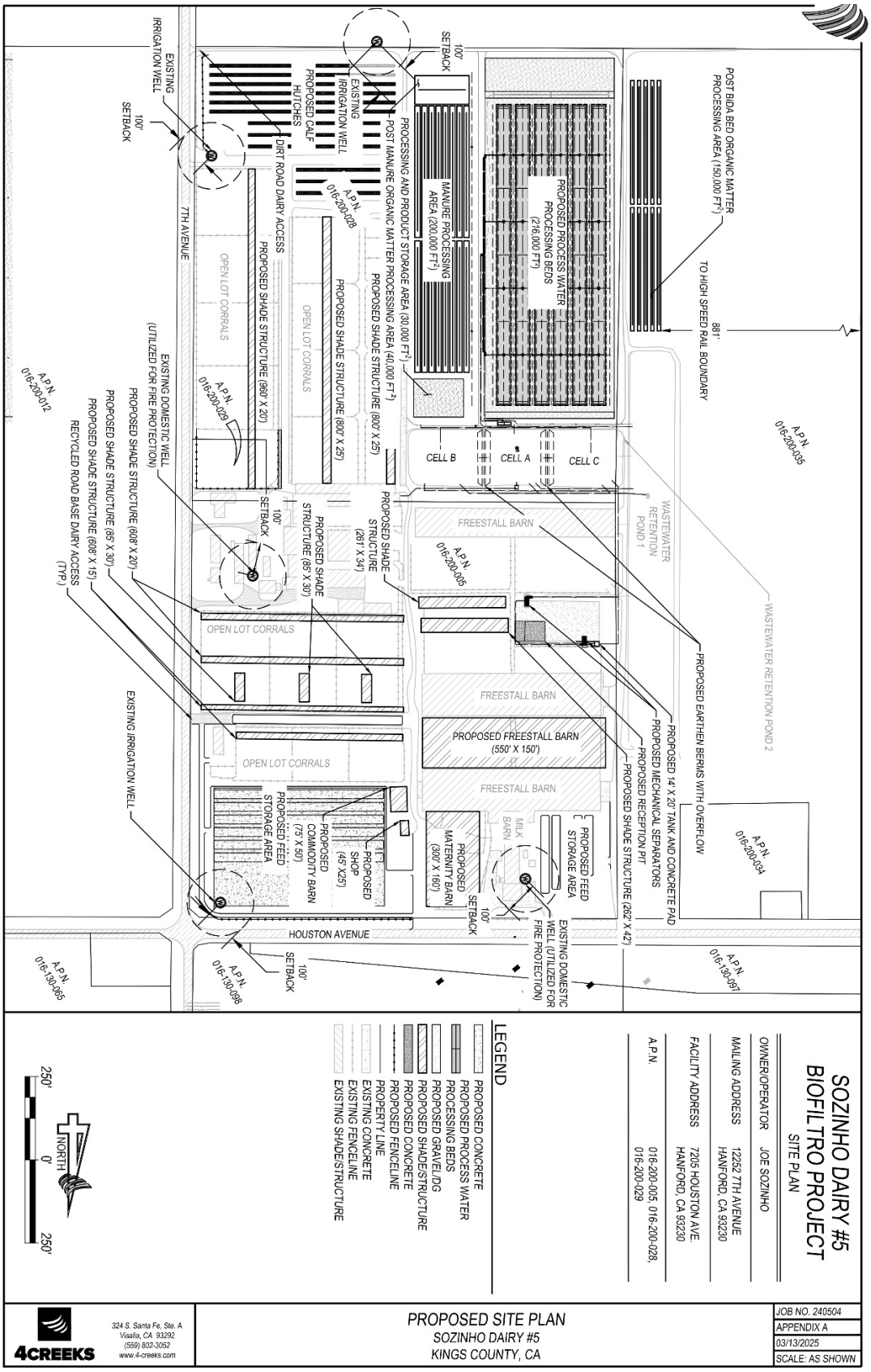


Figure 3-2: Site Plan

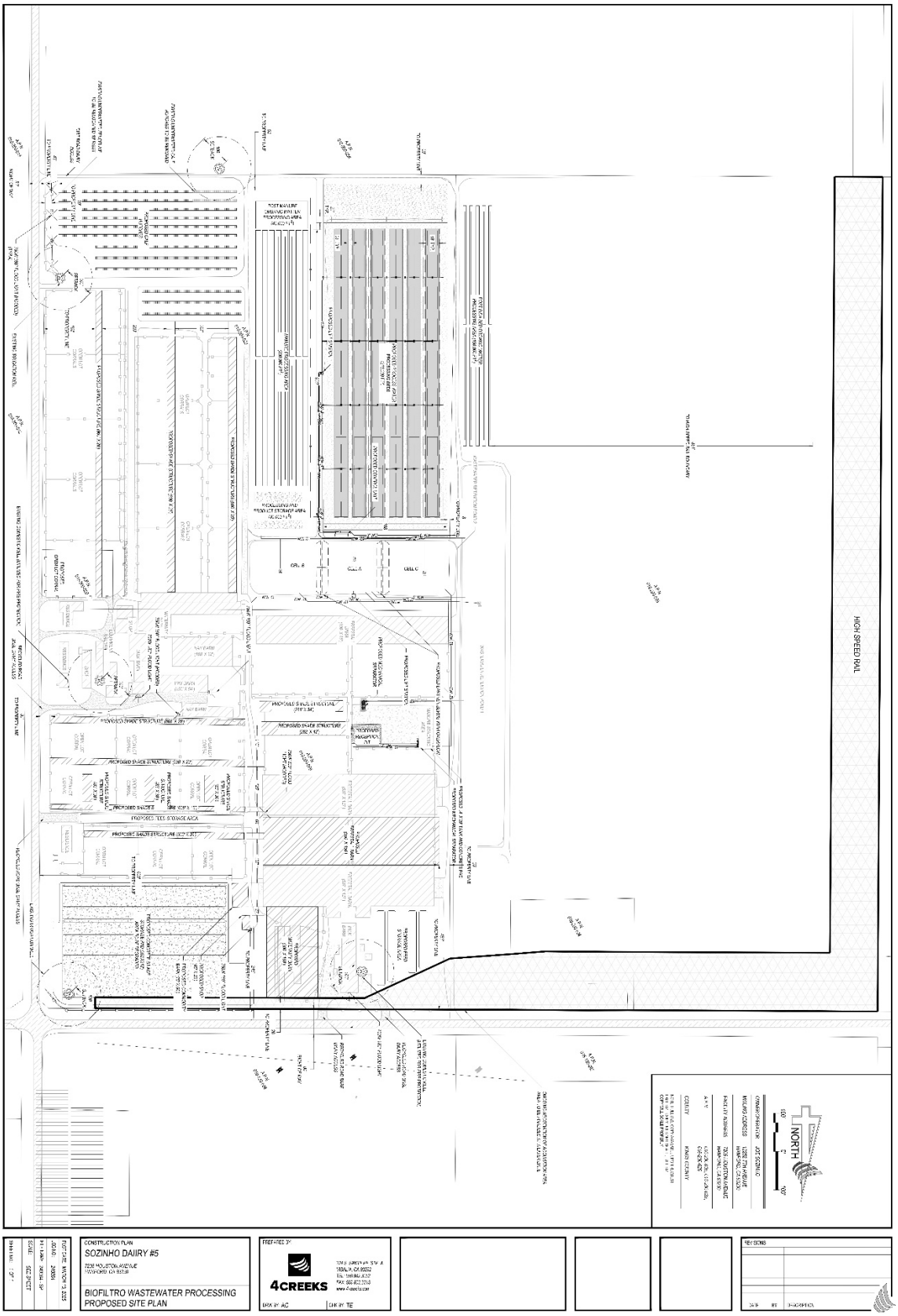


Figure 3-2: Site Plan

3.3 EVALUATION OF ENVIRONMENTAL IMPACTS

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

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

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

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

5. 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:

    - Earlier Analysis Used. Identify and state where they are available for review.
    - 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.
    - Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated

or refined from the earlier document and the extent to which they address site-specific conditions for the project.

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

3.4 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	☑ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forest Resources	☑ Hazards and Hazardous Materials	☐ Recreation
☑ Air Quality	☑ Hydrology and Water Quality	☑ Transportation
☑ Biological Resources	☐ Land Use and Planning	☑ Tribal Cultural Resources
☑ Cultural Resources	☐ Mineral Resources	☐ Utilities and Service System
☑ Energy	☐ Noise	☐ Wildfire
☐ Geology	☐ Population	☑ Mandatory Findings of Significance

DETERMINATION: (To be completed by the Lead Agency) Where potential impacts are anticipated to be significant, mitigation measures will be required, so that impacts may be avoided or reduced to insignificant levels.

On the basis of this initial evaluation:

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

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

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on

attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

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

	10/2/2025
SIGNATURE	DATE
Victor Hernandez	Kings County Community Development Agency
PRINTED NAME	AGENCY

3.5 ENVIRONMENTAL ANALYSIS

The following section evaluates the impact categories and questions in the checklist and identifies mitigation measures, if applicable.

I. AESTHETICS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within 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 a publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☑
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

Environmental Setting

Scenic Resources: Scenic resources include landscapes and features that are visually or aesthetically pleasing. They contribute positively to a distinct community or region, and these resources produce a visual benefit to communities. The Kings River is approximately 9 miles north of the Project Site and is a known aesthetic resource, but there are no other available scenic resources within the Project vicinity. The surrounding areas contain agricultural fields, which Kings County may consider scenic resources. Another scenic resource is small clusters of Valley Oak Woodlands along the Kings River channel, which are a component of the visual character of northern Kings County.

Scenic Vistas: A scenic vista is a viewpoint that provides a distant view of highly valued natural or artificial landscape features for the benefit of the public. Located in the central portion of the

San Joaquin Valley floor, the Site may have distant views of the Sierra Nevada Foothills, but these views are often impeded due to distance and poor air quality in the region. The Kings River is considered a scenic vista, and the proposed Site is approximately nine miles of this resource.

Existing Visual Character: The following photos demonstrate the aesthetic character of the Project area. As shown, the proposed Project Site area is a relatively flat area characterized by agricultural uses.



Photo 1: Looking west at the wheat field in different stages of harvest. Proposed location of Biofiltro wastewater processing beds.



Photo 2: Looking southeast from the northwest portion of the wheat field. Large, mature trees can be seen in the background. Proposed location of Biofiltro wastewater processing beds and storage area.



Photo 3: Looking northwest at wastewater processing beds, the proposed location for two earthen berms. Wheat field shown on the left and freestall barn with cows on the right.



Photo 4: Looking west inside freestall barn where a pipeline will be constructed.



Photo 5: Looking west at proposed location of stacking pad and mechanical separator.



Photo 6: *Looking west at proposed location of rerouted vacuum track.*

Regulatory Setting

Scenic Roadways: The California Scenic Highway Program was established in 1963 by the State Legislature to protect and enhance the natural beauty of California highways and adjacent corridors through conservation strategies. The State Scenic Highway System includes a list of highways that have either been officially designated or are eligible for designation. State laws governing the scenic highway program are found in Sections 260-263 in The Street and Highways Code.

State Scenic Highways: According to the California Department of Transportation mapping of State Scenic Highways, Kings County has no officially designated State Scenic Highways. However, the County has one segment of eligible State Scenic Highways, the closest being SR 41 west of Kettleman City and towards the northeast boundary of San Luis Obispo County. This portion of the highway is approximately 30.5 miles from the proposed Site.

Historic Sites: Kings County has many designated key historical site locations that shall be preserved; however, none are located near the proposed Project Site. According to the Kings County General Plan, the National Register of Historic Places lists four sites within Kings County, and three additional sites that have been designated as California Historical Landmarks. Thirteen other historic sites of local importance also exist within the County.

The nearest Historic Site to the Project is Calvary Cemetery, approximately 2.85 miles to the northwest.

2035 Kings County General Plan: The 2035 General Plan *Open Space Element* includes the following goals, objectives, and policies, which would address potential impacts associated with aesthetic resources that relate to the proposed Project:

- **OS GOAL B1: Maintain and protect the scenic beauty of Kings County.**
  - OS OBJECTIVE B1.1: Protect and enhance views from roadways which cross scenic areas or serve as scenic entranceways to cities and communities.
    - *OS Policy B1.1.1*: Coordinate with the Kings County Association of Governments to explore designation of State Route 41, between State Route 33 and the Kern County line, as an Official State Scenic Highway through the Caltrans Transportation Enhancement program.
  - OS OBJECTIVE B1.2: Preserve roadside landscapes which have high visual quality and contribute to the local environment.
    - *OS Policy B1.2.1*: Review new development and utility Projects for compatibility and potential for impacting scenic view sheds along highly traveled scenic routes.
  - OS OBJECTIVE B1.3: Protect the scenic qualities of human-made and natural landscapes and prominent view sheds.
    - *OS Policy B1.3.1*: Require new development to be designed so that it does not significantly impact or block views of Kings County's natural landscape or other important scenic features. Discretionary permit applications will be evaluated against this requirement as part of the development review process. New developments may be required, as appropriate to:
      - Minimize obstruction of views from public lands and rights-of-way.
      - Reduce visual prominence by keeping development and structures below ridgelines.
      - Limit the impact of new roadways and grading on natural settings. Such limits shall be within design safety guidelines.
    - *OS Policy B1.3.2*: Protect the visual access to Kings River and other prominent watercourses by locating and designing new development to minimize visual impacts and obstruction of views of scenic watercourses from public lands and rights-of-way.

Discussion

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

Less than Significant Impact: A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public. The Kings River is the primary scenic vista within this area. The Kings River is approximately nine miles north of the proposed Project Site. Another scenic vista in this region is the Sierra Nevada Mountain range. Still, the proposed Site is over thirty miles from the Sierra Nevada foothills. It will be largely unaffected because they are not visible from the proposed Project Site due to far distances and the poor

air quality between the Site and the Sierra Nevada foothills. There is a *Less than Significant Impact.*

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

No Impact: No officially designated State Scenic Highways are located in Kings County. The proposed Project would not damage any scenic resources within a state scenic highway, and there is *No Impact.*

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

No Impact: The proposed Project Site is in a non-urbanized agricultural area within an unincorporated portion of Kings County. Because the Project Site is located in a previously disturbed agricultural area, its development is not anticipated to create a visually degraded character or quality to the Site or the properties near and around it. Additionally, it will be required to comply with the design review and design limitations required by the General Plan and the County's Development Code which require setbacks, landscaping, and designs to limit the impact on neighboring properties. The proposed Project would not substantially degrade the existing visual character or quality of public views of the Site and its surroundings. The proposed land use is consistent with the dominant land use in the area, General Agriculture – 20 Acre minimum. There is *No Impact.*

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

Less than Significant Impact: The Exterior Lighting Plan and the American Society of Agricultural and Biological Engineers (ASAE) Lighting Systems for Agricultural Facilities guidelines, attached as Appendix A, detail the proposed Project's lighting design, which includes ten new lighting sources on the Project Site. This includes two 750-watt 360-degree floodlights and four 750-watt 180-degree floodlights near the center of the site, four 750-watt 360-degree floodlights in the southeast corner near the proposed calf hutches. The 360-degree floodlights would be hooded to prevent light spillage and reduce glare, aligning with best practices for agricultural lighting to minimize adverse effects on surrounding areas. The 180-degree floodlights would be directed away from nearby residences, further minimizing potential impacts. According to the ASAE guidelines for agricultural facilities, proper luminaire design and placement are critical to prevent glare and ensure that light is directed where needed without causing discomfort or visual disruption. As the Project does not involve any structures that would produce glare, and the lighting design follows recommended practices

to prevent significant light trespass or glare, the impact is considered *Less than Significant Impact.*

II. AGRICULTURE AND FOREST RESOURCES:

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

Environmental Setting

Central California is one of the world's premier growing regions. Agriculture is a vital economic resource for Kings County. According to the Kings County 2023 Crop Report, there are 749,100 acres of farmland within the County, resulting in it being the land use for 84.1 percent of the total 890,545 acres of land in the county. The primary commodities produced in Kings County, by total dollar value, are milk, pistachios, cotton, cattle, and tomatoes. The Project is an unincorporated area of Kings County. The proposed Project Site is under a Williamson Act Contract. The proposed Site contains land designated as Confined Animal Enclosure, Prime Farmland, and Farmland of Statewide Importance under the Important Farmland Mapping and Monitoring Program (FMMP).

Regulatory Setting

California Land Conservation Act of 1965: The California Land Conservation Act of 1965, commonly called the Williamson Act, allows local governments to enter into contracts with private landowners to restrict the activities on specific parcels of land to agricultural or open space uses. The landowners benefit from the contract by receiving significantly reduced property tax assessments. The California Department of Conservation (DOC) oversees the California Land Conservation Act; however, local governments are responsible for determining specific allowed uses and enforcing the contract.

California Farmland Mapping and Monitoring Program (FMMP): The FMMP is implemented by the DOC to conserve and protect agricultural lands within the State. The land is included in this program based on soil type, annual crop yields, and other factors that influence the quality of farmland. The FMMP mapping categories for the most important statewide farmland are as follows:

- ***Prime Farmland*** has the ideal physical and chemical composition for crop production. It has been used for irrigated production four years before classification and can produce sustained yields. 12% of Kings County is classified as Prime Farmland.

- ***Farmland of Statewide Importance*** has been used for irrigated production four years before classification and is only slightly poorer quality than Prime Farmland. 35% of Kings County is classified as Farmland of Statewide Importance.

- ***Unique Farmland*** has been cropped four years before classification and does not meet the Prime Farmland or Farmland of Statewide Importance criteria, but it has produced specific crops with high economic value. 2% of Kings County is classified as Unique Farmland.

- ***Farmland of Local Importance*** encompasses farmland that does not meet the criteria for the previous three categories. These may lack irrigation, produce major crops, be zoned as agricultural, and/or support dairy. 1% of Kings County is classified as Farmland of Local Importance.

- ***Grazing Land*** has vegetation that is suitable for grazing livestock. 40% of Kings County is Grazing Land.

2035 Kings County General Plan: The 2035 General Plan *Land Use Element* includes the following goals, objectives, and policies, which reduce impacts associated with agricultural land conversion and protect existing agricultural resources that relate to the proposed Project:

- **LU Goal B1: Protect agricultural lands throughout the County, and in particular along the edges of Community Districts and Urban Fringe by maintaining large parcel sizes and preventing the premature development of incompatible urban uses.**
  - LU Objective B1.1: Preserve the integrity of the County's agricultural land resources through agricultural land use designations and other long term preservation policies.
    - *LU Policy B1.1.1*: Designate all agricultural and grazing land outside of planned urban areas as Limited Agriculture, General Agriculture, Exclusive Agriculture, or Natural Resource Conservation.
  - LU Objective B1.2: Maintain large parcel sizes of agricultural designated land within Urban Fringe areas and around Community Districts to retain viable agricultural production until such time as land is planned and ready for conversion to other uses.

- **LU Goal B2: Agricultural production continues to be supported and enhanced in areas designated for agriculture, while conflicts between agriculture and non-agricultural uses are minimized.**
  - LU OBJECTIVE B2.1: Recognize agriculture as the highest and best use of agricultural designated land and preserve the right of farmers and agricultural operations to continue customary and usual agricultural practices, and operate in the most efficient manner possible.
    - *LU Policy B2.1.1*: The primary use of land designated Limited Agriculture, General Agriculture, and Exclusive Agriculture shall remain devoted to agricultural uses and related support services.

The **2035 Kings County General Plan** *Open Space Element* contains the following objective to limit impacts to agricultural resources:

- OS Objective A1.1: Protect agricultural land as an important, sustainable component of the Kings County economy.

The **2035 Kings County General Plan** *Resource Conservation Element* contains the following objectives and policies to limit impacts to agricultural resources:

- RC Objective B1.1: Identify the County's highest priority agricultural lands that are critical to the County's agricultural economy, prime soils, and water availability, and emphasize higher preservation efforts for these areas.
  - *RC Policy B1.1.1*: Maintain the County's Priority Agricultural Land Model to serve as an information resource in evaluating urban growth and impacts related to the County's agricultural economy and redirect that growth where possible to the lowest priority agricultural land. This model is referenced in Kings County's 2008 Agricultural Land Conversion Study.

- *RC Policy B1.1.2*: Use the Priority Agricultural Model as a reference for determining potential economic and resource impacts related to the loss of agricultural land resulting from conversion to urban uses.

➢ RC Objective C1.1: Conserve prime agricultural soils and avoid their conversion to non-agricultural uses.

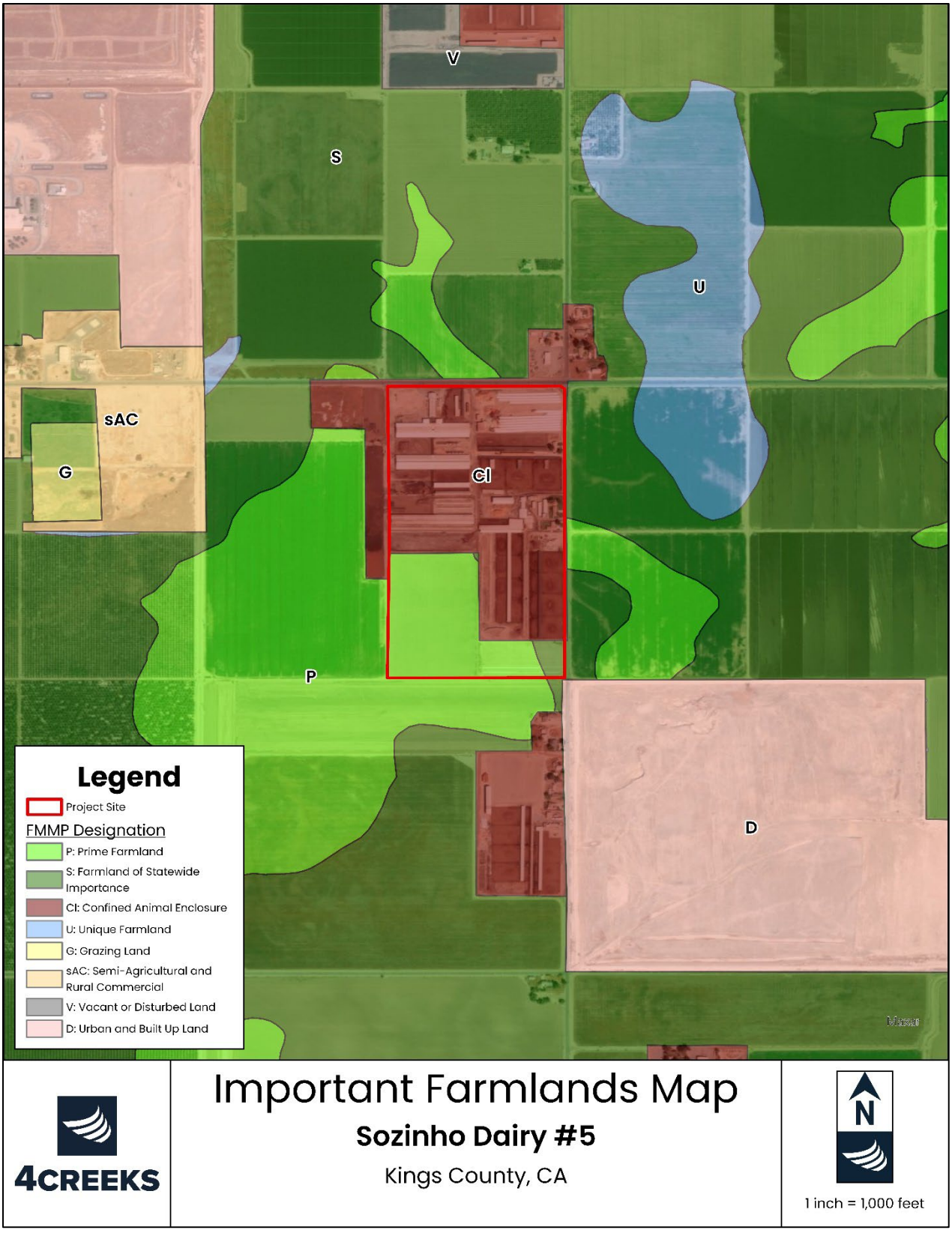


Figure 3-3: Important Farmlands Map

Discussion

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?

Less Than Significant Impact: The Project Site is currently a dairy facility surrounded by agricultural properties and a few rural residences. According to the Important Farmland Map, the Site includes land designated as Confined Animal Enclosure, Prime Farmland, and Farmland of Statewide Importance. Most of the proposed wastewater processing beds and related improvements will be located on land designated as Prime Farmland. However, these improvements, including the wastewater processing beds, are integral to the dairy's operations and constitute an agricultural use, as they support the management and treatment of process water generated by the dairy facility.

The Project will not convert Prime Farmland or Farmland of Statewide Importance to non-agricultural use, as the proposed improvements maintain the Site's existing function as a dairy facility, consistent with the General Agriculture – 20 Acre Minimum designation under the 2035 Kings County General Plan. The Biofiltro system and associated infrastructure are designed to enhance the dairy's operational efficiency and environmental sustainability, aligning with agricultural practices. The Project will follow all existing and proposed 2035 General Plan policies to reduce potential impacts. As the proposed development remains an agricultural use and does not alter the site's overall agricultural character, the Project will have a *Less than Significant Impact.*

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

No Impact: The Sozinho Dairy #5 Project Site and surrounding properties are zoned as General Agriculture – 20 Acre Minimum (AG-20) under the Kings County Development Code, which permits agricultural activities, including dairy operations, as a primary use. The proposed improvements are integral components of the dairy's operations. These improvements are designed to enhance animal comfort, streamline operational efficiency, and improve wastewater management and nutrient recycling, all of which are consistent with the agricultural activities allowed in the AG-20 zoned district.

The Biofiltro wastewater processing beds utilize vermifiltration to treat process water generated on-site, producing higher-quality water for reuse or land application, which supports the dairy's environmental sustainability and operational needs. Similarly, the feed storage areas, animal housing, and organic matter processing areas are directly related to the dairy's core functions of animal care, feed management, and manure processing for land application. These improvements do not alter the Site's primary agricultural use but instead

enhance its functionality as a dairy facility, aligning with the AG-20 zoning designation that explicitly permits such agricultural operations.

The Project Site is also under a Williamson Act Contract, which restricts land use to agricultural or compatible open-space activities in exchange for reduced property tax assessments, as governed by the California Land Conservation Act of 1965. Dairy operations, including the proposed improvements, are considered compatible with the Williamson Act, as they support and enhance agricultural production. The proposed modifications do not involve urban development or other non-agricultural uses that would conflict with the contract's restrictions.

Therefore, the proposed improvements are consistent with the existing AG-20 zoning and the Williamson Act Contract, as they are integral to the dairy's agricultural operations and do not introduce non-agricultural uses. There is *No Impact* on the zoning for agricultural use or the Williamson Act Contract.

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

No Impact: The Project Site is not zoned for forest or timberland production. Therefore, *No Impacts* would occur.

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

No Impact: No conversion of forestland, as defined under the Public Resource Code or General Code, will occur as a result of the Project, and there will be *No Impacts*.

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 forestland to non-forest use?

Less than Significant Impact: As discussed above, the proposed Project does not convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance to non-agricultural use. The Project does not include any features that could result in forestland conversion to non-forest use. There is a *Less than Significant 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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☑
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable Federal or state ambient air quality standard?	☑	☐	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☑	☐	☐	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☑	☐	☐

Environmental Setting

Air quality is primarily a function of local climate, local sources of air pollution, and regional pollution transport. The amount of a given pollutant in the atmosphere is determined by the amount of the pollutant released and the atmosphere's ability to transport and dilute the pollutant. The significant determinants of transport and dilution are wind, atmospheric stability, terrain, and, for photochemical pollutants, sunshine.

A region's topographic features directly correlate with air pollution flow and therefore are used to determine the boundary of air basins. The proposed Project is in Kings County, within the jurisdiction of the SJVAPCD, which regulates air quality in the San Joaquin Valley Air Basin (SJVAB). The SJVAB comprises approximately 25,000 square miles and covers seven counties: Fresno, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. It also covers the western portion of an eighth county, Kern. The SJVAB is defined by the Sierra Nevada mountains in the east (8,000 to 14,000 feet in elevation), the Coast Ranges in the west (averaging 3,000 feet in elevation), and the Tehachapi mountains in the south (6,000 to 8,000 feet in elevation). The SJVAB is topographically flat with a slight downward gradient to the northwest. The SJVAB opens to the sea at the Carquinez Straits, where the San Joaquin-Sacramento Delta empties into San Francisco Bay. An aerial view of the SJVAB would simulate a "bowl" opening only to the north. These topographic features restrict air movement through and out of the SJVAB.

The State of California (State) and the Federal government have established health-based ambient air quality standards (AAQS) for seven air pollutants. As detailed in Table 3-1, these pollutants include ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO2), sulfur dioxide (SO2), particulate matter less than 10 microns in size (PM10), particulate matter less than 2.5 microns in size (PM2.5), and lead. In addition, the State has set standards for sulfates, hydrogen sulfide (H2S), vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Pollutant	Averaging Time	California Standards[1]		National Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone (03)[8]	1 Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	--	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	0.070 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM10)[9]	24 Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	20 µg/m³		--		
Fine Particulate Matter ($PM_{2.5}$)[9]	24 Hour	--	Gravimetric or Beta Attenuation	35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Annual Analysis
	Annual Arithmetic Mean	12 µg/m³		9 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	35 ppm (40 mg/m³)	--	Non-Dispersive Infrared Photometry (NDIR)
	8 Hour	9.0 ppm (10 mg/m³)		9 ppm (10 mg/m³)	--	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)		--	--	
Nitrogen Dioxide (NO2)[10]	1 Hour	0.18 ppm (339 µg/m³)	Gas Phase Chemiluminescence	100 ppb (188 µg/m³)	--	Gas Phase Annual Chemiluminescence
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)		53 ppb (100 µg/m³)	Same as Primary Standard	
Sulfur Dioxide (SO_2)[11]	1 Hour	0.25 ppm (655 µg/m³)	Ultraviolet Fluorescence	75 ppb (196 µg/m³)	--	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	3 Hour	--		--	0.5 ppm (1300 µg/m³)	
	24 Hour	0.04 ppm (105 µg/m³)		0.14 ppm (for certain areas)[11]	--	
	Annual Arithmetic Mean	--		0.030 ppm (for certain areas)[11]	--	
Lead[12,13]	30 Day Average	1.5 µg/m³	Atomic Absorption	--	--	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	--		1.5 µg/m3 (for certain areas)[13]	Same as Primary Standard	
	Rolling 3-Month Average	--		0.15 µg/m³		
Visibility Reducing Particles[14]	8 Hour	See footnote 14	Beta Attenuation and Transmittance through Filter Tape	No National Standard		
Sulfates	24 Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[12]	24 Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

1. California standards for O3, CO (except 8-hour Lake Tahoe), SO2 (1- and 24-hour), NO2, and PM (PM10, PM2.5, and visibility-reducing particles) are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2. National standards (other than for O3 and PM and those based on the annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth-highest 8-hour concentration measured at each Site in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 μg/m3 is equal to or less than 1. For PM2.5, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the USEPA for further clarification and current national policies.
3. Concentration is expressed first in the units in which it was promulgated. Most measurements of air quality are to be corrected to a reference temperature of 25ºC and a reference pressure of 760 torrs; ppm in this table refers to ppm by volume or micromoles of pollutant per mole of gas. Equivalent units given in parentheses are based upon a reference temperature of 25ºC and a reference pressure of 760 torrs.
4. Any equivalent measurement method that can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.
5. National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.
6. National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
7. The reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.
8. On October 1, 2015, the national 8-hour O3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.
9. On February 7, 2024, the national annual PM2.5 primary standard was lowered from 12.0 μg/m3 to 9.0 μg/m3 . The existing national 24- hour PM2.5 standards (primary and secondary) were retained at 35 μg/m3 , as was the annual secondary standard of 15.0 μg/m3 . The existing 24-hour PM10 standards (primary and secondary) of 150 μg/m3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years
10. To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each Site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.
11. On June 2, 2010, a new 1-hour SO2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each Site must not exceed 75 ppb. The 1971 SO2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated as Nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved. Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard, the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.
12. CARB has identified lead and vinyl chloride as "toxic air contaminants" with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.
13. The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 μg/m3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated as Nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.
14. In 1989, CARB converted both the general statewide 10 mi visibility standard and the Lake Tahoe 30 mi visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

ºC = degrees Celsius	CO = carbon monoxide	PM2.5 = particulate matter less than 2.5 microns in size
mg/m3 = micrograms per cubic meter	mg/m3 = milligrams per cubic meter	PM10 = particulate matter less than 10 microns in size
AAQS = ambient air quality standards	mi = mile/miles	ppb = parts per billion
USEPA = United States Environmental Protection Agency	NO2 = nitrogen dioxide	ppm = parts per million
CARB = California Air Resources Board	O3 = ozone	SO2 = sulfur dioxide
	PM = particulate matter	

Table 3-1. Ambient Air Quality Standards; Source: California Air Resources Board (CARB) 2024.

Because the United States Environmental Protection Agency (USEPA) sets the concentration standards at a level that protects public health with an adequate margin of safety, these health effects would not occur unless the standards are exceeded by a large margin or prolonged period. Table 3-2 summarizes the most common health and environmental effects for each of the air pollutants for which there is a National AAQS (NAAQS) or California AAQS (CAAQS), as well as for toxic air contaminants (TACs). CAAQS are typically more stringent than NAAQS. Among the pollutants, O_3 and particulate matter ($PM_{2.5}$ and PM_{10}) are considered pollutants with regional effects, while the others have more localized effects (CARB 2022a).

Pollutant	Effects on Health and the Environment
Ozone (O3)	• Respiratory symptoms • Worsening of lung disease leading to premature death • Damage to lung tissue • Crop, forest, and ecosystem damage • Damage to a variety of materials, including rubber, plastics, fabrics, paint, and metals.
Particulate matter less than 2.5 microns in size ($PM_{2.5}$)	• Premature death • Hospitalization for worsening of cardiovascular disease • Hospitalization for respiratory disease • Asthma-related emergency room visits • Increased symptoms, increased inhaler usage
Particulate matter less than 10 microns size (PM_{10})	• Premature death and hospitalization, primarily for worsening of respiratory disease • Reduced visibility and material soiling
Nitrogen oxides (NOX)	• Lung irritation • Enhanced allergic responses
Carbon monoxide (CO)	• Chest pain in patients with heart disease • Headache • Light-headedness • Reduced mental alertness
Sulfur oxides (SO_x)	• Worsening of asthma: increased symptoms, increased medication usage, and emergency room visits
Lead	• Impaired mental functioning in children • Learning disabilities in children • Brain and kidney damage
Hydrogen sulfide (H_2S)	• Nuisance odor (rotten egg smell) • At high concentrations: headache & breathing difficulties
Sulfate	• Same as $PM_{2.5}$, particularly worsening of asthma and other lung diseases. • Reduces visibility
Vinyl chloride	• Central nervous system effects (e.g., dizziness, drowsiness, and headaches) • Long-term exposure (i.e., liver damage and liver cancer)
Visibility reducing particles	• Reduced airport safety, scenic enjoyment, road safety, and discourages tourism
Toxic air contaminants (TACs). About 200 chemicals have been listed as TACs.	• Cancer • Reproductive and developmental effects • Neurological effects

Table 3-2. Summary of Health and Environmental Effects of the Criteria Air Pollutants; Source: California Air Resources Board (CARB). n.d.-a. Common Air Pollutants

The California Clean Air Act (CCAA) allows SJVAPCD and other air districts to manage transportation activities at indirect sources. Indirect sources of pollution include any facility, building, structure, installation, or combination thereof that attracts or generates mobile-source emissions of any pollutant. In addition, area-source emissions that are generated when minor sources collectively emit a substantial amount of pollution are also managed by the local air districts. Examples would be the motor vehicles at an intersection, at a mall, and on highways. SJVAPCD also regulates stationary sources of pollution throughout its jurisdictional area. The California Air Resources Board (CARB) regulates direct emissions from motor vehicles.

Air Pollution Constituents and Attainment Status

The CARB coordinates and oversees both State and Federal air pollution control programs in the State. CARB oversees the activities of local air quality management agencies and maintains air quality monitoring stations throughout the State in conjunction with the USEPA

and local air districts. The CARB has divided the State into 15 air basins based on meteorological and topographical air pollution factors. The CARB and USEPA use data collected at these stations to classify air basins as Attainment, Nonattainment, Nonattainment-Transitional, or Unclassified, based on air quality data for the most recent three calendar years compared with the AAQS.

Attainment areas may be the following:

- **Attainment/Unclassified ("Unclassifiable" in Some Lists):** These basins have never violated the air quality standard of interest or do not have enough monitoring data to establish Attainment or Nonattainment status.

- **Attainment-Maintenance (National Ambient Air Quality Standards [NAAQS] Only):** These basins violated a NAAQS that is currently in use (were Nonattainment) in or after 1990 but now attain the standard and are officially redesignated as Attainment by the USEPA with a Maintenance State Implementation Plan (SIP).

- **Attainment (Usually Only for CAAQS, But Sometimes for NAAQS):** These basins have adequate monitoring data to show attainment, have never been Nonattainment, or, for NAAQS, have completed the official Maintenance period.

- **Nonattainment** areas are imposed with additional restrictions as required by the USEPA. The air quality data is also used to monitor progress in attaining air quality standards. Table 3-3 lists the attainment status for the criteria pollutants in the SJVAB.

Toxic Air Contaminants

The public's exposure to TACs is a significant environmental health issue in the State of California. In 1983, the California Legislature enacted a program to identify the health effects of TACs and to reduce exposure to these contaminants to protect the public health. The Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." In addition, substances which have been listed as federal hazardous air pollutants (HAPs) pursuant to Title 42 United States Code (USC) Section 7412 are TACs under the State's air toxics program pursuant to Section 39657(b) of the California Health and Safety Code. The CARB formally made this identification on April 8, 1993 (Title 17, California Code of Regulations [CCR], Section 93001). Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines the substance is an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act), AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987), and Senate Bill (SB) 25 (Children's

Environmental Health Protection Act). The Tanner Air Toxics Act sets forth a formal procedure for the CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit designated TACs. If there is a safe threshold for a substance for which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

Air toxins from stationary sources are also regulated in California under AB 2588. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the designated Air Quality Management District (AQMD) or Air Pollution Control District (APCD). High-priority facilities are required to perform an HRA and, if specific thresholds are exceeded, are also required to communicate the results to the public in the form of notices and public meetings. To date, the CARB has designated over 200 compounds as TACs. Additionally, the CARB has implemented control measures for a number of compounds that pose high risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel fueled engines (diesel particulate matter [DPM]).

Local Air Quality

The SJVAPCD and the CARB maintain ambient air quality monitoring stations. The air quality monitoring station that monitors air pollutant data closest to the Site is the Hanford-S Irwin Street Monitoring Station. The air quality trends from this station are used to represent the ambient air quality in the Project area. The ambient air quality data in Table 3-4 show that NO_2 levels are below the applicable State and Federal standards. However, annual average concentrations of PM_{10}, $PM_{2.5}$, and O_3 concentrations frequently exceed their respective standards. As CO ambient concentrations have become so low throughout the region, no station near the Project Site monitors CO.

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – One hour	Standard Revoked	Nonattainment/Severe
Ozone – Eight hour	Extreme Nonattainment	Nonattainment
PM 10	Attainment (Maintenance)	Nonattainment
PM 2.5	Nonattainment	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Lead	No Designation/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Sulfates	No Federal Regulation	Attainment
Hydrogen Sulfide	No Federal Regulation	Unclassified
Ozone (1-Hour)	Standard Revoked	Severe/Nonattainment

$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size

Table 3-3. Air Quality Attainment Status for SJVAB; Source: SJVAPCD Ambient Air Quality Standards & Valley Attainment Status.

Pollutant	Standard	2022	2023	2024
O_3				
Maximum 1-Hour Concentration (ppm)	State: 0.09 ppm	0.091	0.091	0.099
	No. of days exceeded	*0*	*0*	*2*
Max 8-hour concentration (ppm)	State: 0.07 ppm	*0.082*	*0.084*	*0.088*
	Federal: 0.07 ppm			
No. of days exceeded	State:	*13*	*14*	*29*
	Federal:	*12*	*11*	*25*
PM_{10}				
Maximum 24-hour concentration (µg/m³)	State: 50 µg/m³	*251.6*	*159.3*	*169*
	Federal: 150 µg/m³			
No. of days exceeded	State:	*143*	*116.5*	*115.8*
	Federal:	*1*	*1*	*4*
Annual avg. concentration (µg/m³)		*49.9*	*44.2*	*44.4*
Exceeds Standard?	State: 20 µg/m³	*Yes*	*ND*	*Yes*
$PM_{2.5}$				
Maximum 24-Hour concentration (µg/m³)	Federal: 35 µg/m³	*14.1*	*12.5*	*11.8*
	No. of days exceeded	*27*	*11*	*8*
Annual avg. concentration (µg/m³)	State: 12 µg/m³	*14.1*	*12.5*	*
	Federal: 12 µg/m³			
NO_2				
Maximum 1-hour concentration (ppb):	State: 180 ppb	*62.9*	*51.9*	*51.5*
	Federal: 100 ppb			
No. of days exceeded	State:	*0*	*0*	*0*
	Federal:	*0*	*0*	*0*
Annual avg. concentration (ppb):	State: 30 ppb	*8*	*8*	*8*
	Federal: 53 ppb			
Exceeds Standard?	State:	*No*	*No*	*No*
	Federal:	*No*	*No*	*No*
Note: Pollutant concentration data from the Hanford-S Irwin Street Monitoring Station in Hanford, California. * There was insufficient (or no) data available to determine the value.				
µg/m3 = micrograms per cubic meter *ND = No data available* *NO2 = nitrogen dioxide* *O3 = ozone*		*PM10 = particulate matter smaller than 10 microns in size* *ppb = parts per billion* *ppm = parts per million* *PM2.5 = particulate matter smaller than 2.5 microns in size*		

Table 3-4. Air Quality Concentrations in the Project Vicinity; Source: California Air Resource Board (CARB).

Sensitive Receptors and Land Uses in the Project Vicinity: Sensitive receptors include residences such as private homes, condominiums, apartments, living quarters, schools, preschools, daycare centers, in-home daycares, health facilities (e.g., hospitals, long-term care facilities, retirement, and nursing homes), community centers, places of worship, parks (excluding trails), prisons, and dormitories. The nearest sensitive receptors to the Project Site are the single-family residences located to the north and south of the Project.

Regulatory Setting

Federal Regulations

The 1970 Federal Clean Air Act (FCAA) authorized the establishment of national health-based air quality standards and set deadlines for their attainment. The FCAA Amendments of 1990 changed deadlines for attaining national standards and the remedial actions required for areas of the nation that exceed the standards. Under the FCAA, State and local agencies in

areas that exceed the national standards must develop SIPs to demonstrate how they will achieve the national standards by specified dates.

State Regulations

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain CAAQS for CO, O_3, SO_2, and NO_2 by the earliest practical date. The CCAA allows districts to regulate indirect sources and mandates that air quality districts focus on reducing emissions from transportation and area-wide emission sources. Each nonattainment district must adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Regional Regulations

San Joaquin Valley Air Pollution Control District. The SJVAPCD has specific air quality-related planning documents, rules, and regulations. This section summarizes the local planning documents and regulations that may apply to the proposed Project as administered by the SJVAPCD with California Air Resources Board (CARB) oversight.

- ***Regulation VIII - Fugitive PM10 Prohibitions.*** This covers rules for controlling particulate matter during construction and other earthmoving activities.
- ***Rule 2280—Portable Equipment Registration.*** Portable equipment used at Project Sites for less than six consecutive months must be registered with the SJVAPCD. The SJVAPCD will issue the registrations 30 days after receipt of the application.
- ***Rule 4201 and Rule 4204—Particulate Matter Concentration and Emission Rates.*** Rule 4201 and Rule 4202 apply to operations that emit or may emit dust, fumes, or total suspended particulate matter.
- ***Rule 4565 - Biosolids, Animal Manure, and Poultry Litter Operations.*** This could apply given the dairy's manure handling and processing activities.
- ***Rule 4570 - Confined Animal Facilities.*** Applicable due to the dairy's operations involving confined animal feeding.
- ***Rule 4622—Gasoline Transfer Into Motor Vehicle Fuel Tanks.*** Rule 4622 applies to any gasoline storage and dispensing operation or mobile fueler from which gasoline is transferred into motor vehicle fuel tanks. The purpose of this rule is to limit emissions of gasoline vapors from the transfer of gasoline escaping into the atmosphere; vapor recovery systems would be implemented to reduce the release of volatile organic compounds.

- ***Rule 4566— Organic Material Composting Operations.*** Rule 4566 limits emissions of volatile organic compounds (VOCs) from composting operations.
- ***Rule 8011—General Requirements: Fugitive Dust Emission Sources.*** Fugitive dust regulations are applicable to outdoor fugitive dust sources. Operations, including construction operations, must control fugitive dust emissions in accordance with SJVAPCD Regulation VIII. According to Rule 8011, the SJVAPCD requires the implementation of control measures for fugitive dust emission sources. For Projects in which construction-related activities would disturb equal to or greater than 1 acre of surface area, the SJVAPCD recommends that demonstration of receipt of an SJVAPCD-approved Dust Control Plan or Construction Notification Form before issuance of the first grading permit be made a condition of approval.

Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). The SJVAPCD prepared GAMAQI to assist lead agencies and Project applicants in evaluating the potential air quality impacts of Projects in the SJVAB. The GAMAQI provides SJVAPCD-recommended procedures for evaluating potential air quality impacts during the CEQA environmental review process. The GAMAQI guides evaluating short-term (construction) and long-term (operational) air emissions. The most recent version of the GAMAQI, adopted on March 19, 2015, was used in this evaluation. It contains guidance on the following:

- Criteria and thresholds for determining whether a Project may have a significant adverse air quality impact;
- Specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- Methods to mitigate air quality impacts; and
- Information for air quality assessments and environmental documents, including air quality, regulatory setting, climate, and topography data.

2035 Kings County General Plan: The 2035 General Plan *Air Quality Element* includes the following goals, objectives, and policies, which reduce impacts associated with air quality that relate to the proposed Project:

- **AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.**
  - AQ Objective C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed Projects within the County.
    - *AQ Policy C1.1.1*: Assess and mitigate Project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
    - *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized, consistently, and reasonably mitigated at a minimum, to levels as required by CEQA.

- *AQ Policy C1.1.6*: Encourage and support the development of innovative and effective mitigation measures and programs to reduce air quality and climate change impacts through proactive coordination with the SJVAPCD, Project applicants, and other knowledgeable and interested parties.

❖ **AQ Goal F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.**

➢ AQ Objective F1.1: Locate adequate sites for industrial development and roadway projects away from existing and planned sensitive land uses which minimize or avoid potential health risks to people that might result from hazardous air pollutant emissions.

- *AQ Policy F2.1.1*: Coordinate with the SJVAPCD to ensure that construction, grading, excavation, and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.
- *AQ Policy F2.1.2*: Require all access roads, driveways, and parking areas serving new commercial and industrial development are constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Discussion

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

No Impact: The Sozinho Dairy #5 Project involves facility modifications aimed at enhancing the dairy's operational efficiency, animal welfare, and environmental sustainability. These improvements include the installation of Biodynamic Aerobic (BIDA) beds for wastewater treatment, three feed storage areas, twelve rows of calf hutches, one freestall barn, one maternity barn, twelve shade structures over existing open lot corrals, one additional open lot corral, one commodity barn and one shop. These modifications are designed to support the dairy's agricultural operations while maintaining compliance with air quality plans in the SJVAB, which is designated as nonattainment for O_3, PM_{10}, and $PM_{2.5}$ under both Federal and State standards.

The SJVAPCD has developed air quality plans, including the 2023 Plan for the Revoked 1-Hour Ozone Standard and the 2022 Plan for the 2015 8-Hour Ozone Standard. The Sozinho Dairy #5 project is consistent with these plans, as the proposed improvements are expected to either maintain or improve air quality through targeted measures to control emissions.

BIDA Beds and Wastewater Treatment: The installation of 216,000 square feet of BIDA beds utilizes vermifiltration to treat process water, reducing volatile organic compounds (VOCs) and odors that contribute to ozone formation and other air quality issues. Regular tillage of the beds every two weeks promotes aeration, preventing stagnation and minimizing odor emissions. Additionally, cleaning drainage channels ensures proper drainage, further reducing odor

release. These measures align with SJVAPCD Rule 4565 (Biosolids, Animal Manure, and Poultry Litter Operations) and Rule 4566 (Organic Material Composting Operations), which aim to limit VOC emissions from manure and composting activities.

Feed Storage Areas: The three feed storage areas, located at the northeastern and northwestern corners of the facility, are designated for silage storage. These areas relocate existing feed storage operations on-site, maintaining current operational practices without increasing vehicle trips or associated emissions. By consolidating feed storage, the Project minimizes dust generation from handling activities, which could otherwise contribute to PM_{10} and $PM_{2.5}$ emissions. The use of gravel or decomposed granite around these areas, as part of the project's dust control measures, further reduces fugitive dust, complying with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibitions).

Calf Hutches, Freestall Barn, Maternity Barn, Shop and Shade Structures: The addition of twelve rows of calf hutches, one freestall barn, one maternity barn, one shop and twelve shade structures over existing open lot corrals enhance animal comfort and operational efficiency. These improvements do not introduce new sources of air pollutants, as they primarily involve stationary structures that do not generate significant emissions during operation. The calf hutches reduce the need for off-site calf transport, decreasing vehicle-related emissions of criteria pollutants such as nitrogen oxides (NO_x) and $PM_{2.5}$. The shade structures and barns reduce dust generation by providing covered areas that limit soil disturbance from animal movement, contributing to lower PM_{10} emissions.

Open Lot Corral: The addition of one open lot corral supports animal housing and comfort without significantly altering the site's operational footprint. Dust control measures, such as the use of gravel or decomposed granite and regular maintenance to prevent manure buildup, will minimize fugitive dust emissions, consistent with SJVAPCD Rule 4570 (Confined Animal Facilities).

The Project includes a Dust Control Plan that complies with SJVAPCD Regulation VIII, ensuring that construction activities, such as grading for the BIDA beds or corral installation, do not exceed thresholds for PM_{10} emissions. This plan incorporates Best Management Practices (BMPs), such as dust suppression techniques (e.g., watering, soil stabilizers, and covering stockpiles), to control fugitive dust during construction. Additionally, measures to reduce vectors (e.g., tilling BIDA beds to absorb moisture and removing manure buildup) and control dust around the vermifiltration beds further minimize potential air quality impacts.

Overall, the proposed improvements to the dairy's agricultural operations are designed to reduce emissions of VOCs, odors, and particulate matter through advanced wastewater treatment, dust control, and efficient operational practices. These efforts align with SJVAPCD's air quality plans and regulations, ensuring that the Project does not conflict with or obstruct their implementation. Instead, the Project is expected to contribute positively to local air quality

by reducing emissions from dairy operations. Therefore, the Project will have *No Impact* on the implementation of the applicable air quality plan.

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?

Potentially Significant Impact: The SJVAB is currently classified as non-attainment for ozone (O_3), PM_{10}, and $PM_{2.5}$ under both Federal and State air quality standards. Dairy operations are recognized as significant sources of emissions contributing to these pollutants, including particulate matter (PM_{10}), ammonia, methane, and volatile organic compounds (VOCs), which are precursors to ozone formation. The Sozinho Dairy #5 Project proposes modifications, including wastewater treatment enhancements through BIDA beds and vermifiltration, as well as improvements to shades, corrals, and feed storage, which may influence the emission profile of these pollutants.

The Project's wastewater treatment improvements, utilizing BIDA beds and vermifiltration, aim to enhance process water quality before reuse or land application, potentially reducing ammonia and VOC emissions associated with wastewater. The Fugitive Dust Emissions Control Plan (FDECP) outlined in Appendix H includes measures such as regular corral cleaning, controlled vehicle movement, water truck use to suppress dust on unpaved roads, and the application of decomposed granite or gravel around BIDA beds to minimize fugitive dust emissions. These measures are designed to reduce PM_{10} and $PM_{2.5}$ emissions from dust-generating activities.

Odor control measures, including bi-weekly tilling of BIDA beds and regular maintenance of drainage channels, aim to prevent stagnant conditions that could increase VOC and ammonia emissions. However, without a detailed emissions inventory, the Project's net impact on criteria pollutants remains uncertain. The vermifiltration process, involving wood chips, microbial activity, and worms, may alter the emission profile by reducing ammonia volatilization, but it could also introduce new emission sources if not properly managed, as microbial processes can produce VOCs under certain conditions.

The SJVAB's non-attainment status for ozone, PM_{10}, and $PM_{2.5}$ underscores the need for rigorous assessment of any new or modified emission sources. The 2022 Ozone Plan for the 2015 8-Hour Ozone Standard and the 2024 Plan for the 2012 PM2.5 Standard, adopted by the SJVAPCD and CARB, emphasize stringent controls on VOCs, ammonia, and particulate matter to achieve attainment. The absence of a comprehensive air quality analysis for the Project, including quantified emissions of VOCs, ammonia, and particulate matter, limits the ability to determine whether these improvements will result in a net increase or decrease in criteria pollutants. Furthermore, dairy operations contribute significantly to regional ammonia emissions, which react with nitrogen oxides to form secondary $PM_{2.5}$, exacerbating the SJVAB's non-attainment challenges.

Given the lack of a detailed emissions inventory and the region's non-attainment status, further analysis is required to evaluate the Project's cumulative impact on air quality. A comprehensive assessment, including modeling of ozone precursors (VOCs and ammonia) and particulate matter emissions, is necessary to determine whether the Project's modifications, including wastewater treatment, shades, corrals, and feed storage improvements, will contribute to a cumulatively considerable net increase in criteria pollutants. Until such an analysis is completed, the Project may result in a potentially significant impact on air quality.

Given these uncertainties, further analysis is required to assess the Project's potential cumulative impact on regional air quality. A detailed emissions inventory, including quantification of ozone precursors, particulate matter, and other pollutants, should be conducted to determine whether the Project results in a net increase in air pollutants. Until such an assessment is completed, the Project may result in a *potentially significant impact* on air quality.

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

Potentially Significant Impact: The Sozinho Dairy #5 Project site is located approximately 250 feet southwest of the nearest sensitive receptor, a single-family residence situated across Houston Avenue. The proposed wastewater processing beds, which are the primary source of potential emissions, are located 1,930 feet from this residence. However, the Project includes proposed silage and feed storage areas positioned closer to the residence than the wastewater processing beds, as well as other improvements that may affect air quality. These factors are evaluated below to assess their potential impacts on sensitive receptors and the mitigation measures proposed to address them.

During construction, the Project will generate temporary emissions from activities such as earthmoving, equipment operation, and vehicle traffic. These activities will produce dust (particulate matter, PM_{10} and $PM_{2.5}$) and exhaust emissions (nitrogen oxides, carbon monoxide, and volatile organic compounds, VOCs). The proximity of the proposed silage and feed storage areas to the residence increases the potential for localized dust and particulate matter exposure during construction. To reduce these impacts, the Project will implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan includes measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. These controls are expected to effectively minimize dust and exhaust emissions, ensuring that construction-related air quality impacts remain less than significant.

Operational emissions from the Project are also expected to be minimal due to the design and function of the BIDA beds, which treat wastewater through vermifiltration. These beds are designed to improve wastewater quality and reduce the emission of VOCs and odors. Additionally, the beds will be regularly maintained to prevent stagnation and odor release, further minimizing potential impacts on air quality.

The proposed silage and feed storage areas, located closer to the residence than the wastewater processing beds, have the potential to generate odors and fugitive dust during material handling, storage, and transport. Silage fermentation can release VOCs and odorous compounds, which may impact the nearby residence if not properly managed. Additionally, dust from feed storage and handling could contribute to localized particulate matter concentrations. To mitigate these impacts, the Project will implement the following measures:

- Silage Management: Silage piles will be covered with tarps or other impermeable materials to reduce VOC emissions and odor release. Regular monitoring and maintenance of silage piles will be conducted to prevent spoilage and anaerobic conditions that exacerbate odors.
- Feed Storage Enclosures: Feed storage areas will utilize enclosed or covered structures where feasible to minimize fugitive dust emissions. Dust suppression techniques, such as misting systems or windbreaks, will be employed during material handling.
- Best Management Practices (BMPs): The Project will adhere to SJVAPCD-recommended BMPs for agricultural operations, including proper storage and handling protocols to reduce emissions from silage and feed activities.

These mitigation measures are expected to substantially reduce the potential for odors and dust from the silage and feed storage areas, minimizing impacts on the nearby residence.

The Project includes additional improvements beyond the wastewater processing beds and silage/feed storage areas, such as potential expansions to dairy operations, infrastructure upgrades, or additional waste management systems. These improvements could introduce new sources of emissions, including VOCs from increased animal housing, ammonia from manure management, or dust from expanded operational activities. To address these potential impacts, the project will implement the following measures in addition to those for silage and feed storage:

- Enhanced Waste Management: The vermifiltration-based BIDA beds will treat wastewater to reduce VOC and ammonia emissions compared to traditional lagoon systems. Regular maintenance of these beds will prevent stagnation and odor release.
- Emission Control Technologies: Where applicable, the Project will incorporate technologies such as biofilters or scrubbers for animal housing or waste management systems to capture odorous compounds and ammonia.
- Operational Controls: The Project will limit idling times for vehicles and equipment, use low-emission machinery where feasible, and implement dust suppression measures for any expanded operational areas.

These measures align with SJVAPCD guidelines and are designed to minimize the incremental increase in emissions from the proposed improvements.

While the individual components of the project (wastewater processing beds, silage/feed storage, and other improvements) are expected to have less than significant impacts with

mitigation, the combined effect of these activities, particularly with the silage and feed storage areas located close to the residences, could potentially result in a more significant air quality impact. If the proposed improvements significantly expand the scale of operations (e.g., a substantial increase in herd size or material handling), further analysis may be required to ensure that cumulative emissions do not exceed SJVAPCD thresholds for pollutants such as VOCs, ammonia, or particulate matter.

The Project will implement a Dust Control Plan during construction and incorporates mitigation measures for the silage and feed storage areas as well as other Project improvements. However, due to the closer proximity of the silage and feed storage areas to the residence and the potential for increased emissions from expanded operations, there is a risk of cumulative air quality impacts, including odors, volatile organic compounds, and particulate matter. Without mitigation measures, these factors could result in a *Potentially Significant Impact* on air quality. Additional analysis and enhanced mitigation may be required to ensure that emissions remain within acceptable limits and to reduce impacts to a less than significant level.

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

Less Than Significant Impact with Mitigation Incorporation: The Sozinho Dairy #5 Project includes modifications aimed at improving wastewater treatment, which inherently involves managing potential odor emissions. The Project will implement BIDA beds that utilize vermifiltration to treat wastewater. This process is designed to reduce odors by improving the quality of wastewater before it enters the retention ponds.

The installation of 216,000 square feet of BIDA beds utilizing vermifiltration (aerobic treatment using woodchips, worms, and microbes) is a major enhancement. This system significantly improves the quality of process water prior to discharge into retention ponds, which reduces odor emissions at their source. Regular tilling of the beds and maintenance of drainage channels, required under Mitigation Measure AIR-1, further minimize the potential for stagnant water and anaerobic conditions that cause odors.

The Project includes extensive organic matter processing areas totaling over 400,000 square feet for screening, drying, and storing manure and separated solids. These areas improve material handling and limit the buildup of wet organic material that could otherwise contribute to strong odors. Post-treatment storage and drying ensure that land-applied materials are stabilized, reducing off-site odor potential.

New animal housing structures such as calf hutches, a freestall barn, and a maternity barn provide better containment of manure and improve onsite cleanliness. Shade structures and a commodity barn contribute to animal comfort and organized feed handling. These upgrades reduce open-lot exposure and help manage odor-producing waste more efficiently.

While the Project will result in a minor increase in service and maintenance traffic, the overall truck trips are expected to remain stable or even decrease due to onsite relocation of feed operations and elimination of offsite calf transport. Emissions from these activities are short-term, intermittent, and not expected to result in adverse odor impacts.

The nearest sensitive receptor is approximately 250 feet from the site boundary, but over 1,900 feet from the nearest potential odor source (the BIDA beds). Combined with the Project's mitigation strategies, this spatial buffer provides substantial odor dispersion and ensures that nuisance emissions will not adversely affect surrounding residences.

Overall, the Sozinho Dairy #5 Project has incorporated effective odor management strategies that are designed to minimize any potential impact on surrounding areas. Given these mitigation measures (AIR-1) and the distance to the nearest sensitive receptors, the Project is not expected to result in emissions, such as odors, that would adversely affect a substantial number of people. Therefore, the impact is considered *Less than Significant with Mitigation Incorporation.*

Mitigation Measures for Impacts on Air Quality Resources

Mitigation Measure AIR-1 (Odor Management). To minimize odor impacts from the Project, the Applicant shall implement an odor management plan. The plan will incorporate several odor management strategies. These strategies will include regularly tilling the BIDA beds to prevent stagnation, reducing the potential for odor emissions. Additionally, the drainage channels associated with the BIDA beds shall be routinely maintained to ensure proper drainage and prevent the accumulation of odorous materials. The Applicant shall develop and adhere to a maintenance schedule for tilling and drainage channel upkeep, with records of these activities maintained and available for review by the Kings County Community Development Agency and the San Joaquin Valley Air Pollution Control District to ensure compliance.

Mitigation Measure AIR-2 (Dust Control During Construction). To minimize construction-related air quality impacts, the Applicant shall implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan shall include measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. The Applicant shall ensure these controls are applied throughout the construction phase to reduce dust and exhaust emissions, with documentation of implementation maintained for review by relevant regulatory agencies.

Mitigation Measure AIR-3 (Wastewater Processing Bed Maintenance). To minimize operational emissions from the wastewater processing beds, the Applicant shall conduct regular maintenance of the BIDA beds to prevent stagnation and odor release. This shall include adherence to a vermifiltration design that improves wastewater quality and reduces

volatile organic compound (VOC) emissions. The Applicant shall develop a maintenance protocol, with records available for inspection by the San Joaquin Valley Air Pollution Control District to verify compliance.

Mitigation Measure AIR-4 (Silage Management). To minimize odors and VOC emissions from silage storage, the Applicant shall cover silage piles with tarps or other impermeable materials. Regular monitoring and maintenance of silage piles shall be performed to prevent spoilage and anaerobic conditions that could exacerbate odors. The Applicant shall establish a schedule for these activities, ensuring records are kept and accessible for review by regulatory authorities.

Mitigation Measure AIR-5 (Feed Storage Dust Suppression). To minimize fugitive dust emissions from feed storage areas, the Applicant shall utilize enclosed or covered structures where feasible. Dust suppression techniques, such as misting systems or windbreaks, shall be employed during material handling. The Applicant shall implement these measures in alignment with SJVAPCD-recommended best management practices for agricultural operations, with compliance documentation maintained.

Mitigation Measure AIR-6 (Agricultural Best Management Practices). To reduce overall emissions from silage and feed activities, the Applicant shall adhere to SJVAPCD-recommended best management practices, including proper storage and handling protocols. This shall encompass strategies to mitigate odors, VOCs, and particulate matter, with a focus on the proximity of storage areas to sensitive receptors. The Applicant shall prepare a plan outlining these practices, subject to periodic review by the San Joaquin Valley Air Pollution Control District.

Mitigation Measure AIR-7 (Enhanced Waste Management for Additional Improvements). To address emissions from expanded dairy operations or waste management systems, the Applicant shall treat wastewater through vermifiltration-based BIDA beds to reduce VOC and ammonia emissions compared to traditional systems. Regular maintenance of these beds shall be conducted to prevent stagnation and odor release, with a documented schedule ensuring ongoing compliance.

Mitigation Measure AIR-8 (Emission Control Technologies). To capture odorous compounds and ammonia from animal housing or waste management systems, the Applicant shall incorporate technologies such as biofilters or scrubbers where applicable. These controls shall be integrated into project improvements, aligning with SJVAPCD guidelines, and the Applicant shall maintain records of installation and operation for regulatory verification.

Mitigation Measure AIR-9 (Operational Controls for Vehicles and Equipment). To minimize emissions from expanded operational activities, the Applicant shall limit idling times for vehicles and equipment, utilize low-emission machinery where feasible, and implement dust suppression measures in expanded areas. These controls shall be part of a broader

operational plan, with adherence documented and available for review by the San Joaquin Valley Air Pollution Control District to ensure air quality impacts remain less than significant.

IV. BIOLOGICAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish & 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 US 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 director 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?	☐	☐	☐	☑

Discussion for this section originates from Live Oak Associates, Inc.'s (LOA) Biological Evaluation prepared for this Project to identify sensitive biological resources, provide Project impact analysis, and recommend mitigation measures. The Biological Evaluation provides information about the biological resources within the Project area. Appendix B contains the Biological Report.

Environmental Setting

The Project Site is in the San Joaquin Valley in Kings County, east of Hanford in unincorporated Kings County. It is on the southwest corner of Houston Avenue and 7th Avenue. The Project Site is approximately 0.75 miles east of SR 43 and 2.25 miles south of SR 198. The Site is in the Remnoy U.S. Geological Survey (USGS) 7.5-minute quadrangle; Section 9, Township 19 South, Range 22 East (Mt. Diablo Base and Meridian).

Land use in the area is agricultural. The Project Site contains an operational dairy and associated equipment. The project site consists entirely of ruderal (i.e. disturbed) land. Immediately surrounding lands consist of the existing dairy and agricultural land in every direction. The area's topography is flat, approximately 236 feet above mean sea level.

Aquatic features in the near vicinity of the site include two dairy wastewater retention ponds, one of which is proposed for the construction of two earthen berms within it, an irrigation ditch approximately 0.3 miles west of the project site, a seasonal basin approximately 0.4 miles northwest of the project site, and a percolation basin approximately 0.2 miles southeast of the project site. Guernsey Slough and Cross Creek are located approximately 1.7 miles southeast of the project site and 1.7 miles east of the project site respectively.

Soils of the project site have been substantially altered through ground disturbance during initial dairy and agricultural development, and dairy and agricultural operations. As a result, the soils of the site no longer maintain their native soil characteristics and would, therefore, have no particular significance to biological resources of the site.

Natural biotic habitats are absent from the project site due to years of agricultural uses and activities associated with dairy operations. The land use of the project site can best be characterized as ruderal.

Ruderal lands on the site have experienced disturbance from activities associated with historic farming and ongoing dairy use of the site. At the time of LOA's field survey, vegetation was restricted to the berms of the wastewater pond, a cultivated wheat field, and the edges of the cultivated wheat field. Vegetation consisted primarily of weedy forbs including Palmer amaranth (Amaranthus palmeri), flax leaf horseweed (Erigeron bonariensis), London rocket (Sisymbrium irio), annual yellow sweet clover (Melilotus indicus), and cheeseweed (Malva parviflora).

The site offers little habitat value for many wildlife species. Despite the site's proximity to an irrigation ditch, a seasonal basin, and a percolation basin, amphibians and aquatic reptiles like turtles are expected to be absent from the site due to the lack of suitable aquatic breeding habitat on the site and unsuitable aestivation habitat within the site.

Though amphibians and aquatic reptiles are expected to be absent, some common terrestrial reptile, bird, and mammal species are expected to use the site. Reptile species that may forage on the site include the side-blotched lizard (Uta stansburiana) (observed) and snakes such as the gopher snake (Pituophis melanoleucus) and common kingsnake (Lampropeltis getulus), though these species' numbers would be expected to be quite low, if present at all.

Resident bird species expected to use this habitat would include red-winged blackbirds (Agelaius phoeniceus), Brewer's blackbirds (Euphagus cyanocephalus), mourning doves (Zenaida macroura), and killdeer (Charadrius vociferus), among others. Wintering birds that may utilize the site include the savannah sparrow (Passerella sandwichensis), American pipit (Anthus rubescens), white-crowned sparrow (Zonotrichia leucophrys) and Say's phoebe (Sayornis saya), among others. Summer migrants such as the barn swallow (Hirundo rustica) would be expected to forage over the site as well.

Several California ground squirrel (Otospermophilus beecheyi) burrows were observed along the north edge of the proposed stacking bed location. Burrows were also observed within the vicinity of the project site along the edges of the wheat field and in scattered locations within the dairy but outside the scope of the project site. Other rodents that may occur on the site in limited numbers include Botta's pocket gopher (Thomomys bottae), deer mouse (Peromyscus maniculatus), California vole (Microtus californicus), house mouse (Mus musculus), and Norway rat (Rattus norvegicus).

The site offers some foraging opportunities for mammalian and avian predators. Raptors such as red-tailed hawks (Buteo jamaicensis), American kestrel (Falco sparverius), and barn owls (Tyto alba) may occasionally forage over the site. Various species of bat may forage over the site for flying insects and disturbance-tolerant mammalian predators such as raccoons (Procyon lotor), striped skunks (Mephitis mephitis), and coyotes (Canis latrans) may occasionally forage on or pass through the site as well.

Regulatory Setting

Federal Endangered Species Act (FESA): The Federal ESA protects plants and animals listed as endangered or threatened by USFWS and the National Marine Fisheries Service (NMFS). Section 9 of the ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs "removing, possessing, maliciously damaging, or destroying any listed plant on Federal land and removing, cutting,

digging up, damaging, or destroying any listed plant on non-Federal land in knowing violation of state law" (16 U.S. Code [USC] 1538). Under Section 7 of ESA, Federal agencies are required to consult with USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its Critical Habitat (see definition of Critical Habitat below). Through consultation and the issuance of a biological opinion (BO), the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity, provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for issuance of incidental take permits where no other Federal actions are necessary provided a habitat conservation plan (HCP) is developed.

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712): The Migratory Bird Treaty Act (MBTA) implements international treaties between the United States and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in §§ 3800, 3513, and 3503.5 of the California Fish and Game Code.

Birds of Prey (CA Fish and Game Code Section 3503.5): Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds of prey. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California, that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations. Section 3513 prohibits explicitly the take or possession of any migratory nongame bird as designated in the MBTA. Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Additionally, Subsection 3503.5 prohibits the take, possession, or destruction of any birds and their nests in the orders Strigiformes (owls) or Falconiformes (hawks and eagles). These provisions, along with the Federal MBTA, serve to protect nesting raptors.

Clean Water Act: Section 404 of the Clean Water Act of (1972) is to maintain, restore, and enhance the physical, chemical, and biological integrity of the nation's waters. Under Section 404 of the Clean Water Act, the US Army Corps of Engineers (USACE) regulates discharges of dredged and filled materials into "waters of the United States" (jurisdictional waters). Waters of the US, including navigable waters of the United States, interstate waters, tidally influenced waters, and all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries.

California Endangered Species Act (CESA): The California ESA (California Fish and Game Code §§ 2050- 2116) generally parallels the main provisions of ESA, but unlike its Federal counterpart, the California ESA applies the take prohibitions to species proposed for listing (called "candidates" by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." the California ESA allows for take incidental to otherwise lawful development Projects. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened, or candidate species or result in the destruction or adverse modification of essential habitat.

2035 Kings County General Plan: The 2035 General Plan *Resource Conservation Element* contains the following goals, objectives, and action plans relating to biological resources.

- **RC Goal D1: *Preserve land that contains important natural plant and animal habitats.***
  - RC OBJECTIVE D1.1: Require that development in or adjacent to important natural plant and animal habitats minimize the disruption of such habitats.
    - *RC Policy D1.1.2*: Evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C. If the results of the Project screening indicate the potential for important biological resources to exist on the Site a biological evaluation (consistent with Appendix C) shall be performed by a qualified biologist. If the evaluation indicates that the Project could have a significant adverse impact, mitigation shall be required or the Project will be redesigned to avoid such impacts. Mitigation shall be provided consistent with the California Environmental Quality Act (CEQA), and applicable state and federal guidelines as appropriate. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.
- **RC GOAL E1: *Balance the protection of the County's diverse plant and animal communities with the County's economic needs.***
  - RC OBJECTIVE E1.1: Require mitigation measures to protect important plant and wildlife habitats.
    - *RC Policy E1.1.1*: Complete the inquiry process outlined in Appendix C in the initial project review for development permits to determine whether the project is likely to have a significant adverse impact on any threatened or endangered species habitat locations, and to assure appropriate consideration of habitat preservation by development. Maintain current copies of California Department of Fish and Game and United States Fish and Wildlife Service maps showing locations of known threatened and endangered species habitat. If shown to be necessary, require the developer to consult with the California Department of Fish and Game, the United

States Fish and Wildlife Service, and the United States Army Corps of Engineers as to potential impacts, appropriate mitigation measures, and required permits.

- *RC Policy E1.1.2*: Require as a primary objective in the review of development projects the preservation of healthy native oaks and other healthy native trees.
- *RC Policy E1.1.3*: Maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

Discussion

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 & Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact with Mitigation Incorporated: The biological evaluation conducted for the Project Site, as detailed in the technical report prepared by Live Oak Associates, Inc. on May 24, 2024, indicates that the project has the potential to affect certain special-status species. However, with the implementation of appropriate avoidance and mitigation measures, impacts to these species are expected to be reduced to less than significant levels.

The Project Site, located within the existing Sozinho Dairy #5 Dairy property, consists of approximately 20 acres of ruderal (disturbed) land that has been heavily altered by decades of dairy operations and agricultural activities. A reconnaissance-level field survey conducted on May 17, 2024, identified no suitable habitat for special-status plant species and limited habitat value for special-status wildlife species. The following special-status species were evaluated for their potential to occur on or near the Project Site: Swainson's Hawk (Buteo swainsoni), Tricolored Blackbird (Agelaius tricolor), Loggerhead Shrike (Lanius ludovicianus), Burrowing Owl (Athene cunicularia), and San Joaquin Kit Fox (Vulpes macrotis mutica). The potential impacts to these species and proposed mitigation measures are discussed below.

Swainson's Hawk (California Threatened): A Swainson's Hawk was observed flying over the Project Site during the May 17, 2024, survey, indicating potential foraging activity. However, the Site lacks suitable nesting trees, and the disturbed ruderal lands and surrounding agricultural fields provide only marginal foraging habitat due to limited prey availability, such as California voles, small mammals, and insects. Mature trees suitable for nesting are present within 0.25 miles of the site, and 32 California Natural Diversity Database (CNDDB) nesting occurrences have been recorded within 10 miles. However, the high level of human and vehicular activity associated with dairy operations and the availability of more suitable foraging habitats in the surrounding region suggest that the loss of marginal foraging habitat on the Project site will not significantly impact the regional Swainson's Hawk population. Mitigation Measures BIO 1.1, 1.2, and 1.3 will be implemented to reduce impacts on Swainson's Hawks.

Tricolored Blackbird (California Threatened): The Project Site includes a wheat field that could potentially serve as nesting habitat for Tricolored Blackbirds, which are known to nest in agricultural fields due to the loss of wetland habitats in the Central Valley. Two CNDDB nesting occurrences from 2014 were documented 5.75 and 11.5 miles southwest of the site, and recent eBird sightings indicate the species' presence in the region. However, no nesting colonies were observed during the field survey, and the limited extent of suitable habitat on the site, combined with the availability of similar agricultural habitats in the surrounding area, suggests that the loss of potential foraging or nesting habitat will not substantially impact the regional population of Tricolored Blackbirds. Mitigation Measures BIO 3.1, 3.2, and 3.3 will be implemented to reduce impacts on Tricolored Blackbirds.

Loggerhead Shrike (California Species of Special Concern): The Loggerhead Shrike prefers open habitats with sparse shrubs and trees for perching and nesting, which are absent from the Project Site. While the species may occasionally forage or fly over the site, no suitable nesting habitat exists within 250 feet of the project site, and no CNDDB occurrences were documented within 10 miles. The impact on Loggerhead Shrike is therefore considered minimal, and no specific mitigation measures are warranted.

Burrowing Owl (California Species of Special Concern): Several California ground squirrel burrows, which could potentially serve as Burrowing Owl habitat, were observed along the north edge of the proposed stacking bed location and in adjacent areas. Although no Burrowing Owls or signs of their presence (pellets, feathers, or whitewash) were observed during the survey, nine CNDDB occurrences and five eBird sightings have been recorded within 10 miles, suggesting the species could potentially use the site for foraging, roosting, or nesting. The tall wheat field on the Site is unsuitable for foraging, but adjacent open areas with sparse vegetation provide potential habitat. Mitigation Measures BIO 2.1, 2.2, and 2.3 will be implemented to reduce impacts for Burrowing Owl.

San Joaquin Kit Fox (Federally Endangered, California Threatened): The Project Site represents extremely marginal habitat for the San Joaquin Kit Fox due to its disturbed landscape, lack of suitable denning sites, and poor foraging opportunities. Eighteen CNDDB occurrences have been recorded within 10 miles, with the most recent in 2006, approximately 5 miles northwest of the site. However, no evidence of kit fox denning was observed during the survey, and the site is situated within agricultural lands identified as low suitability for the species. The likelihood of San Joaquin Kit Fox occurring on the site is extremely low, and any individuals would likely only pass through during rare dispersal movements. No significant impacts to this species are anticipated, and no specific mitigation measures are warranted.

Special Status Plants: The Project Site, characterized by ruderal and developed land, has been heavily disturbed by decades of dairy and agricultural activities, rendering it unsuitable for special-status plant species. A review of the CNDDB and the California Native Plant Society's Online Inventory of Rare and Endangered Vascular Plants identified no occurrences of special-status plants on or near the Site. No special-status plant species were observed during the field

survey, and the potential for such species to occur is considered negligible. Therefore, no impacts to special-status plants are expected, and no mitigation measures are warranted.

The Sozinho Dairy #5 Project has the potential to affect special-status wildlife species, including Swainson's Hawk, Tricolored Blackbird, and Burrowing Owl, due to the presence of marginal foraging habitat and potential nesting or roosting sites. However, the Site's disturbed nature and the availability of similar or more suitable habitats in the surrounding agricultural landscape minimize the significance of these impacts. The implementation of the above mitigation measures will ensure that potential impacts to these species are avoided or minimized to less than significant levels. No impacts to special-status plants or San Joaquin Kit Fox are anticipated. Therefore, with mitigation incorporated, the Project's impacts on special-status species are considered *less than significant.*

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 US Fish and Wildlife Service?

No Impact: The Sozinho Dairy #5 Project is located in an agricultural and developed area that has been extensively modified by ongoing dairy and agricultural operations. The Project Site does not contain any riparian habitats or other sensitive natural communities. The biological survey conducted for the Project did not identify the presence of any riparian habitats or sensitive natural communities on or adjacent to the Site.

The surrounding landscape is dominated by agricultural land, with no natural watercourses or riparian vegetation present within the Project area. Additionally, the Project Site consists primarily of ruderal land that has been disturbed by past and ongoing agricultural activities, which further reduces the potential for the presence of sensitive natural communities.

Given the absence of riparian habitat or other sensitive natural communities on the Project Site, the proposed Project will not have any adverse effects on such habitats. There is *no impact.*

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 director removal, filling, hydrological interruption, or other means?

No Impact: The Sozinho Dairy #5 Project Site does not contain any state or federally protected wetlands, such as marshes, vernal pools, or coastal wetlands. The Project Site has been heavily modified by agricultural and dairy operations, resulting in the absence of natural wetland features. The biological survey conducted for the Project confirmed that no jurisdictional wetlands or non-wetland waters are present on the Site.

The nearest aquatic features to the Project Site, such as the wastewater retention ponds and irrigation ditches, are man-made and do not qualify as protected wetlands under state or Federal regulations. These features are specifically designed and managed for agricultural purposes and are not considered sensitive natural communities.

Since the Project Site does not support any protected wetlands, the proposed Project will not result in the direct removal, filling, hydrological interruption, or any other impact on state or federally protected wetlands. There is *no impact.*

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?

Less than Significant Impact: The Sozinho Dairy #5 Project Site is located within an agricultural and developed landscape that has been heavily modified by ongoing farming and dairy operations. The Project Site is primarily composed of ruderal land with limited natural habitat value, and it does not contain any significant natural features, such as rivers, streams, or continuous corridors of native vegetation, that would support the movement of native resident or migratory wildlife species.

The Site is not part of any established wildlife corridor or migratory pathway, and the surrounding land is similarly developed for agriculture, further reducing its potential importance as a movement corridor for wildlife. The Project Site does not contain any aquatic features that would support native resident or migratory fish species, nor does it provide suitable habitat for native wildlife nurseries.

Although some common terrestrial species, such as birds, small mammals, and possibly reptiles, may occasionally use the Site, the disturbed nature of the landscape and the lack of significant habitat features mean that the Project will not substantially interfere with wildlife movement or the use of the Site as a nursery. The Project's construction and operational activities are not expected to create barriers or significant disruptions to wildlife movement.

Given these factors, the impact of the Project on the movement of native resident or migratory wildlife species, wildlife corridors, or native wildlife nursery Sites is considered *less than significant*.

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

No Impact: The Project would not conflict with any tree preservation policy or ordinance, preservation policy, or local ordinance which protects native trees. Therefore, no impact would occur. There is *no impact.*

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or another approved local, regional, or state habitat conservation plan?

No Impact: Species or habitats covered within any Habitat Conservation Plan, Critical Habitat Designations, or other approved conservation plans have not been identified within the Project Area. As such, the proposed Project would not be located within an area affected by or subject to a local, regional, or state habitat conservation plan. Therefore, no impact would occur. There is *no impact.*

Mitigation Measures:

Mitigation Measure BIO-1.1 (Temporal Avoidance). In order to avoid any potential impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside of this species' nesting season, typically defined as March 1-September 15.

Mitigation Measure BIO-1.2 (Preconstruction Surveys). If construction activities must occur between March 1 and September 15, then within 10 days prior to the start of construction, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ¼ mile of the work area. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure BIO-1.3 (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

Mitigation Measure BIO-2.1 (Take Avoidance Survey). A take avoidance survey for burrowing owls shall be conducted by a qualified biologist no less than 14 days prior to the start of construction. This take avoidance survey shall be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area shall include all potential roosting and nesting habitat on and within 200 meters of project impact areas, where accessible.

Mitigation Measure BIO-2.2 (Avoidance of Active Nests). If pre-construction surveys are undertaken during the breeding season (February 1 through August 31) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet shall be established around all active owl nests. The buffer areas shall be enclosed with temporary fencing or flagging, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season. After the

breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.

Mitigation Measure BIO-2.3 (Passive Relocation of Resident Owls). During the nonbreeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the impact area during the nonbreeding season, a 50-meter disturbance-free buffer shall be established around these burrows. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.

Mitigation Measure BIO-3.1 (Avoidance). In order to avoid impacts to native nesting birds, including the tricolored blackbird, the project will be constructed, if feasible, outside the nesting season, or between September 1st and January 31st.

Mitigation Measure BIO-3.2 (Preconstruction Surveys). If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and native bird nests within 15 days prior to the start of these activities. The survey will include the proposed work area(s) for that particular phase of work and surrounding lands within 250 feet, where accessible, for all nesting birds. If no active nests are found within the survey area, no further mitigation is required.

Mitigation Measure BIO-3.3 (Establish Buffers). Should any active nests be discovered in or near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Implementing Mitigation Measures BIO-1, BIO-2, and BIO-3 will ensure that impacts on species identified as a candidate, sensitive, or special status will be reduced to a less than significant impact with mitigation.

V. CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☑	☐	☐

Environmental Setting

Records Search: The Southern San Joaquin Valley Information Center (SSJVIC) conducted a Cultural Resources Records Search on April 22nd, 2024. SSJVIC staff researched historical USGS topographic maps, reports of previous cultural resource investigations, archaeological Site, and survey base maps, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The full report can be found in Appendix C.

The records search results indicate no cultural resource studies were previously completed within the project area or within a 0.5-mile radius. As such, there have been no cultural resources recorded within the Project boundary or within a 0.5-mile search radius. According to the information within CHRIS' database, there are no known/recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

Native American Outreach: A request to the Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) was sent in April 2024 to identify any know sacred lands or traditional use areas within or near the Project site. The results were negative, indicating no sacred lands have been recorded on or in the vicinity of the facility. A Cultural Resources Evaluation conducted through the California Historic Resources Information System confirmed that no previous cultural resource studies or recorded sites are present within the Project area or immediate surroundings.

Regulatory Setting

This report defines "cultural resources" as prehistoric or historical archaeological sites and historical objects, buildings, or structures. Following 36 Code of Federal Regulations (CFR) §60.4, "historical" in this report applies to cultural resources at least 50 years old. The significance or importance of a cultural resource is dependent upon whether the resource qualifies for inclusion at the local level in a local register of historical resources, at the state level in the California Register of Historical Resources (CRHR), or the Federal level in the National Register of Historic Places (NRHP). Cultural resources that are determined to be eligible for inclusion in the CRHR are called "historical resources" (California Code of Regulations [CCR] 15064.5[a]). Under this statute, the determination of eligibility is partially based on the consideration of the criteria of significance as defined in 14 CCR 15064.5(a)(3). Cultural resources eligible for the NRHP are deemed "historic properties."

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historical and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

California Environmental Quality Act: Under CEQA, a historical resource is a resource listed in, or determined to be eligible for listing in, the CRHR. Historical resources may include, but are not limited to, "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically or archaeologically significant" (PRC §5020.1[j]). In addition, a resource included in a local register of historical resources or identified as significant in a local survey conducted per the state guidelines is also considered a historic resource under California Public Resources Code (PRC) Section 5020.1.

CEQA details appropriate measures for the evaluation and protection of cultural resources in §15064.5 of the CEQA Guidelines. According to CEQA guidelines §15064.5 (a)(3), the criteria for listing on the CRHR includes the following:

A. *Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.*
B. *Is associated with the lives of persons important in our past.*
C. *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.*
D. *Has yielded, or may be likely to yield, information important in prehistory or history.*

According to CEQA guidelines §21074:
(a) "Tribal cultural resources" are either of the following:

(1) 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.

(b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Protection of cultural resources within California is additionally regulated by PRC §5097.5, which prohibits the destruction, defacing, or removal of any historic or prehistoric cultural features on land under the jurisdiction of State or local authorities.

Health and Safety Code, Section 7050.5: Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped in the vicinity of discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the NAHC. CEQA Guidelines (Public Resources Code Section 5097) specify the procedures to be followed when discovering human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

2035 Kings County General Plan:
Kings County identified sixteen Historical Sites throughout the county. The nearest Historic Site to the Project is Calvary Cemetery, approximately 2.85 miles to the northwest. The *2035 Kings County General Plan Resource Conservation Element* includes the following goals, objectives, and policies that are potentially applicable to the proposed Project:

- **RC GOAL I1:** ***Preserve significant historical and archaeological sites and structures that represent the ethnic, cultural, and economic groups that have lived and worked in Kings County.***
  - RC OBJECTIVE I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.

- *RC Policy I1.1.2*: Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
- *RC Policy I1.1.3*: Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
- *RC Policy I1.1.4*: Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

➢ RC OBJECTIVE I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.

- *RC Policy I1.2.1*: Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance to Public Resources Code 5097.9 and 5097.993.
- *RC Policy I1.2.2*: Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
- *RC Policy I1.2.3*: Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
- *RC Policy I1.2.4*: The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
- *RC Policy I1.2.5*: The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
- *RC Policy I1.2.1.6*: The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe"), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

Discussion

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 Incorporation: The SSJVIC conducted a records search on behalf of the Applicant on April 22nd, 2024, to determine if historical or archaeological sites had previously been recorded within the study area. This was to check if archaeologists had systematically surveyed the Project area before the initial study or whether the region of the field Project was known to contain archaeological sites and to be thereby archaeologically sensitive.

The records search results indicate no cultural resources were previously recorded within the Project boundary or within a 0.5-mile search radius. According to the information within the CHRIS' database, there are no recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

The Project's construction will include a limited amount of ground disturbance. Although no cultural resources have been identified, the presence of remains or unanticipated cultural resources under the ground surface is possible. Implementation of Mitigation Measures CUL-1, CUL-2, and CUL-3 will ensure that impacts on this checklist item will be *less than significant with mitigation incorporation.*

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

Less Than Significant Impact with Mitigation Incorporation: No known archaeological resources are located within the Project area. Implementing Mitigation Measures CUL-1, CUL-2, and CUL-3 will ensure that the potential impact on unknown archeological resources will be *less than significant with mitigation incorporation.*

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

Less Than Significant Impact with Mitigation Incorporation: No known human remains are buried in the Project vicinity. If human remains are unearthed during Project construction, there is a potential for a significant impact. As such, implementation of Mitigation Measure CUL-3 will ensure that impacts remain *less than significant with mitigation incorporation.*

Mitigation Measures for Impacts on Cultural Resources

Mitigation Measure CUL-1: Pre-Construction Cultural Survey Requirement. Prior to any construction activities, a qualified professional consultant must conduct a field survey of the project site to determine if any cultural resources are present. The results of this survey must be submitted to the Kings County Community Development Agency for review. If any cultural resources are identified, further consultation with the appropriate authorities, including the Native American Heritage Commission, may be necessary to ensure proper management and preservation of these resources. No ground-disturbing activities shall commence until the survey has been completed and the results have been reviewed by the County.

Mitigation Measure CUL-2: Protection of Cultural Resources. In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Cultural Resources Alert on Project Plans: The project proponent shall note on any plans that require ground disturbing activities that there is a potential for exposing buried cultural resources.
- Pre-Construction Briefing: The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and, on the procedures, to be enacted if resources are found.
- Stop Work Near any Discovered Cultural Resources: The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA.
- Mitigation for Discovered Cultural Resources: If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than- significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and

Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken.

- Native American Monitoring: Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities. Tribal participation would be dependent upon the availability and interest of the Tribe.
- Disposition of Cultural Resources: Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.

Mitigation Measure CUL-3: Protection of Buried Human Remains. In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project:

- Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery and the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(b) which states that "…. the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance."
- Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.

VI. ENERGY

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

Environmental Setting

Southern California Edison (SCE) provides electricity services to the region. SCE serves approximately 15 million people throughout a 50,000-square-mile service area in southern and central California. SCE supplies electricity to its customers through various renewable and nonrenewable sources. Table 3-5 below shows the proportion of each energy resource sold to California consumers by SCE in 2022 compared to the statewide average.

Fuel Type		SCE Power Mix	California Power Mix
Coal		0%	2.1%
Large Hydroelectric		3.4%	9.2%
Natural Gas		24.7%	36.4%
Nuclear		8.3%	9.2%
Other (Oil/Petroleum Coke/Waste Heat)		0.1%	0.1%
Unspecified Sources of Power[1]		30.3%	7.1%
Eligible Renewables	*Biomass*	0.1%	2.1%
	Geothermal	5.7%	4.7%
	Small Hydro	0.5%	1.1%
	Solar	17.0%	17.0%
	Wind	9.8%	10.8%
	Total Eligible Renewable	**33.2%**	**35.8%**

1. "Unspecified sources of power" means electricity from transactions that are not traceable to specific generation sources.

Table 3-5. 2022 SCE and State average power resources; Source: SCE and California Energy Commission

SCE also offers Green Rate options, which allow consumers to indirectly purchase 50% to 100% of their energy from renewable sources without installing private rooftop solar panels. To accomplish this, SCE buys the renewable energy necessary to meet the needs of participants.

Southern California Gas (SoCalGas) provides natural gas services to the Project area. Natural gas is an energy source developed from fossil fuels composed primarily of methane (CH4). According to the U.S. Energy Information Administration (EIA), approximately 30% of the natural gas burned in California is used for electricity generation. In addition, the residential sector consumes 21%, the industrial sector consumes 33%, and the commercial sector consumes 11%. Approximately 64,031,169 therms of natural gas are consumed annually within Kings County.

Regulatory Setting

California Code of Regulations, Title 20: Title 20 of the California Code of Regulations establishes standards and requirements for appliance energy efficiency. The standards apply to a broad range of appliances sold in California.

California Code of Regulations, Title 24: Title 24 of the California Code of Regulations is a broad set of standards designed to address the energy efficiency of new and altered homes and commercial buildings. These standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

California Green Building Standards Code (CALGreen): The purpose of the CALGreen Code is to "improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a positive environmental impact and encouraging sustainable construction practices in the following categories: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental air quality." The CALGreen Code is not intended to substitute or be identified as meeting the certification requirements of any green building program not established and adopted by the California Building Standards Commission (CBSC).

SB 100: SB 100, passed in 2018, set a deadline in 2045 for 100% of energy to be renewable. Additionally, by 2030, 60% of all energy must be renewable. California is targeting this goal through solar and other renewable sources.

AB 178: For California to meet its renewable goals, AB 178 was passed in 2018. AB 178 states that starting in 2020, all new low-rise residential buildings must be built with solar power.

Executive Order B-55-18: In 2018, Governor Brown signed EO B-55-18 to achieve carbon neutrality by moving California to 100 percent clean energy by 2045. This Executive Order also includes specific measures to reduce GHG emissions via clean transportation, energy-efficient

buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forest land.

2035 Kings County General Plan: The *Resource Conservation Element* of the Kings County General Plan contains the following goals, objectives, and policies related to energy conservation:

- **RC GOAL G1: Encourage the development of oil and gas energy sources provided that they do not degrade environmental quality.**
  - RC OBJECTIVE G1.3: Conserve energy to lower energy costs and improve air quality.
    - *RC Policy G1.3.1*: Encourage developers to be innovative in providing landscaping that modifies microclimates, thus reducing energy consumption.
    - *RC Policy G1.3.2*: Require new urban development to provide and maintain shade trees and other landscaping along streets and within parking areas to reduce radiation heating. However, solar access for solar panels shall not be blocked.
    - *RC Policy G1.3.3*: Participate, to the extent feasible, in local and State programs that strive to reduce the consumption of energy.
    - *RC Policy G1.3.4*: Coordinate with local utility providers to provide public education on energy conservation programs.

The *Air Quality Element* of the Kings County General Plan contains the following goals, objectives, and policies related to energy conservation:

- **AQ GOAL D1: Invest in more efficient and effective transportation infrastructure, fleet management and support for trip reduction programs to reduce traffic congestion, vehicle trips and the need for costly new or expanded roadways.**

- **AQ GOAL E1: Minimize air emissions and potential climate change impacts related to energy consumption in the County.**

  - AQ OBJECTIVE E1.1 Increase the use of energy conservation features, renewable sources of energy and low-emission equipment in new and existing development Projects within the County.
    - *AQ Policy E1.1.1*: Initiate and sustain ongoing efforts with local water and energy utilities and developers to establish and implement voluntary incentive-based programs to encourage the use of energy efficient designs and equipment in new and existing development projects within the County.
    - *AQ Policy E1.1.2*: Initiate and sustain ongoing efforts with agriculture, the building industry, water, and energy utilities and the SJVAPCD to promote enhanced energy conservation and sustainable building standards for new construction.
    - *AQ Policy E1.1.3*: Work with local water and energy utilities and the building industry to develop or revise County design standards relating to solar

orientation of building occupancies, water use, landscaping, reduction in impervious surfaces, parking lot shading and such other measures oriented towards reducing energy demand.

- *AQ Policy E1.1.4*: Actively promote the more efficient location of industries within the County which are labor intensive, utilize cogeneration or renewable sources of energy, support and enhance agricultural activities, and are consistent with other policies of the General Plan.
- *AQ Policy E1.1.5*: County staff will proactively work with the Cooperative Agricultural Extension office, California Energy Commission, local water and energy utilities, the agricultural industry, and other potential partners to seek funding sources and implement programs which reduce water and energy use, reduce air emissions, and reduce the creation of greenhouse gases.

Discussion

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Potentially Significant Impact: The Sozinho Dairy #5 Project will require energy consumption during both the construction and operational phases, potentially leading to environmental impacts if energy use is not efficiently managed.

During construction, energy use will primarily involve fuel consumption by construction vehicles and equipment as well as electricity consumption for site preparation and equipment operation. While construction activities will be temporary, there is the potential of inefficient energy use if not managed according to best management practices.

In the operational phase, energy will be required for the continuous operation of wastewater treatment infrastructure, particularly the BIDA beds and mechanical separators. The BIDA beds, which operate 24 hours a day to treat process water through vermifiltration, may lead to increased energy demands due to their round-the-clock operation. Additionally, energy will be consumed by equipment related to feed storage, calf hutch maintenance, and general dairy management operations.

While some energy-saving measures are built into the Project design, such as integrated stormwater and wastewater systems that minimize the need for additional treatment processes, the continuous operation of energy-intensive systems like the BIDA beds may still pose risks of excessive energy consumption. The BIDA system's energy efficiency will depend on how effectively the facility monitors and optimizes its operations to reduce energy use during peak load times and maintain efficient equipment performance.

Additionally, the facility has upgrades to improve other aspects of the dairy, such as freestall barns, shade structures, and expanded feed storage areas. These will also contribute to incremental increases in operational energy consumption.

Given the continuous nature of operational energy demands, further analysis is warranted. A detailed energy use assessment will be conducted to evaluate whether the Project's energy consumption during both construction and operation aligns with state energy efficiency standards and best management practices. This analysis should also determine whether additional mitigation measures are necessary.

Until such an assessment is completed, the Project could result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Therefore, further evaluation and potentially additional mitigation are recommended to ensure compliance with California Energy Code requirements and to minimize potential energy-related environmental impacts. There is a *potentially significant impact.*

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

No Impact: The Sozinho Dairy #5 Project will comply with all applicable state and local plans related to renewable energy and energy efficiency. The Project is designed to align with California's goals for energy conservation and efficiency, including adherence to the California Green Building Standards Code (CALGreen) and Title 24, which mandate energy-efficient construction practices.

The Project will not obstruct any state or local plans for renewable energy or energy efficiency, as it is consistent with policies that promote energy conservation and the use of renewable energy sources. Therefore, the impact is considered *No Impact.*

VII. GEOLOGY AND SOILS

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

Environmental Setting

A Geotechnical Engineering Report was prepared by BSK Engineering (Appendix G). The general conclusion of the study is:

Based upon the data collected during this investigation and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed improvements, provided the recommendations presented in this report are incorporated into the project design and construction. The planned improvements may be supported on shallow isolated/continuous reinforced concrete spread footings, thickened mat foundations, and/or pole footings provided the structural engineer evaluate if the structure can tolerate the estimated settlement.

Geologic Stability and Seismic Activity

- **Seismicity:** According to the *Health and Safety Element of 2035 Kings County General Plan*, Kings County has no known major fault systems within its boundaries. The most significant potential for seismic activity is posed by the San Andreas Fault, which is located approximately four miles west of the Kings County boundary line with Monterey County. The San Andreas Fault divides the Pacific and North American Tectonic Plates, and its closest location relative to the Project area is approximately 70 miles southwest in the Coast Range mountains. Another large fault that may be a potential hazard is the White Wolf fault, which is south of Kings County near Arvin and Bakersfield, approximately 100 miles southeast of the Project area. Additionally, there are faults to the east, mainly on the east side of the Sierra Nevada Mountain Range. According to the *1974 Five County Seismic Safety Element (FCSSE) (Tulare County Association of Governments, 1974),* Kings County is divided into two seismic zone groups based on ground shaking characteristics: Valley Zones (V1-V4) and Coast Ranges Zones (C1 and C2). The Project area is in the "V-1" (Valley-1) zone. The FCSSE identifies the V-1 Zone as having a low risk of seismic activity, as the distance from either fault line is large enough that the effect of seismic activities is minimal. According to the FCSSE, areas in northern Kings County are most likely to be affected by the San Andreas Fault, which lies in the Coast Range mountains about 70 miles southwest of the Project area, the White Wolf Fault, approximately 100 miles southeast of the Project area, and minor faults in the southwestern portion of Kings County along the Kettleman Hills, which is roughly 30 miles southwest of the Project area. The distance from these faults to the Project area is sufficient to protect the area from the most severe forms of damage resulting from ground shaking. The probability of exceeding peak ground acceleration (% g) in the next 50 years has a 20-30% chance in the Project area and its immediate surroundings.

  According to the Geotechnical Report (Appendix G), the Site can be classified as Site Class D (stiff soil profile). Use of the 2019 and 2022 California Building Code (CBC)

seismic design criteria is considered appropriate and the following parameters are considered applicable for the structural design of foundations.

- **Liquefaction**: Liquefaction is a phenomenon whereby unconsolidated or near-saturated soils lose cohesion and are converted to a fluid state due to severe vibratory motion. The relatively rapid loss of soil shear strength during strong earthquake shaking results in temporary, fluid-like soil behavior, resulting in landslides, lateral spreading, and structural collapse. The Kings County General Plan *Health and Safety Element* states that the San Joaquin Valley soils have liquefaction potential. Still, the risk and danger associated with liquefaction are considered to be minimal. However, the risk and danger associated with liquefaction are considered to be minimal in seismic zone V1, where the Project Site is located east of Hanford. Risks and dangers associated with liquefaction are proportional to ground shaking intensity, and seismic activity in this area is assessed to pose a low threat, so the potential damage from liquefaction would be minimal.

- **Landslides**: Landslides refer to a wide variety of processes that result in the downward and outward movement of soil, rock, and vegetation under the gravitational influence. Landslides are caused by natural and human-induced slope stability changes and often accompany other natural hazard events, such as floods, wildfires, or earthquakes. Landslide risk is also influenced by precipitation, topography, and geology. The southwestern corner of the County along the Coast Ranges has a moderate to high landslide incident probability due to steep slopes but is designated for Agricultural, and Natural Resource Conservation land uses and is mainly uninhabited and remote. Most of the County, including the proposed Project Site, is considered to have low or no potential for landslide incidence, and any moderate to high areas are located in remote uninhabited sections in the southwestern part of the County.

- **Subsidence**: Land Subsidence refers to the vertical sinking of land due to either manmade or natural underground voids. Subsidence has occurred throughout the San Joaquin Valley due to groundwater, oil, and gas withdrawal. According to the Kings County Seismic Zone Description with data derived from the FCSSE, the proposed Project Site does not have the potential for subsidence, and any areas within the County with the potential for subsidence have minimal risks and dangers associated with this occurrence.

Soils Involved in the Project: The proposed Project Site contains two soil types. The properties of the soil are described briefly below. Information is from the Geotechnical Engineering Report located in Appendix G.

- **Kimberlina Fine Sandy Loam:** The Kimberlina series comprises very deep, well-drained soils located on flood plains and recent alluvial fans in the southern San Joaquin Valley

and parts of the Mojave Desert, California, with slopes ranging from 0 to 9 percent. Formed in mixed alluvium primarily from igneous and sedimentary rock sources, these soils are classified as Coarse-loamy, mixed, superactive, calcareous, thermic Typic Torriorthents. They feature a fine sandy loam to loam texture in the A and C horizons, with a calcium carbonate equivalent of 0 to 5 percent and neutral to moderately alkaline reaction. The soils are typically dry from April to mid-January, with a mean annual precipitation of 4 to 8 inches and a mean annual temperature of 59 to 65 degrees Fahrenheit. Used primarily for irrigated agriculture, including field, forage, and row crops, and occasionally for livestock grazing, the Kimberlina series is extensive in MLRA 17 and 30, characterized by moderately rapid to moderate permeability and negligible to medium runoff.
Source: USDA, Kimberlina Series.

- **Wasco Sandy Loam, 0 to 5 percent slopes:** The Wasco series consists of very deep, well-drained soils found on recent alluvial fans and flood plains in the southern San Joaquin Valley and parts of the Mojave Desert, California, with slopes ranging from 0 to 5 percent. These soils, formed in mixed alluvium primarily from igneous and sedimentary rock sources, are classified as Coarse-loamy, mixed, superactive, nonacid, thermic Typic Torriorthents. They exhibit a sandy loam to fine sandy loam texture in the A and C horizons, with a reaction ranging from slightly acid to moderately alkaline and minimal carbonate presence, typically below 16 to 40 inches. The soils are dry from mid-April to mid-January, with a mean annual precipitation of 4 to 7 inches and a mean annual temperature of 59 to 65 degrees Fahrenheit. Primarily used for irrigated field, forage, and row crops, with some areas supporting livestock grazing, wildlife habitat, recreation, and homesites, the Wasco series is extensive in MLRA 17 and 30, featuring moderately rapid permeability and negligible to very low runoff.
  Source: USDA, Wasco Series

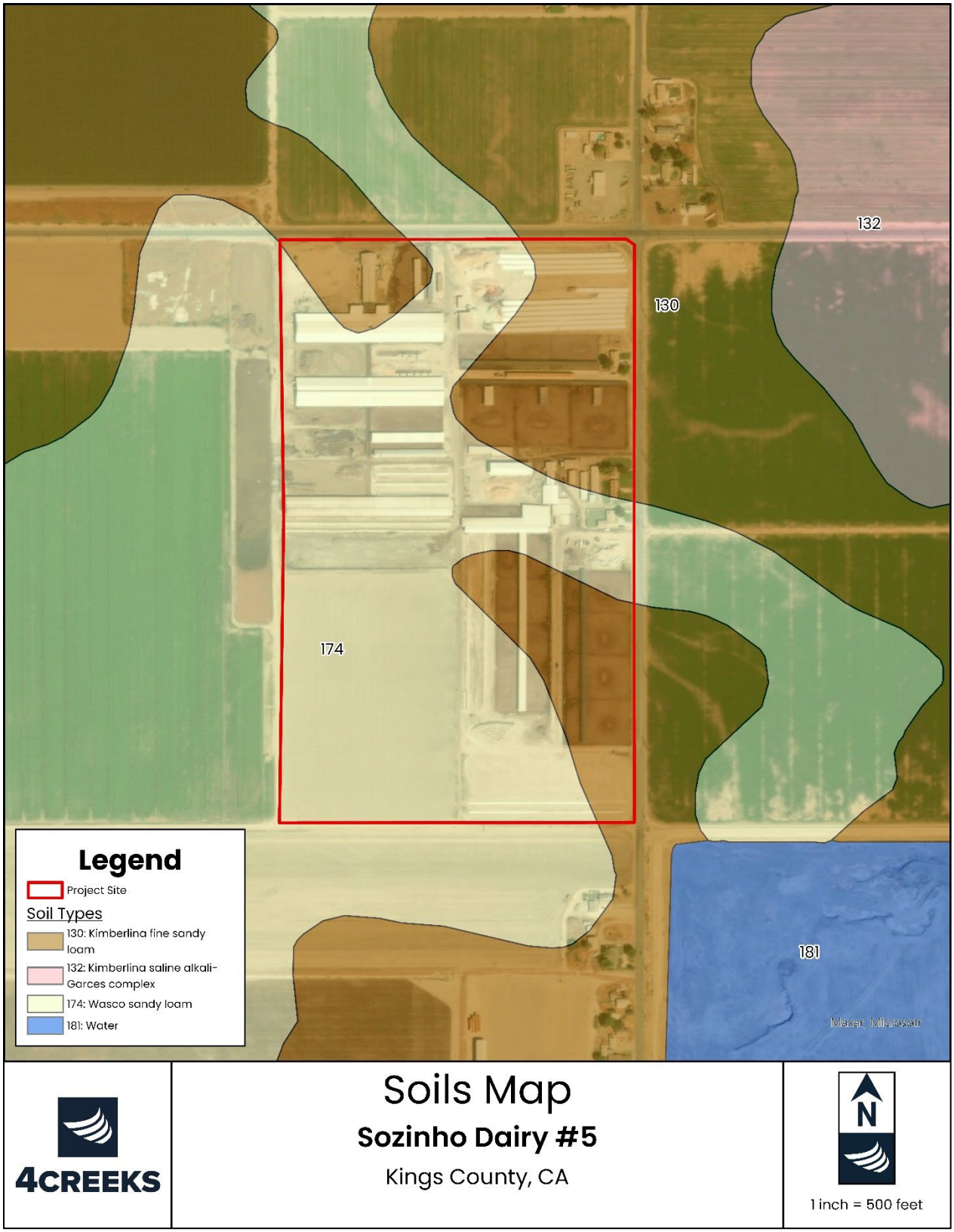


Figure 3-4: Soils Map. Source: Web Soil Survey, USDA Natural Resources Conservation Service

Regulatory Setting

California Building Code: The California Building Code (CBC) contains general building design and construction requirements for fire and life safety, structural safety, and access compliance. CBC provisions provide minimum standards to safeguard life or limb, health, property, and public welfare by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all buildings and structures and specific equipment.

2035 Kings County General Plan:
The *2035 General Plan Health and Safety Element* includes the following policies regarding soils and geology:

- *HS Policy A1.3.1*: Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the *Health and Safety Element* to improve long term loss prevention.
- *HS Policy A1.4.1*: Implement the current California Building Codes and any subsequent amendments as contained within California Code of Regulations Title 24 to improve disaster resistance of future buildings.
- *HS Policy A2.1.1*: Maintain and enforce current building codes and standards to reduce the potential for structural failure caused by ground shaking and other geologic hazards.
- *HS Policy A2.1.3*: Prohibit new construction along known fault zones, and limit uses to nonstructural land uses.
- *HS Policy A2.1.4*: Review all development proposals to determine whether geotechnical soils report is required for new construction.
- *HS Policy A2.1.5*: Consider the environmental review process for land use projects seismic hazards, including subsidence, liquefaction, flooding, local soils, and geologic conditions.

Discussion

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.

No Impact: The Sozinho Dairy #5 Project Site is not located within an Alquist-Priolo Earthquake Fault Zone, and there are no known active faults in the immediate vicinity of the Project Site. The closest major fault is the San Andreas Fault, located approximately 70 miles west of the Site. The geotechnical investigation report for the Site confirms that there are no active fault zones nearby, and the potential for fault rupture is negligible. Therefore, the Project is not expected to cause or be affected by the rupture of a known earthquake fault. Therefore, the impact is considered *No Impact.*

ii. Strong seismic ground shaking?

Less than Significant Impact: The Project Site is located in a seismically active region, with the San Andreas Fault approximately 70 miles away. The geotechnical report classifies the Site as Seismic Design Category D under the 2022 California Building Code (CBC), which is appropriate for areas with a potential for moderate to severe ground shaking. The Project will adhere to the seismic design criteria outlined in the CBC, including specific recommendations for foundations and structural design to withstand seismic events. As a result, the impact of strong seismic ground shaking is considered *Less Than Significant.*

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact: The geotechnical investigation at the Project Site indicates that the soils present are primarily silty sand and clayey sand, with no groundwater encountered at depths up to 21.5 feet below ground surface. The Site is not located in an area with a high risk of liquefaction, as the depth to groundwater is greater than 50 feet. Additionally, the Site's soil is generally stable, and the risk of seismic-related ground failure, including liquefaction, is minimal. Proper foundation design, will further reduce any potential risks. Therefore, the impact is considered *Less Than Significant.*

iv. Landslides?

No Impact: The Project Site is located on flat terrain, with no significant slopes or geological features that would contribute to landslide risk. The Site's topography and soil stability indicate that landslides are not a concern. Therefore, the impact is considered *No Impact.*

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

Less Than Significant Impact: The Project Site is relatively flat, which reduces the risk of soil erosion. However, construction activities could temporarily increase the potential for erosion due to soil disturbance. The geotechnical report provides specific recommendations for site preparation, grading, and drainage to control and minimize soil erosion during construction. These recommendations include the implementation of a Stormwater Pollution Prevention Plan (SWPPP) and best management practices (BMPs) to ensure proper soil management. With

these recommendations in place, any erosion-related impacts are expected to be temporary and minimized. Therefore, the impact is considered *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?

Less than Significant Impact: The geotechnical investigation for the Sozinho Dairy #5 Project Site determined that the soils present, including silty sand and clayey sand, are generally stable. No significant issues related to soil instability, such as liquefaction, lateral spreading, or subsidence, were identified at the Site. The depth to groundwater is greater than 50 feet, further reducing the potential for liquefaction. The Project will follow specific recommendations for foundation design and construction to mitigate any risks associated with soil instability. As a result, the potential for the Project to cause or be impacted by unstable soil conditions, including landslide, lateral spreading, subsidence, or collapse, is considered *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?

Less than Significant Impact: The geotechnical report for the Sozinho Dairy #5 Project Site indicates that the soils present are primarily sandy loams, which are not considered expansive. Expansive soils are typically clay-rich and prone to significant volume changes with moisture variations, which can cause structural damage. However, the soils at the Project Site do not exhibit these characteristics, and the risk associated with expansive soils is minimal. The Project will implement standard construction practices to ensure stability and minimize any potential risks. Therefore, the impact is considered *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?

No Impact: The Sozinho Dairy #5 Project is designed with an on-site wastewater treatment system (BIDA system) specifically engineered for dairy operations. The Project will not rely on septic tanks or alternative wastewater disposal systems. The BIDA system is designed to handle the wastewater generated by the dairy, and the geotechnical conditions of the Site, including soil composition and stability, are suitable for this type of system. Therefore, the Project will not result in any impacts related to soils being incapable of supporting septic tanks or alternative wastewater disposal systems. The impact is considered *No Impact.*

f) Would the Project directly or indirectly destroy a unique paleontological resource or Site or unique geologic feature?

Less Than Significant Impact with Mitigation Incorporation: The Project Site has been heavily disturbed by ongoing agricultural and dairy operations, and no unique paleontological resources or geologic features have been identified at the Site. However, there is always a possibility that undiscovered paleontological resources could be encountered during construction activities, particularly during ground-disturbing activities such as excavation.

To mitigate this potential impact, the Project will implement mitigation measures that include the requirement to halt work in the area if paleontological resources are discovered. A qualified paleontologist will be consulted to assess the find and recommend appropriate actions to preserve the resource. Implementing Mitigation Measures CUL-1, CUL-2. & CUL-3 will ensure that any impacts resulting from Project implementation remain *less significant with mitigation incorporation.*

VIII. GREENHOUSE GAS EMISSIONS

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

Environmental Setting

GHGs are present in the atmosphere naturally and are released by natural sources or formed from secondary reactions taking place in the atmosphere. The gases that are seen as the principal contributors to human-induced climate change are the following:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

A description of several different GHGs is shown below in Table 3-6.

Greenhouse Gas	Description and Physical Properties	Lifetime	GWP	Sources
Methane (CH4)	Is a flammable gas and is the main component of natural gas.	12 years	21	Emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal solid waste landfills.
Carbon dioxide (CO2)	An odorless, colorless, natural greenhouse gas.	30-95 years	1	Enters the atmosphere through burning fossil fuels (coal, natural gas, and oil), solid waste, trees, and wood products, and also as a result of certain chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.
Chloro-fluorocarbons	Gases formed synthetically by replacing all hydrogen atoms in methane or ethane with chlorine and/or fluorine atoms. They are non-toxic nonflammable, insoluble and chemically unreactive in the troposphere (the level of air at the earth's surface).	55-140 years	3,800 to 8,100	Were synthesized in 1928 for use as refrigerants, aerosol propellants, and cleaning solvents. They destroy stratospheric ozone.
Hydrofluorocarbons	A man-made greenhouse gasses. It was developed to replace ozone-depleting gases found in a variety of appliances. Composed of a group of greenhouse gases containing carbon, chlorine an at least one hydrogen atom.	14 years	140 to 11,700	Powerful greenhouse gases that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for stratospheric ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent greenhouse gases.
Nitrous oxide (N2O)	Commonly known as laughing gas, is a chemical compound with the formula N2O. It is an oxide of nitrogen. At room temperature, it is a colorless, non-flammable gas, with a slightly sweet odor and taste. It is used in surgery and dentistry for its anesthetic and analgesic effects.	120 years	310	Emitted during agricultural and industrial activities, as well as during combustion of fossil fuels and solid waste.
Pre-fluorocarbons	Has a stable molecular structure and only breaks down by ultraviolet rays about 60 kilometers above Earth's surface.	50,000 years	6,500 to 9,200	Two main sources of pre-fluorocarbons are primary aluminum production and semiconductor manufacturing.
Sulfur hexafluoride	An inorganic, odorless, colorless, and nontoxic nonflammable gas.	3,200 years	23,900	This gas is manmade and used for insulation in electric power transmission equipment, in the magnesium industry, in semiconductor manufacturing and as a tracer gas.

Table 3-6. Greenhouse Gasses; Source: EPA, Intergovernmental Panel on Climate Change

Over the last 200 years, human activities have released substantial quantities of GHGs into the atmosphere. These extra emissions increase GHG concentrations in the atmosphere and

enhance the natural greenhouse effect, which can cause global warming. Although GHGs produced by human activities include naturally occurring GHGs (e.g., CO_2, CH_4, and N_2O), some gases (e.g., HFCs, PFCs, and SF_6) are entirely new to the atmosphere. Water vapor is a GHG, but it is generally excluded from the list of GHGs because it is short-lived in the atmosphere. Natural processes largely determine their atmospheric concentrations (e.g., oceanic evaporation). For this air quality study, the term "GHGs" will refer collectively to the six gases identified in the bulleted list provided above.

Regulatory Setting

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions; however, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO_2 emissions under the CAA. The Supreme Court ruled that GHGs fit within the CAA's definition of a pollutant and that the USEPA did not have a valid rationale for not regulating GHGs. In December 2009, the USEPA issued an endangerment finding for GHGs under the CAA.

On December 7, 2009, the USEPA Administrator signed a final action under the CAA, finding that six GHGs (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) constitute a threat to public health and welfare and that the combined emissions from motor vehicles cause and contribute to global climate change.

On September 15, 2011, the USEPA and the United States Department of Transportation (USDOT) issued the final rule for the first national standards to improve the fuel efficiency of medium- and heavy-duty trucks and buses from 2014 to 2018. For combination tractors, the agencies proposed engine and vehicle standards that would achieve up to a 20 percent reduction in fuel consumption from the model year 2014 by the 2018 model year. For heavy-duty pickup trucks and vans, the agencies proposed separate gasoline and diesel truck standards, which would achieve up to a 10 percent reduction from the model year 2014 for gasoline vehicles and a 15 percent reduction for diesel vehicles (12 and 17 percent, respectively, if accounting for air conditioning leakage). Lastly, the engine and vehicle standards would achieve up to a 10 percent reduction from the model year 2014 fuel consumption for vocational vehicles. On October 25, 2016, the USEPA and USDOT issued Phase 2 of the national standards to improve fuel efficiency standards for medium- and heavy-duty trucks and buses for model years 2021 to 2027 to achieve vehicle fuel savings high as 25 percent, depending on the vehicle category.

The current administration finalized updated Corporate Average Fuel Economy (CAFE) standards for model years 2024 through 2026. The final rule establishes standards that would require an industrywide fleet average of approximately 49 miles per gallon (mpg) for passenger cars and light trucks in 2026 by increasing fuel efficiency by 8 percent annually for model years 2024 and 2025 and 10 percent annually for model years 2026. The agency projects that the final standards will save consumers nearly $1,400 in total fuel expenses over the

lifetimes of vehicles produced in these model years and avoid the consumption of about 234 billion gallons of gas between 2030 to 2050. The National Highway Traffic Safety Administration also projects that the standards will cut GHGs from the atmosphere, reduce air pollution, and reduce the country's dependence on oil.

State Agencies

California Air Resources Board (CARB): In 1967, the State Legislature passed the Mulford-Carrell Act, which combined two Department of Health bureaus (i.e., the Bureau of Air Sanitation and the Motor Vehicle Pollution Control Board) to establish CARB. Since its formation, CARB has worked with the public, the business sector, and local governments to find solutions to the State's air pollution problems. California adopted the CCAA in 1988. CARB administers the CAAQS for the ten air pollutants designated in the CCAA. These 10 State air pollutants are the six criteria designated by the Federal CAA and four others: visibility-reducing particulates, H_2S, sulfates, and vinyl chloride.

The California Global Warming Solutions Act of 2006, widely known as Assembly Bill (AB) 32, requires CARB to develop and enforce regulations for reporting and verifying statewide GHG emissions. CARB was directed to set a statewide GHG emissions limit and a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

In 2016, the Legislature passed, and Governor Jerry Brown signed, Senate Bill (SB) 32 and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 Executive Order (EO) B-30-15. SB 32 builds on AB 32 and keeps California on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million (ppm) CO_2e and reduce the likelihood of catastrophic impacts from climate change. The companion bill to SB 32 (i.e., AB 197) provides additional direction to CARB related to adopting strategies to reduce GHG emissions.

CARB adopted the 2022 Scoping Plan Update on December 15, 2022. The 2022 Scoping Plan Update assesses progress toward the statutory 2030 target while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

SB 97 and *State CEQA Guidelines*: In August 2007, the Legislature adopted SB 97, requiring the Governor's Office of Planning and Research (OPR) to prepare and transmit new CEQA guidelines for mitigating GHG emissions or the effects of GHG emissions to the California

Natural Resources Agency. The OPR submitted its proposed guidelines to the Secretary for Natural Resources on April 13, 2009, and the *State CEQA Guidelines* amendments became effective on March 18, 2010.

The *State CEQA Guidelines* amendments do not specify a threshold of significance for GHG emissions or prescribe assessment methodologies or specific mitigation measures. Instead, the amendments encourage lead agencies to consider many factors in performing a CEQA analysis but rely on the lead agencies in making their significance determinations based upon substantial evidence. The State CEQA Guidelines amendments also encourage public agencies to use programmatic mitigation plans and programs from which to tier when they perform individual project analyses.

The State CEQA Guidelines amendments require a lead agency to make a good-faith effort based on the extent possible on scientific and factual data to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The State CEQA Guidelines amendments give discretion to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project and which model or methodology to use; and/or (2) rely on a qualitative analysis or performance-based standards. The California Natural Resources Agency is required to periodically update the guidelines to incorporate new information or criteria established by the CARB pursuant to AB 32.

California Green Building Standards: The California Green Building Standards Code, Part 11 of the California Code of Regulations, is commonly called the CALGreen Code. The first edition of the CALGreen Code was released in 2008 and contained only voluntary standards. The 2022 CALGreen Code was updated in 2022, became effective on January 1, 2023, and applies to non-residential and residential developments. The CALGreen Code contains requirements for construction site selection, stormwater control during construction, construction waste reduction, indoor water use reduction, material selection, natural resource conservation, site irrigation conservation, and more. The CALGreen Code provides design options allowing the designer to determine how best to achieve compliance for a given site or building condition. The CALGreen Code also requires building commissioning, which is a process for the verification that all building systems (e.g., heating and cooling equipment and lighting systems) function at their maximum efficiency.

San Joaquin Valley Air Pollution Control District (SJVAPCD) Climate Change Action Plan. In August 2008, the SJVAPCD adopted the Climate Change Action Plan (CCAP) (SJVAPCD 2008). The CCAP directed the SJVAPCD to develop guidance to assist lead agencies, project proponents, permit applicants, and interested parties in assessing and reducing the impacts of project-specific GHG emissions on global climate change.

In December 2009, the SJVAPCD adopted the guidance: *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (SJVAPCD 2009a) and the policy: *District Policy – Addressing GHG Emission Impacts for Stationary Source*

Projects Under CEQA When Serving as the Lead Agency (SJVAPCD 2009b). The guidance and policy rely on performance-based standards, otherwise known as Best Performance Standards (BPS) (SJVAPCD 2009c), to assess the significance of project-specific GHG emissions on global climate change during the environmental review process, as required by CEQA. Projects implementing BPS in accordance with SJVAPCD's guidance would be determined to have a less than the significant individual and cumulative impact on GHG emissions and would not require project-specific quantification of GHG emissions.

2035 Kings County General Plan: The Kings County General Plan *Air Quality Element* includes the following Goals, Objectives, and Action Plans regarding greenhouse gas emissions:

- ***AQ GOAL C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.***
  - AQ OBJECTIVE C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed projects within the County.
    - *AQ Policy C1.1.1*: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
    - *AQ Policy C1.1.2*: Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.
    - *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.

- ***AQ GOAL G1: Reduce Kings County's proportionate contribution of greenhouse gas emissions and the potential impact that may result on climate change from internal governmental operations and land use activities within its authority.***
  - AQ OBJECTIVE G1.1: Identify and achieve greenhouse gas emission reduction targets consistent with the County's proportionate fair share as may be allocated by ARB and KCAG.
    - *AQ Policy G1.1.1*: As recommended in ARB's Climate Change Adopted Scoping Plan (December 2008), the County establishes an initial goal of reducing greenhouse gas emissions from its internal governmental operations and land use activities within its authority to be consistent with ARB's adopted reduction targets for the year 2020. The County will also work with KCAG to ensure that it achieves its proportionate fair share reduction in greenhouse gas emissions as may be identified under the provisions of SB 375 (2008 Chapter 728) for any projects or activities requiring approval from KCAG.

Discussion

Thresholds of Significance

State CEQA Guidelines Section 15064(b) provides that the "determination of whether a project may have a significant effect on the environment calls for a careful judgment on the part of the public agency involved, based to the extent possible on scientific and factual data," and further states that an "ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting."

Appendix G of the *State CEQA Guidelines* includes significance thresholds for GHG emissions. A Project would normally have a significant effect on the environment if it did either of the following:

- Generate GHG emissions, either directly or indirectly that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs.

Currently, no Statewide GHG emissions threshold has been used to determine a project's potential GHG emissions impacts. Threshold methodology and thresholds are still being developed and revised by air districts in California.

Neither Kings County nor SJVAPCD has developed or adopted numeric GHG significance thresholds. Therefore, this analysis evaluates the GHG emissions based on the Project's consistency with the SJVAPCD CCAP and other applicable State GHG reduction goals.

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

Potentially Significant Impact: The Sozinho Dairy #5 Project is expected to generate greenhouse gas (GHG) emissions during both its construction and operational phases, which could potentially have a significant impact on the environment if not adequately managed.

During the construction phase, GHG emissions will primarily result from the construction equipment, vehicles, and machinery. These activities will release carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O) into the atmosphere. Although construction-related emissions are expected to be temporary and will decrease significantly once the construction phase is complete, they will contribute to the Project's overall GHG footprint during the period of site preparation, facility modifications, and infrastructure installation.

In the operational phase, ongoing GHG emissions are expected, consistent with typical dairy operations. Methane from cattle and manure management represents a key contributor to the

GHG profile, with methane's global warming potential being 28 to 36 times that of CO_2 over a 100-year period.

The Project includes BIDA beds, utilizing vermifiltration with wood chips, microbes, and earthworms to treat process water, potentially lowering GHG emissions by enhancing wastewater treatment efficiency and reducing anaerobic conditions that generate methane. Operational practices like weekly corral scraping and dry manure storage in graded areas are also intended to limit methane-producing conditions by avoiding extended anaerobic decay.

However, the absence of methane capture technologies, such as anaerobic digesters or covered lagoon systems, remains a concern. Current industry standards for new dairy projects often suggest such technologies to meet California's climate goals. Without these, operational emissions from livestock and manure could exceed projections, leading to potentially higher GHG levels.

Additionally, the continuous 24-hour operation of the BIDA beds, while beneficial for wastewater treatment, may contribute to additional energy-related GHG emissions, depending on the energy source used. If energy demands are met through non-renewable sources, this could further elevate the Project's GHG emissions profile.

Under State CEQA Guidelines Section 15064(b), a determination regarding the significance of GHG emissions must be based on available scientific and factual data. Although neither Kings County nor the SJVAPCD has established specific numeric thresholds for GHG emissions, the Project's consistency with the SJVAPCD's Climate Change Action Plan (CCAP) and California's GHG reduction goals, as outlined in Assembly Bill (AB) 32 and Senate Bill (SB) 32, must be evaluated.

Given these uncertainties, regarding methane emissions from manure management, energy-related emissions from continuous wastewater treatment operations, and the absence of GHG mitigation strategies—a GHG emissions inventory will be required. This evaluation would determine the total GHG emissions from all operational sources, including livestock, manure management, and energy consumption, and assess the Project's alignment with regional and state climate action plans. The analysis should also determine whether additional mitigation measures, such as the adoption of methane capture technologies, renewable energy systems, or enhanced energy efficiency practices, are required.

Until an evaluation is completed and appropriate mitigation measures are identified and implemented, there is a *Potentially Significant Impact.*

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

No Impact: As discussed above, the SJVAPCD has adopted a CCAP, which includes suggested BPS for proposed development Projects. Appendix J of the SJVAPCD Final Staff Report for the CCAP contains GHG reduction measures; however, these measures are intended for commercial, residential, and mixed-use Projects and would not apply to the Sozinho Dairy #5 Project. The only applicable measure is the following:

- To minimize greenhouse gas emissions and optimize equipment efficiency, all equipment shall be operated following manufacturers' specifications and approved design specifications.

The Sozinho Dairy #5 Project has been designed to be consistent with key state and regional plans, policies, and regulations aimed at reducing GHG emissions, including AB 32 and the 2022 Scoping Plan. These plans provide a framework for reducing GHG emissions across California, with specific focus areas including agriculture and dairy operations, due to their substantial contributions to methane emissions.

The Project's compliance with the SJVAPCD CCAP, which includes performance standards for reducing GHG emissions, further ensures that the Project will not conflict with GHG reduction efforts. Additionally, the Project's design includes measures to optimize energy efficiency, manage waste, and reduce emissions from transportation and other operational activities, all of which are consistent with state GHG reduction goals.

Since the Project aligns with and supports these established plans and regulations, there is no expected conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. Therefore, the impact is considered *No Impact.*

IX. HAZARDS AND HAZARDOUS MATERIALS

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

Environmental Setting

The nearest school, Kit Carson Union Elementary School, is located approximately 2.1 miles north of the Project Site. The Site is approximately 2.15 miles southeast of the nearest public airport (Hanford Municipal Airport).

The Department of Toxic Substances Control's (DTSC's) EnviroStor was used to identify any sites associated with the releases of hazardous materials or wastes within the Project area. This research confirmed that the Project would not be located on a site that is included on a list of hazardous materials sites compiled under Government Code Section 65962.5.

Regulatory Setting

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S. Code [U.S.C.] §9601 et seq.). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, or the Superfund Act) authorizes the President to respond to releases or threatened releases of hazardous substances into the environment.

Occupational Safety and Health Administration. The Occupational Safety and Health Administration (OSHA) sets and enforces Occupational Safety and Health Standards to assure safe working conditions. OSHA provides training, outreach, education, and compliance assistance to promote safe workplaces. The proposed Project would be subject to OSHA requirements during construction, operation, and maintenance.

Toxic Substances Control Act of 1976 (15 U.S.C. §2601 et seq.). The Toxic Substance Control Act was enacted by Congress in 1976 and authorized the EPA to regulate any chemical substances determined to cause an unreasonable risk to public health or the environment.

Hazardous Waste Control Law, Title 26. The Hazardous Waste Control Law creates hazardous waste management program requirements. The law is implemented by regulations contained in Title 26 of the California Code of Regulations (CCR), which contains requirements for the following aspects of hazardous waste management:

- Identification and classification;
- Generation and transportation;
- Design and permitting of recycling, treatment, storage, and disposal facilities;
- Treatment standards;
- Operation of facilities and staff training; and
- Closure of facilities and liability requirements.

California Code of Regulations, Title 22, Chapter 11. Title 22 of the California Code of Regulations contains regulations for identifying and classifying hazardous wastes. The CCR defines waste

as hazardous if it has the following characteristics: ignitability, corrosivity, reactivity, and/or toxicity.

California Emergency Services Act. The California Emergency Services Act created a multi-agency emergency response plan for California. The Act coordinates various agencies, including CalEPA, Caltrans, the California Highway Patrol, regional water quality control boards, air quality management districts, and county disaster response offices.

Kings County Department of Public Health: The Kings County Department of Public Health implements the Hazardous Waste Program and the Hazardous Waste Treatment/Tiered Permit Program throughout Kings County. These programs aim to ensure that all hazardous waste generated in Kings County businesses is appropriately handled, recycled, treated, stored, and disposed. Environmental Health staff inspects facilities that generate hazardous waste, investigates reports of illegal hazardous waste disposal, and responds to emergency spills of hazardous chemicals. Environmental Health staff also participates in public education programs to inform industries and residents about the laws and regulations relating to the safe disposal of hazardous waste.

2035 Kings County General Plan: The Kings County 2035 General Plan *Safety Element* includes the following goals, objectives, and policies on hazards and hazardous materials and have been relevant to this analysis:

- ***HS GOAL A1: Preventative measures reduce the potential impacts of natural hazards upon people's lives, property, and the environment.***
  - HS OBJECTIVE A1.3: Limit growth and development in hazard areas to minimize new areas susceptible to higher risk of natural hazards.
    - *HS Policy A1.3.1*: Implement natural hazards review criteria for new development that is based upon information provided in the Natural Hazards Section of the Health and Safety Element to improve long term loss prevention.
- ***HS GOAL B1: Promote the health and well-being of County residents, and support healthy living environments, physical activity opportunities, medical services, and readily available nutritious food sources.***
  - HS OBJECTIVE B1.5: Ensure adequate protection of County residents from new generations of toxic or hazardous waste substances.
    - *HS Policy B1.5.1*: Evaluate development applications to determine the potential for hazardous waste generation and be required to provide sufficient financial assurance that is available to the County to cover waste cleanup and/or site restoration in instances where the site has been abandoned or the business operator is unable to remove hazardous materials from the site.

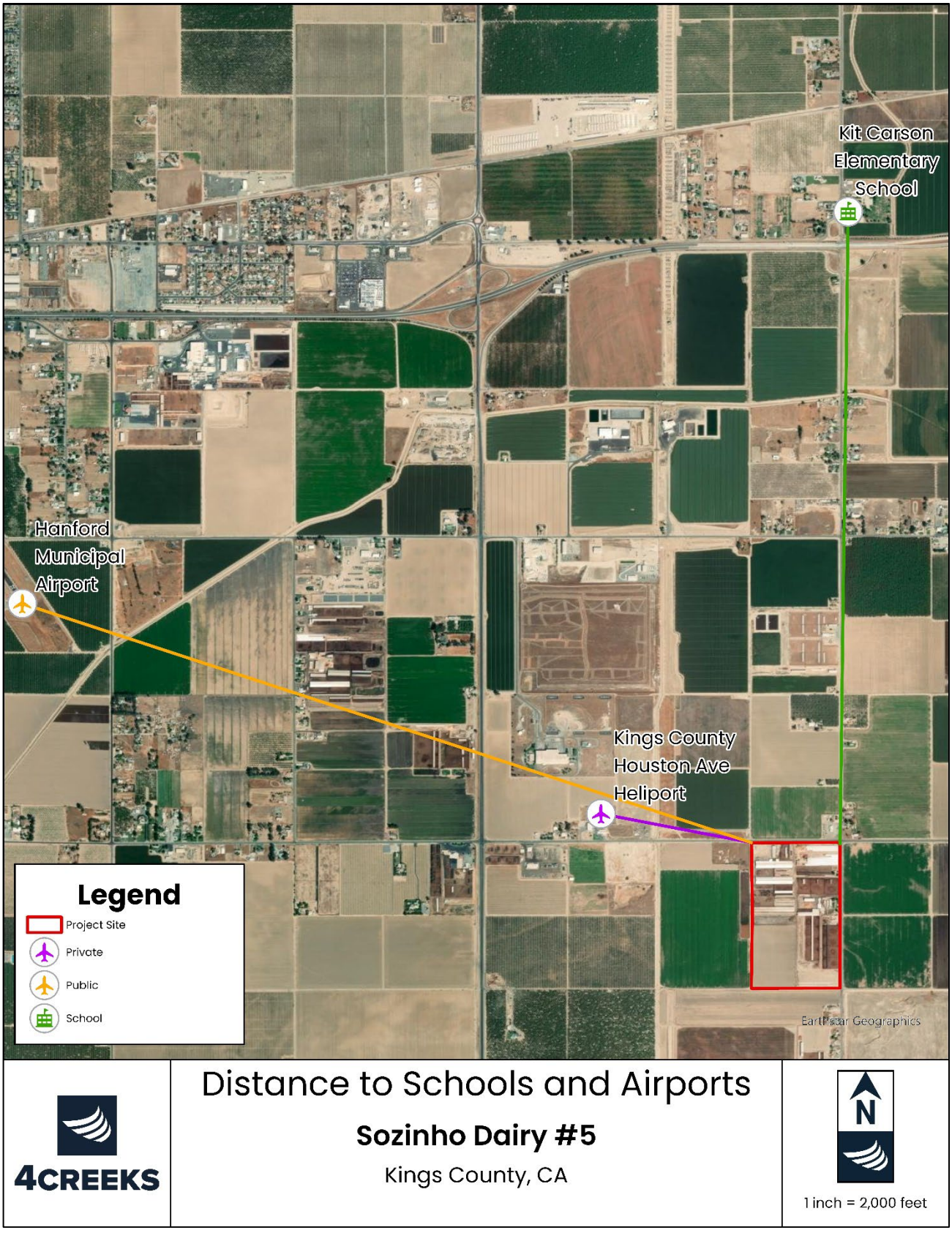


Figure 3-5: Distance to Schools and Airports

Discussion

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

Less than Significant Impact with Mitigation Incorporation: The Sozinho Dairy #5 Project will involve the use of hazardous materials typical of agricultural and dairy operations, such as fuels, oils, and cleaning agents. During construction, materials like diesel fuel and lubricants will be used to operate machinery. Operation of the dairy will involve the storage and use of materials such as diesel fuel, hydraulic oil, motor oil, and propane. The Project will not involve large-scale transport or disposal of hazardous materials, and it will not generate hazardous waste in quantities that would pose a significant risk.

To ensure compliance with safety regulations and minimize potential hazards, Mitigation Measure HAZ-1 requires the preparation and implementation of a Hazardous Materials Business Plan (HMBP). The HMBP will outline procedures for the safe handling, storage, and disposal of hazardous materials, as well as emergency response protocols, in accordance with the California Health and Safety Code, Chapter 6.95, the Hazardous Materials Transportation Act, and CCR, Title 8 and Title 22. Additionally, Best Management Practices (BMPs) will be implemented during construction and operation to further reduce risks associated with hazardous materials.

With the incorporation of Mitigation Measure HAZ-1 and adherence to applicable regulations, the Project's impacts related to the routine transport, use, or disposal of hazardous materials are expected to be *Less Than Significant with Mitigation Incorporation.*

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?

Less than Significant Impact: While the use of hazardous materials during construction and operation poses some risk, the Project includes BMPs to prevent and manage accidental releases. These measures include proper storage, handling, and disposal of hazardous materials, as well as immediate response protocols in the event of a spill.

Additionally, the Project's use of a reinforced composite polyethylene (RCPE) liner in waste management systems will minimize the risk of hazardous materials contaminating groundwater or surface waters. Given these precautions, any accidental release of hazardous materials is not reasonably foreseeable to result in significant environmental harm. Therefore, the impact is considered *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?

No Impact: The nearest school, Kit Carson Union Elementary School, is located approximately 2.1 miles north of the Project Site. Since the Project is not within one-quarter mile of any existing or proposed schools, and does not involve the emission or handling of acutely hazardous materials near a school, the impact is considered *No Impact.*

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

No Impact: The Project Site is not listed on any hazardous materials sites under Government Code Section 65962.5. DTSC's EnviroStor database confirms that the Site is not associated with any releases of hazardous materials or waste that would pose a risk to the public or environment. Therefore, the impact is considered *No Impact.*

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?

No Impact: The nearest public airport, Hanford Municipal Airport, is located approximately 2.15 miles northwest of the Project Site. The Project is outside the influence area of the airport and is not subject to any airport land use plans. Therefore, there is no safety hazard associated with the proximity to the airport, and the impact is considered *No Impact.*

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

No Impact: The Project will not interfere with any existing emergency response or evacuation plans. The Project design and site plan will be reviewed by local authorities, including the Fire Department, to ensure compliance with all relevant emergency planning requirements. Therefore, the impact is considered *No Impact.*

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

No Impact: The Project Site is located in an agricultural area that is not prone to wildland fires. The surrounding land is primarily farmland with low vegetation density, reducing the risk of wildland fires. Additionally, the Kings County General Plan indicates that the fire hazard in the Project area is low. Therefore, the Project will not expose people or structures to significant risks from wildland fires, and the impact is considered *No Impact.*

Mitigation Measures for Impacts on Hazards and Hazardous Materials

Mitigation Measure HAZ-1: Hazardous Materials Business Plan. To ensure compliance with applicable safety regulations and minimize risks associated with the handling, storage, and use of hazardous materials at the Sozinho Dairy #5 facility, the applicant shall prepare and file a Hazardous Materials Business Plan (HMBP), prior to the initiation of any construction or operational activities involving hazardous materials. The HMBP shall include the following components:

- Inventory of Hazardous Materials: A detailed inventory of all hazardous materials to be used, stored, or disposed of on-site, including quantities, storage locations, and handling procedures.
- Emergency Response Plan: Procedures for responding to spills, leaks, or other incidents involving hazardous materials, including notification protocols, containment measures, and cleanup procedures.
- Employee Training: A training program for all employees handling hazardous materials, ensuring they are informed of proper handling, storage, and emergency response procedures in accordance with state and federal regulations.
- Site Map: A detailed site map indicating the locations of hazardous materials storage, handling areas, and emergency response equipment, such as spill kits and fire extinguishers.

The applicant shall submit the HMBP for review and approval by the Kings County Environmental Health Services Division prior to the issuance of any construction or grading permits. The plan shall be updated annually or as required by regulatory authorities, and the applicant shall maintain records of compliance, including inspection reports and employee training logs, for review by the County upon request. Implementation of the HMBP will reduce potential impacts related to hazardous materials to a less than significant level by ensuring safe handling, storage, and emergency response procedures are in place.

X.HYDROLOGY AND WATER QUALITY

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

Environmental Setting

Surface Water: The proposed Project Site is within the Tulare Lake Basin Watershed, covering portions of Fresno, Kern, Kings, and Tulare Counties. More than 16 rivers and creeks flow from

surrounding mountains into the Basin's small lakes and wetlands. The most prominent rivers and streams within the Watershed are the Kings River and the Kaweah River. The alluvial fans of the Kings River and Kaweah River dominate the Kings County Water District landscape.

Aquatic features in the near vicinity of the site include two dairy wastewater retention ponds, one of which is proposed for the construction of two earthen berms within it, an irrigation ditch approximately 0.3 miles west of the project site, a seasonal basin approximately 0.4 miles northwest of the project site, and a percolation basin approximately 0.2 miles southeast of the project site. Guernsey Slough and Cross Creek are located approximately 1.7 miles southeast of the project site and 1.7 miles east of the project site respectively.

Groundwater: The proposed Project would be located within the Tulare Lake Subbasin. Within the Tulare Lake Subbasin, the Site is under the jurisdiction of the Mid-Kings River Groundwater Sustainability Agency. The Project is within the Kings River Conservation District.

Stormwater Drainage: The stormwater management system at Sozinho Dairy #5 is designed to effectively control runoff, prevent erosion, and minimize environmental impact. The Site has been strategically graded to ensure that surface water is directed away from operational areas and toward designated collection and treatment basins. This helps prevent water accumulation around structures and operational zones, reducing the risk of standing water and potential contamination.

Manure storage and process water areas are carefully designed to ensure that any stormwater runoff is collected within the wastewater retention ponds rather than flowing into surrounding agricultural lands. The facility also incorporates erosion control measures, such as rock aprons and stabilized drainage channels, to prevent soil displacement during heavy rainfall events. These features enhance the stability of the Site and protect surrounding areas from potential sediment runoff.

Once collected, stormwater is directed to retention basins, where it undergoes controlled treatment before either being reused or discharged in compliance with regulatory standards. The underlying soil composition, primarily Kimberlina fine sandy loam and Wasco sandy loam, provides effective drainage while minimizing the risk of stormwater infiltration into groundwater. Additionally, the facility maintains compliance with local and state stormwater management regulations, including those established by the DWR and the SJVAPCD. By implementing these stormwater management strategies, Sozinho Dairy #5 ensures that its operations do not negatively impact surrounding water resources or agricultural land.

Regulatory Setting

Clean Water Act: The Clean Water Act (CWA) is enforced by the U.S. EPA and was developed in 1972 to regulate discharges of pollutants into the waters of the United States. The Act made it

unlawful to discharge any pollutant from a point source into navigable waters unless a National Pollution Discharge Elimination System (NPDES) Permit is obtained.

National Flood Insurance Act: The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

California Water Quality Porter-Cologne Act: California's primary statute leading water quality and water pollution concerns with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants the State Water Resource Control Board (SWRCB) and each of the nine Regional Water Quality Boards (RWQCB) power to protect water quality and further develop the Clean Water Act within California. The applicable RWQCB for the proposed Project is the Central Valley RWQCB.

Central Valley RWQCB: The proposed Project Site is within the jurisdiction of the RWQCB. The Central Valley RWQCB requires a NPDES Permit and a SWPPP for projects disturbing more than one acre of total land area. Because the Project is greater than one acre, an NPDES Permit and SWPPP will be required.

Mid-Kings River Groundwater Sustainability Agency: The MKRGSA is a joint powers authority, comprised of three local public agencies (Kings County Water District, City of Hanford and County of Kings). The MKRGSA is responsible for the implementation of California's Sustainable Groundwater Management Act (SGMA) compliance within the GSA's boundary of the Tulare Lake Subbasin.

2035 Kings County General Plan

The Kings County General Plan *Resource Conservation Element and Health and Safety Element* contains the following Goals, Objectives, and Action Plans on flood control and water use that are potentially applicable to the proposed Project:

- ***HS GOAL A4: Prevent unnecessary exposure of people and property to flood damage.***
  - HS OBJECTIVE A4.1: Direct new growth away from designated flood hazard risk areas and regulate new development to reduce the risk of flood damage to an acceptable level.
    - *HS Policy A4.1.1*: Review new development proposals against current Federal Emergency Management Agency (FEMA) digital flood insurance rate maps and California Department of Water Resource special flood hazard maps to determine project site susceptibility to flood hazard.
    - *HS Policy A4.1.2*: Reserve FEMA designated flood hazard areas for agricultural and natural resource conservation uses along the floodway channels and Tulare Lake Basin.

- *HS Policy A4.1.3*: Determine base flood elevations for new development proposals within or adjacent to 100-year flood zone areas as identified in latest FEMA Digital Flood Insurance Rate Map, to definitively assess the extent of property potentially subject to onsite flood hazards and risks.
- *HS Policy A4.1.4*: Direct new urban growth to existing cities and community districts, or away from New Community Discouragement Areas to avoid flood hazard areas and increased risk to people and property.
- *HS Policy A4.1.5*: Regulate development, water diversion, vegetation removal, and grading to minimize any increase in flood damage to people and property.
- *HS Policy A4.1.6*: New development shall provide onsite drainage or contribute towards their fair share cost of off-site drainage facilities to handle surface runoff.
- *HS Policy A4.1.7*: Consider and identify all areas subject to flooding in the review of all land divisions and development projects.
- *HS Policy A4.1.8*: Enforce the "Kings County Flood Damage Prevention Ordinance," Chapter 5A of the Kings County Code of Ordinances.

❖ ***RC GOAL A1: Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long term sustainable water supplies for the region.***

➢ RC OBJECTIVE A1.4: Protect the quality of surface water and groundwater resources in accordance with applicable Federal, state, and regional requirements and regulations.

- *RC Policy A1.4.1*: Evaluate proposed land uses and development projects for their potential to create surface and groundwater contamination from point and non-point sources. Confer with other appropriate agencies, as necessary, to assure adequate water quality review to prevent soil erosion; direct discharge of potentially harmful substances; ground leaching from storage of raw materials, petroleum products or waste; floating debris; and runoff from the site.
- *RC Policy A1.4.2*: Monitor and enforce provisions to control water pollution contained in the U.S. EPA National Pollutant Discharge Elimination System (NPDES) program as implemented by the California Water Quality Control Board, Central Valley Region.
- *RC Policy A1.4.3*: Require the use of feasible and cost-effective Best Management Practices (BMPs) and other measures designed to protect surface water and groundwater from the adverse effects of construction activities and urban and agricultural runoff in coordination with the California Water Quality Control Board, Central Valley Region.
- *RC Policy A1.4.4*: Encourage and support the identification of degraded surface water and groundwater resources and promote restoration where appropriate.

➢ RC OBJECTIVE A1.6: Protect groundwater quality by applying development standards which seek to prevent pollution of surface or groundwater and net loss of natural water features.

- *RC Policy A1.6.2*: Support measures to ensure that water users do not unreasonably use groundwater resources.

- RC OBJECTIVE C2.2: Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.
  - *RC Policy C2.2.1*: Require erosion control measures for any development involving construction or grading near waterways, or on land with slopes over ten percent. Require that improvements such as roads and driveways be designed to retain natural vegetation and topography to the extent feasible.
  - *RC Policy C2.2.2*: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

Discussion

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

Potentially Significant Impact: The Sozinho Dairy #5 Project is located within the Tulare Lake Basin Watershed and proposes an on-site wastewater treatment system that utilizes BIDA beds and vermifiltration to manage and treat process water. The BIDA beds use a combination of wood chips, microbes, and earthworms to treat wastewater by removing contaminants before the water is reused for irrigation, storage, or further recirculation throughout the facility. While these systems are designed to enhance wastewater treatment efficiency, their effectiveness in consistently meeting regulatory thresholds must be carefully verified.

The Project does not propose any increase in herd size and no additional water use is expected beyond current operational demands. The BIDA beds are part of a wastewater treatment upgrade utilizing existing process water only, with no new or additional discharge volume generated. Evidence of current water use and confirmation of no increase in usage is provided to the Mid-Kings River GSA under separate cover.

The wastewater management system proposed by the Project includes several structural improvements, such as mechanical separators to remove solid waste from liquid effluent, earthen berms for additional process water separation, and retention ponds for temporary wastewater storage. Additionally, the facility's stormwater management system is integrated with the wastewater treatment infrastructure to ensure that surface runoff from operational areas is captured and treated before potential discharge or reuse. The geotechnical and groundwater evaluations conducted for the Project confirm that shallow groundwater was not encountered in soil borings drilled to a depth of 21.5 feet below ground surface. The California Department of Water Resources indicates the depth to regional groundwater at the Project Site is greater than 50 feet below ground surface (bgs). which exceeds the five-foot minimum separation requirement, thereby reducing the likelihood of groundwater contamination.

The geotechnical and groundwater evaluations conducted for the Project confirm that shallow groundwater was not encountered in soil borings drilled to a depth of 21.5 feet below ground surface. The California Department of Water Resources indicates the depth to regional groundwater at the Project Site is greater than 50 feet bgs. This significant depth separation reduces the immediate risk of contamination from surface activities. Moreover, the Site's underlying soils, classified as Kimberlina fine sandy loam and Wasco sandy loam, provide additional protection due to their low erosion potential. These soil characteristics further limit the potential for vertical migration of contaminants into groundwater.

Despite these protective measures, the effectiveness of the wastewater and stormwater management systems must be validated through ongoing compliance with NPDES regulations, including the SWPPP during construction and operational phases. The wastewater retention ponds and BIDA beds must be managed to prevent the buildup of solids that could compromise storage capacity and increase the risk of uncontrolled discharges. Failure to properly manage these systems could lead to surface water degradation, particularly if process water or stormwater runoff is not adequately treated prior to land application.

Additionally, the RWQCB requires semi-annual groundwater sampling to monitor potential impacts from facility operations. This includes testing for nitrate, ammonia, total Kjeldahl nitrogen, and other relevant contaminants. The Central Valley Dairy Representative Monitoring Program (CVDRMP), which the facility participates in, also plays a role in assessing regional groundwater impacts from dairy operations. Continued participation in this program is necessary to ensure that the facility's operations remain protective of groundwater quality and in compliance with regulatory standards.

Given these factors, there remains a potentially significant impact if the proposed wastewater treatment system and stormwater management measures are not properly implemented or fail to meet NPDES requirements. While the facility's current design has a high potential for compliance, additional verification through detailed water quality monitoring, operational inspections, and regulatory reporting is essential.

Therefore, further analysis is warranted to determine whether the Project's wastewater treatment systems, stormwater infrastructure, and management practices will achieve the necessary compliance with water quality standards. If compliance issues are identified, mitigation measures may be required to reduce impacts to a less-than-significant level. There is a *Potentially Significant Impact.*

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

Less than Significant Impact: The Sozinho Dairy #5 Project is located within the Tulare Lake Subbasin and is managed by the Mid-Kings River Groundwater Sustainability Agency. The

Project includes water recycling processes that reduce the demand for groundwater and incorporates wastewater retention ponds that help maintain groundwater recharge. The system is designed to prevent significant impacts on groundwater supplies or recharge rates, ensuring that the Project does not interfere with sustainable groundwater management.

The BIDA beds only treat process water generated from existing dairy operations, and no freshwater is added to the system. As a result, the Project will not cause any increase in groundwater usage.

No increase in water demand is anticipated. The Project will not increase groundwater pumping, and all process water treated by the BIDA beds is recycled from existing operations. There is no proposed increase in herd size. Documentation of current water use and confirmation of no increase has been or will be provided to the Mid-Kings River GSA for their review.

By ensuring proper stormwater management and wastewater treatment, the impact on groundwater resources is considered *Less Than Significant.*

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?

Less than Significant with Mitigation Incorporation: The Project includes grading and construction activities that could lead to erosion or siltation. However, Mitigation Measure HYD-2 requires the preparation of a SWPPP that includes BMPs such as the use of provisional retention basins, silt fencing, and soil stabilization techniques to control erosion and siltation. The implementation of these BMPs will ensure that any potential impacts are minimized, resulting in a *Less Than Significant Impact with Mitigation Incorporation.*

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

Less than Significant with Mitigation Incorporation: The stormwater drainage system is designed to handle runoff from significant storm events, including a 25-year, 24-hour storm, preventing flooding on- or off-site. The Project includes measures such as rock aprons and proper grading to manage runoff efficiently. Mitigation Measure HYD-2 further ensures that the system will be monitored and maintained and reduce the likelihood of flooding. Mitigation Measure HYD-3 ensures that stormwater facilities are properly maintained to handle runoff, preventing any increase in flooding risk, and resulting in a *Less Than Significant Impact with Mitigation Incorporation.*

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?

Less than Significant with Mitigation Incorporation: The Project's stormwater management system is designed to manage runoff without exceeding the capacity of the existing drainage system. The WMP confirms that the wastewater retention ponds and stormwater drainage system have adequate capacity to handle both normal operational runoff and storm events. Mitigation Measure HYD-2 ensures that BMPs will be in place to control and monitor runoff. Mitigation Measure HYD-3 ensures long-term maintenance of these systems to prevent pollution and manage runoff effectively. The impact is therefore *Less Than Significant Impact with Mitigation Incorporation.*

iv. Impede or redirect flood flows?

Less than Significant Impact: The Project's design and stormwater management system are intended to retain water on-site, preventing any alteration of existing drainage patterns that could lead to redirected flood flows. The WMP and stormwater drainage system ensure that flood risks are managed effectively, resulting in a *Less Than Significant Impact.*

d) Would the Project, in flood hazard, tsunami, or seiche zones, risk the release of pollutants due to Project inundation?

No Impact: The Project Site is located inland, away from oceanic or large water bodies, eliminating the risk of tsunamis. Additionally, the Site is not within a 100-year flood hazard zone, and the relatively flat topography reduces the risk of inundation. Consequently, there is no risk of pollutant release due to inundation, resulting in *No Impact.*

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

No Impact: The Project complies with local and regional water management plans, including the Mid-Kings River Groundwater Sustainability Plan and the RWQCB guidelines. The Project's design and operations adhere to all applicable water quality and groundwater management regulations, ensuring no conflict with these plans.

The Project is being reviewed by the Mid-Kings River GSA. The applicant has confirmed no increased water demand, and no expansion of herd size, consistent with the sustainability goals of the Mid-Kings River GSP. Correspondence with the GSA has been initiated to ensure consistency with the groundwater management plan. Therefore, the impact is considered *No Impact.*

Mitigation Measures for Hydrology and Water Quality

Mitigation Measure HYD-1: Before the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit.

- Before issuance of grading permits for Phase 1, the Applicant shall submit a copy of the NOI to the County.
- The County shall review noticing documentation before the approval of the grading permit. County monitoring staff will inspect the Site during construction for compliance.

Mitigation Measure HYD-2: The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days before the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for site construction shall be developed before the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control material discharge from the Site. The following BMP methods shall include, but would not be limited to:

- Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust;
- A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures;
- Provisional retention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used;
- Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours before and during extreme weather conditions; and,
- BMPs will be strictly followed to prevent spills and discharges of pollutants on Site, such as material storage, trash disposal, construction entrances, etc.

Mitigation Measure HYD-3: A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained following the manufacturer's maintenance conditions. The manual shall require that devices be cleaned before the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following:

- Runoff shall be directed away from the trash and loading dock areas;
- Bins shall be lined or otherwise constructed to reduce the leaking of liquid wastes;
- Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and,
- Impervious berms, trench catch basins, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or washdown water to enter the drainage system.

XI. LAND USE AND PLANNING

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

Environmental Setting

The proposed Project is located in an unincorporated area of Kings County, approximately 2.1 miles southeast of Hanford and 10 miles east of Lemoore. The Project Site and the surrounding properties are primarily designated for agricultural land use under the Kings County General Plan. While there are several agricultural residences within a half-mile radius of the Project Site, all the land within this area is zoned for agricultural purposes, ensuring that the Project remains consistent with the surrounding land use designations.

Regulatory Setting

Kings County Development Code: As shown in Figure 3-6, Kings County has zoned the Project Site and surrounding properties as General Agriculture, 20 acres minimum. This district is intended primarily for application to rural areas of the county which are generally characterized by extensive or intensive agricultural uses of land north of Kansas Avenue where farm sizes have historically been smaller than in other areas of the county. These areas should be reserved for commercial agricultural uses because of their high-quality soil, existing or potential irrigation works, exclusive agricultural character of the area, or the need to reserve areas for intensive agricultural uses, which by their nature may be incompatible with nonagricultural or quasi-agricultural uses. The minimum parcel size in the AG-20 zoning district is 20 acres in size.

2035 Kings County General Plan: The 2035 Kings County General Plan *Land Use Element* contains the following Goals, Objectives, and Action Plan on flood control and water use that are potentially applicable to the proposed Project:

- ***LU GOAL B1: Protect agricultural lands throughout the County, and in particular along the edges of community districts and Urban Fringe by maintaining large parcel sizes and preventing the premature development of incompatible urban uses.***
  - LU OBJECTIVE B1.1: Preserve the integrity of the County's agricultural land resources through agricultural land use designations and other long term preservation policies.
    - *LU Policy B1.1.1*: Designate all agricultural and grazing land outside of planned urban areas as Limited Agriculture, General Agriculture, Exclusive Agriculture, or Natural Resource Conservation.
    - *LU Policy B1.1.2*: Continue to use Williamson Act and Farmland Security Zone contracts on all priority agricultural lands outside the Primary Sphere of Influence of City and Community District boundaries as defined by LAFCO, so long as State "Open Space Subvention Act" funds remain available.
  - LU OBJECTIVE B1.2: Maintain large parcel sizes of agricultural designated land within Urban Fringe areas and around Community Districts to retain viable agricultural production until such time as land is planned and ready for conversion to other uses.
- ***LU GOAL B2: Agricultural production continues to be supported and enhanced in areas designated for agriculture, while conflicts between agriculture and non-agricultural uses are minimized.***
  - LU OBJECTIVE B2.1: Recognize agriculture as the highest and best use of agricultural designated land and preserve the right of farmers and agricultural operations to continue customary and usual agricultural practices and operate in the most efficient manner possible.
    - *LU Policy B2.1.1: The primary use of land designated Limited Agriculture, General Agriculture, and Exclusive Agriculture shall remain devoted to agricultural uses and related support services.*
    - *LU Policy B2.1.3: Maintain implementation of the County's "Right to Farm Ordinance" adopted in 1996 to continue placing landowners on notice that they live within an agricultural County and may be subject to agriculture related inconveniences or discomforts.*
  - LU OBJECTIVE B2.2: Minimize and reduce the potential for conflicts between agriculture and non-agricultural urban uses.
  - LU OBJECTIVE B2.3: Increase diversified business opportunities within agricultural areas when they are compatible with agricultural operations.
    - *LU Policy B2.3.1: Value added agriculturally related businesses may be allowed when the business operation is primarily associated with the commercial farming operation. Additional employees may be allowed to work at the business.*
- ***LU GOAL B3: Allow agricultural support services within areas designated General Agriculture.***
  - LU OBJECTIVE B3.1: Direct agricultural support services to General Agriculture land use designated areas, while ensuring that services are not harmful to the long-term

agricultural use of the land or potential future urban growth if within the Blueprint Urban Growth Boundary.

- *LU Policy B3.1.1: Allow permanent agricultural service and processing facilities in areas designated General Agriculture, while restricting these types of services in Limited Agriculture and Exclusive Agriculture designated areas.*
- *LU Policy B3.1.2: Review of agricultural service establishments under Site Plan Review shall consider the compatibility of such establishments with the potential future urban growth accommodation when proposed within the Blueprint Urban Growth Boundary.*

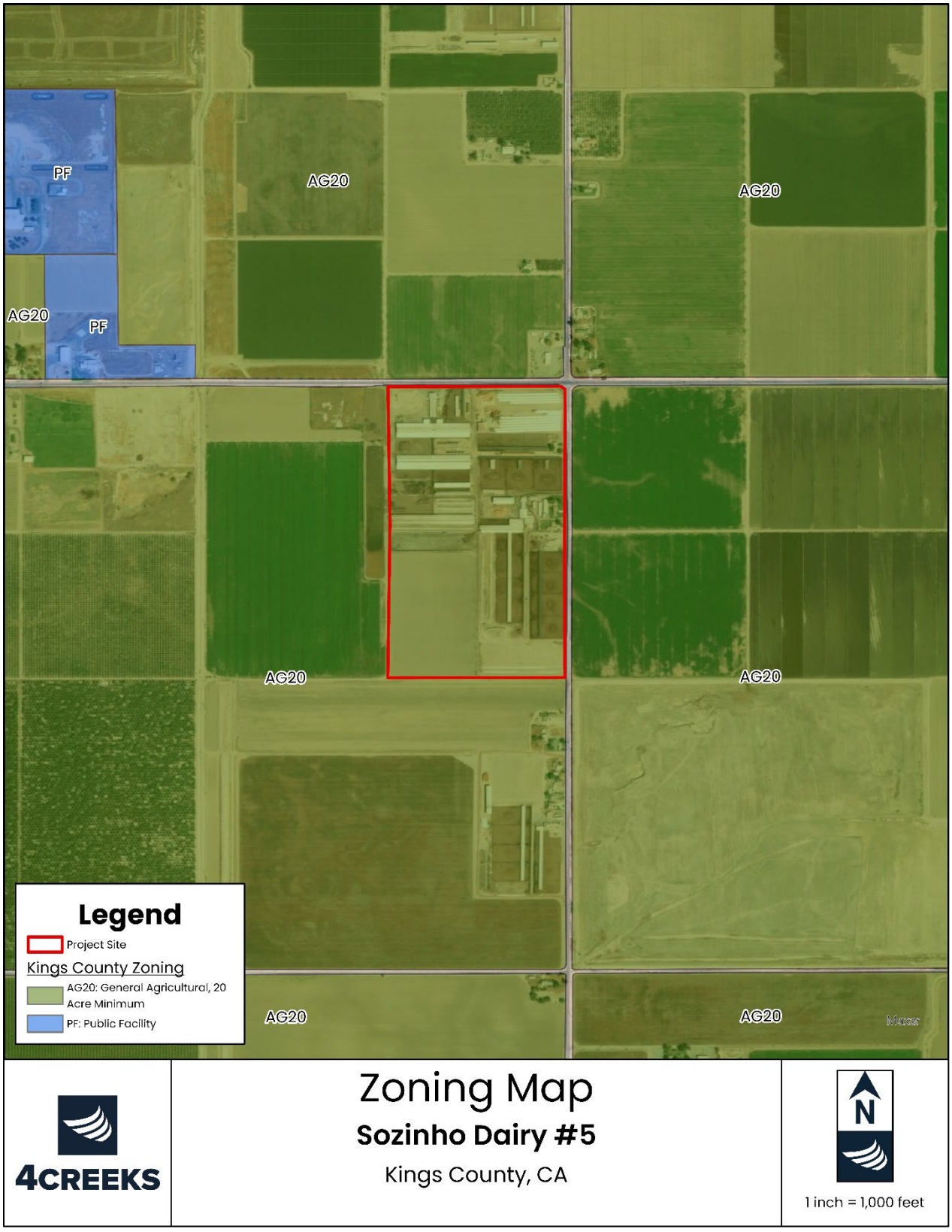


Figure 3-6: Zoning Map

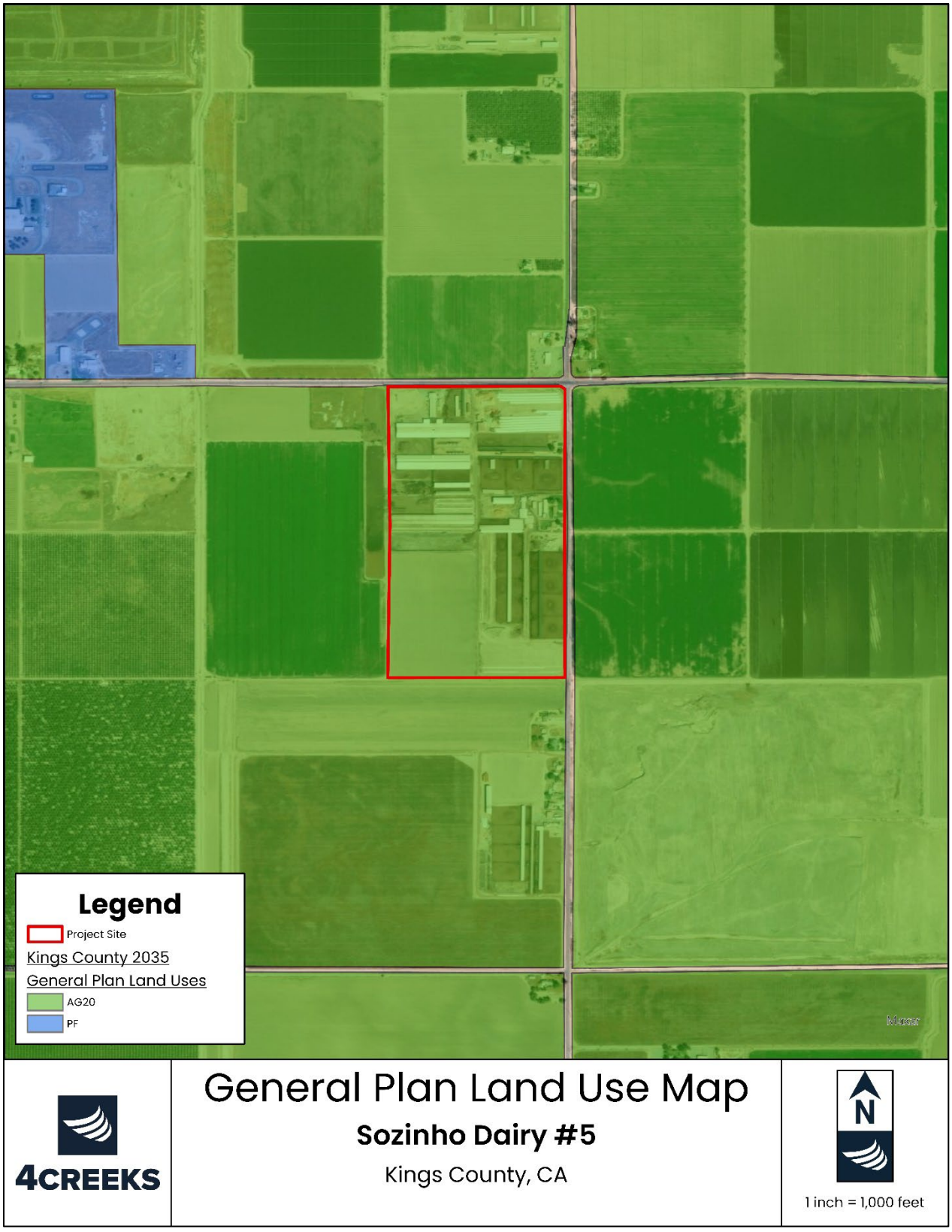


Figure 3-7: General Plan Land Use Map

Discussion

a) Would the Project physically divide an established community?

No Impact: The proposed Project will not physically divide an established community. No established communities are nearby, and it does not expand onto any land outside the Site. The proposed Project Site is designated General Agriculture – 20 Acre minimum under the County's General Plan and would operate as agricultural-related uses following Project implementation. There is *no impact.*

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

No Impact: The Project Site is located on land designated for agricultural uses. The proposed Project does not conflict with this land use or any other policy or regulation adopted to avoid or mitigate an environmental effect. There is *no impact.*

XII. MINERAL RESOURCES

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

Environmental Setting

There are no mineral resource zones in Kings County, and no mineral extraction occurs on or adjacent to the proposed Project Site. According to the *Resource Conservation Element* of the Kings County General Plan, historical mines within the County include an open-pit gypsum mine and a mercury mine; however, these mines are now closed.

Regulatory Setting

California State Surface Mining and Reclamation Act: The California State Surface Mining and Reclamation Act was adopted in 1975 to regulate surface mining, prevent adverse environmental impacts, and preserve the state's mineral resources. The Act is enforced by DOC's Division of Mine Reclamation.

Discussion

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?

No Impact: The Project Site has no known mineral resources that would be of value to the region and the state's residents. The Project Site is not designated as an important mineral resource recovery Site under the County's General Plan. Therefore, the proposed Project would not result in the loss or impede the mining of regionally or locally important mineral resources. There is *no impact.*

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 lands use plan?

No Impact: No known mineral resources are important to the region, and the Project Site is not designated under the County's General Plan as an important mineral resource recovery Site. Therefore, the proposed Project would not result in the loss of availability of known regionally or locally important mineral resources. There is *no impact.*

XIII. NOISE

Would the Project result in:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Generation of a substantial temporary or permeant 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 ground-borne 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 public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☑

Environmental Setting

Noise is often described as an unwanted sound, while sound is the variation in air pressure that the human ear can detect. If the pressure variations occur at least 20 times per second, they can be detected by the human ear. The number of pressure variations per second is called the frequency of sound. The frequency is expressed as cycles per second, called Hertz (Hz).

Ambient noise is the "background" noise of an environment. Ambient noise levels on the proposed Project Site are primarily due to agricultural activities and traffic. Construction activities usually result in an increase in sound above ambient noise levels.

Vibration is sound radiated through the ground. Vibration can result from a source (e.g., train operations, motor vehicles, machinery equipment, etc.), causing the adjacent ground to move, creating vibration waves that propagate through the soil to the foundations of nearby buildings. This effect is a ground-borne vibration.

Sensitive Receptors: Noise level allowances for different land types reflect the varying noise sensitivities associated with those uses. Residences, hotels/motels, hospitals, schools, and libraries are some of the most sensitive types of noise intrusion. Therefore, these have more stringent noise level allowances than most commercial or agricultural uses that are not subject

to impacts such as sleep disturbance. The nearest sensitive receptor to the Sozinho Dairy #5 Project Site is a single-family residence located approximately 250 feet to the northeast, across Houston Avenue.

Regulatory Setting

2035 Kings County General Plan: The Kings County General Plan, particularly its Noise Element, establishes specific noise level standards for various land uses associated with agricultural operations. Rather than setting a specific maximum exterior noise level for agricultural zones, the Plan emphasizes that agricultural uses are the principal and protected land uses in designated agricultural areas. Under the County's Right-to-Farm Ordinance, typical agricultural activities, including equipment and animal noise, are recognized as occurring 24 hours a day, seven days a week, and are not generally considered nuisances. The Noise Element explicitly states that elevated sound levels from normal agricultural operations are expected and accepted, and due to the variability and seasonal intensity of such activities, quantifying noise impacts using standard thresholds is not considered feasible.

Right-To-Farm Ordinance: The Kings County Right-To-Farm Ordinance acknowledges that agricultural activities, including those at dairy farms, often generate noise from equipment, animals, and other operations. This ordinance provides protections for farmers by ensuring that typical farming noise is not deemed a nuisance, provided it falls within the acceptable noise levels established by the County's General Plan. The ordinance emphasizes that agricultural operations are a vital part of the County's economy and landscape, and therefore, noise generated from these activities is expected and tolerated.

Discussion

a) Would the Project result in generation of a substantial temporary or permeant 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: The expansion of Sozinho Dairy #5 is anticipated to result in only minimal increases in noise levels compared to the existing operations, which include noise from tractors, trucks, pumps, and livestock. The Project will not introduce any new significant noise sources. The Kings County General Plan allows for noise levels of up to 70 dB (Ldn) in agricultural areas, and the expected noise levels from the expanded dairy operations will remain within this acceptable range.

Additionally, the Kings County Right-To-Farm Ordinance recognizes that elevated noise levels from agricultural activities are a normal part of farming operations and are not typically considered a nuisance. The Project's noise levels will not exceed 70 dB (Ldn), ensuring

compliance with the General Plan's Noise Element and the Right-To-Farm Ordinance. Therefore, the impact of noise from the Project is considered *Less Than Significant.*

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

Less than Significant Impact: The Sozinho Dairy #5 expansion does not include activities that would generate significant ground-borne vibration or noise levels. Construction activities, such as the operation of heavy machinery, may produce some temporary vibrations, but these will be minor and intermittent. Given the agricultural setting and the distance to the nearest sensitive receptors, these vibrations are not expected to have a significant impact. Sources that may produce perceptible vibrations are provided in Table 3-7.

Equipment	Peak Particle Velocity (PPV) (inches/second) at 25 feet	Approximate Vibration Level (VdB) at 25 feet
Large Bulldozer	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small bulldozer	0.003	58

Table 3-7. Vibration Levels Generated by Construction Equipment. Source: Transit Noise and Vibration Impact Assessment, Federal Transit Administration, September 2018.

The primary source of vibration during Project construction would likely be from a bulldozer, which would generate 0.089 inches per second PPV at 25 feet with an approximate vibration level of 87 VdB. Vibration from the bulldozer would be intermittent and not a source of continual vibration. There are no adopted County standards or thresholds of significance for vibration. The evaluation of potential impacts related to construction vibration levels is based on the published data in the 2018 FTA Guidelines. At 25 feet, the buildings most susceptible to vibration could be impacted at .12 inches/second. Because vibrations generated by Project construction would not exceed 0.12 inches/second, and there are no existing buildings within 25 feet of the construction areas, the impact is *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 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 Sozinho Dairy #5 Project Site is located approximately 2.15 miles southeast of Hanford Municipal Airport, but it is not within an airport land use plan area. Given this distance and the nature of the dairy operations, the Project will not expose residents or workers to excessive noise levels related to dairy operations. Therefore, the impact is considered *No Impact*.

XIV. POPULATION AND HOUSING

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☑	☐
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

Environmental Setting

The United States Census Bureau estimated the population in Kings County to be 152,981 as of 2022.

Regulatory Setting

The Kings County population size is controlled by the Kings County Development Code and Land Use Element of the General Plan. These documents regulate the number of dwelling units per acre allowed on residential land uses and establish minimum and maximum lot sizes. These factors have a direct impact on the County's population size.

The Land Use Element of the 2035 Kings County General Plan highlights energy conservation opportunities as a factor affecting building and population growth. The Land Use Element also includes goals for preserving agricultural lands from premature urbanization. Other policies and goals of the 2035 General Plan include those that encourage growth in more urbanized areas of the County and the preservation of agricultural uses and industries.

The Housing Element of the 2035 Kings County General Plan includes policies that address housing, employment, growth management, and adequate provision of resources, facilities, and services. The Housing Element contains several goals and policies intended to encourage continuous analysis and evaluation of population trends and housing needs to allow for the development of Sites and facilities that sustain population growth in the county; encourage development in existing communities; and acknowledge the governmental, environmental, infrastructure, and land use constraints.

Discussion

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

Less than Significant Impact: The construction and operation of the Project will not result in any substantial unplanned growth or population displacement in Kings County. The Project will not construct or remove any homes. The employees of the dairy are likely to live in Kings County currently and would not directly or indirectly impact population growth. There is *a less than significant impact.*

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

No Impact: The construction and operation of the Project would not result in existing residences being removed, and no individuals would be displaced because of the Project. The Project would not result in any existing residences being removed, and no individuals would be displaced because of the Project. There is *no impact*.

XV. PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable serve ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☑	☐
ii. Police protection?	☐	☐	☑	☐
iii. Schools?	☐	☐	☐	☑
iv. Parks?	☐	☐	☐	☑
v. Other public facilities?	☐	☐	☑	☐

Environmental Setting

Fire: The Kings County Fire Department (KCFD), headquartered in Hanford, provides Fire protection for the Project Site. The KCFD operates ten fire stations within the county's unincorporated areas, the nearest located approximately 0.4 miles west of the Site at 7622 Houston Avenue. The KCFD has 88 full-time employees and responds to over 5,100 calls annually. The KCFD responds to various calls, including structure, vehicle, wildland and grass fires, medical aids, traffic accidents, hazardous materials incidents, and various public assistance calls.

Police: The Kings County Sheriff's Department (KCSD), headquartered in Hanford, provides law enforcement for the Project Site. The County is divided into six districts with five Sheriff Substations throughout Kings County, located in Avenal, Corcoran, El Rancho, Kettleman City, and Stratford. The nearest station to the Project Site is the headquarters located in Hanford. Each district has at least one deputy sheriff on duty to serve the unincorporated communities and surrounding County areas. The California Highway Patrol provides traffic enforcement on State Highways and County roads. Kings County is within the California Highway Patrol's Central Division. The nearest CHP office to the Project Site is in Hanford.

Schools: The proposed Project Site is located within the Kit Carson Union Elementary School District and Hanford Joint Union High School District. The nearest school, Kit Carson Union Elementary School, is located approximately 2.1 miles north of the Project Site.

Regulatory Setting

The California Department of Education regulates the School Districts, and the California Department of Justice regulates the Sheriff's Department.

2035 Kings County General Plan: Objectives and Policies related to Public Services are included in the *Health and Safety Element* of the 2035 Kings County General Plan. These Objectives and Policies are as follows:

- ***HS GOAL B1: Promote the health and well being of County residents, and support healthy living environments, physical activity opportunities, medical services, and readily available nutritious food sources.***
  - HS OBJECTIVE B1.4: Provide local health services and emergency medical services in the County's Community Districts to meet the needs of a growing population.
    - *HS Policy B1.4.3: Ensure that County Fire Department personnel remain trained and equipped to provide emergency medical services to those in need of such services within the unincorporated areas of the County.*
- ***HS GOAL C2: Support Countywide safety through adequate law enforcement, quality fire protection, emergency preparedness, and accessibility in times of emergency.***
  - HS OBJECTIVE C2.1: Provide sufficient law enforcement presence within each community district and other unincorporated areas of the County to protect residents, businesses, and visitors from personal and property crimes.
  - HS OBJECTIVE C2.2: Provide quality fire protection services throughout the County by the Kings County Fire Department, and Fire safety preventative measures to prevent unnecessary exposure of people and property to fire hazards in both County Local Responsibility Areas and State Responsibility Area.
    - *HS Policy C2.2.1: Community planning efforts should evaluate the projected need for Fire Department personnel and equipment and necessary funding support to maintain current levels of service as community growth occurs.*
    - *HS Policy C2.2.2: Development proposals and code revisions shall be referred to the County Fire Department for review and comment.*
    - *HS Policy C2.2.3: Use the 1997 Uniform Code for the abatement of Dangerous Buildings. All new structures to be occupied shall be built to current Fire Code Standards.*
    - *HS Policy C2.2.4: Review development proposals according to California Department of Forestry and Fire Protection "Fire Hazard Severity Zone Maps" to*

determine whether a Site is located within a Very High Fire Hazard Severity Zone and subject to Wildland-Urban Interface Fire Area Building Standards and defensible space requirements as adopted under Senate Bill 1595 and effective January 1, 2009.

- *HS Policy C2.2.5: Forward for review and comment all proposed structures within the State Responsibility Area to the California Department of Forestry and Fire Protection within all State Responsibility Areas.*

Discussion

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 serve ratios, response times or other performance objectives for any of the public services:

i. Fire protection?

Less than Significant Impact: The KCFD will provide fire protection services to the Project Site. The Project will not result in the need for new facilities for the KCFD because the Project will not contribute to increased population size within the Kings County Fire Department service area, nor will it extend the boundaries of the Service Area. The impact is *less than significant.*

ii. Police protection?

Less than Significant Impact: Kings County will provide police protection services to the Project Site. The Project will not result in the need for new facilities for the KCSD because the Project will not contribute to increased population size within the service area, nor will it extend to the boundaries of the Kings County Sheriff Department Service Area. The impact is *less than significant.*

iii. Schools?

No Impact: The Project will not result in additional residents to Kings County and will not increase the number of students in the school district. There is *no impact*.

iv. Parks?

No Impact: Because the Project will not result in additional residents, the Project will not create a need for additional parkland. There is *no impact.*

v. Other public facilities?

Less than Significant Impact: Additional development fees may be required to offset the increased demand for public services related to transportation, water, wastewater, groundwater recharge, storm drainage, recreation, and general governmental services. Fees for transportation, water, wastewater, and general government are based on building square

footage and will be calculated before the issuance of building permits. Fees for groundwater recharge and storm drainage are based on Site acreage.

While the payment of development fees could result in the construction of new or altered public service facilities, no specific projects have been identified. As new or expanded public service facilities become necessary, construction or expansion projects would be subject to their own separate CEQA review to identify and mitigate potential environmental impacts. Therefore, the impact is *less than significant*.

XVI.PARKS AND RECREATION

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

Environmental Setting

The nearest recreational area to the Project Site is Home Garden Community Park, approximately 2.45 miles west.

Regulatory Setting

2035 Kings County General Plan: The *Open Space Element* of the 2035 Kings County General Plan contains the following objectives and policies relating to parks and recreation.

- OS OBJECTIVE D1.1: Maintain and enhance the existing County Park system within available funding constraints.
  - *OS Policy D1.1.1: Apply the "Public/Quasi-Public" land use designation to County parks.*
  - *OS Policy D1.1.2: Community Plans should facilitate the development and maintenance of community park(s) within Community District areas to expand recreational resources available to residents.*
  - *OS Policy D1.1.3: Support community involvement that builds capacity for the long-term maintenance and upkeep of open space and community park space within Community Districts.*
- OS OBJECTIVE D1.2: Encourage the development of private recreational facilities compatible with the rural character of Kings County.
  - *OS Policy D1.2.1: Support the establishment of new commercial recreational development, provided it is compatible with surrounding land uses and the intensity of such development does not exceed the ability of the natural*

environment of the Site and the surrounding area to accommodate it. Such facilities may include, but are not limited to campgrounds, recreational camps, hotels and destination resorts, ball courts and ball fields, skeet clubs and facilities, hunting and fishing clubs, and equestrian facilities.

Discussion

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?

No Impact: The Project will not result in additional residents, so the Project will not increase the use of existing parkland or create a need for additional parkland. There is *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?

No Impact: No parkland or recreational facilities are associated with the Project. The Project will not result in additional residents and will not create a need for additional parkland. There is *no impact.*

XVII. TRANSPORTATION

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☑	☐	☐	☐
b) Conflict or be inconsistent with the 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?	☐	☐	☐	☑

Environmental Setting

Vehicular Access: The primary vehicular access point for Sozinho Dairy #5 is located at 7205 Houston Avenue, on the northern side of the Project Site. This access point provides direct entry to the dairy facility and is used for the transportation of goods, materials, and livestock to and from the Site. The access is designed to accommodate large agricultural vehicles and ensures efficient movement of traffic associated with dairy operations.

Transportation Facilities: Transportation facilities near the proposed Project area include Houston Avenue, which connects to other significant local roads. Additionally, 7th Avenue and other agricultural access roads surround the dairy. These roads are designed to support the heavy machinery and transportation vehicles typically used in dairy and agricultural operations. The Site is also relatively close to larger transportation routes (Highways 198 and 43) that connect the agricultural area to the broader region, supporting logistics and supply chain activities vital to the dairy industry. The Kings County Association of Governments (KCAG) is the County's Regional Transportation Planning Agency and Metropolitan Planning Organization.

Regulatory Setting

CEQA Guidelines Section 15064.3, Subdivision (b): Criteria for Analyzing Transportation Impacts

(1) Land Use Projects. Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high-quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be considered to have a less than significant transportation impact.
(2) Transportation Projects. Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, a lead agency may tier from that analysis as provided in Section 15152.
(3) Qualitative Analysis. If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
(4) Methodology. A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

Kings County Improvement Standards: The Kings County Improvement Standards are developed and enforced by the Kings County Public Works Department to guide the development and maintenance of County Roads. The cross-section drawings in the County Improvement Standards dictate the development of roads within the county.

2035 Kings County General Plan: The 2035 Kings County General Plan *Circulation Element* establishes policies relating to transportation:

- C OBJECTIVE A1.3: Maintain an adequate Level of Service operation for County roadways and ensure proper maintenance occurs along critical routes for emergency response vehicles.

- *C Policy A1.3.1: Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.*
- *C Policy A1.3.2: Require proposed developments that have the potential to generate 100 peak hour trips or more to conduct a traffic impact study that follows the most recent methodology outlined in Caltrans Guide to the Preparation of Traffic Impact Studies.*

Discussion

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

Potentially Significant Impact: The Sozinho Dairy #5 Project is located in a rural unincorporated area of Kings County, where the transportation infrastructure primarily supports agricultural traffic. The Project's daily operations will generate truck trips for feed deliveries, manure transportation, milk hauling, and maintenance services. These additional trips have the potential to affect the Level of Service (LOS) on local rural roads and nearby intersections.

A Traffic Analysis Letter (Appendix E) was reviewed by the Kings County Association of Governments (KCAG), suggesting the Project is unlikely to lower the current LOS on key county roads. However, this analysis lacks a full Traffic Impact Study, therefore it is unknown what the potential impacts caused by the cumulative effects of increased truck traffic from dairy operations, especially given regional agricultural traffic trends and potential road deterioration.

The Project's proposed modifications, including the BIDA beds, calf hutches, and organic matter processing areas, could result in periodic increases in truck traffic. For instance, the BIDA beds will require biannual servicing, involving two trucks per day for 14 consecutive days to transport processed wood chips for land application. Although this impact is temporary, it could contribute to short-term congestion and increased wear on local rural roads. Additionally, while the relocation of feed storage areas on-site is expected to reduce some truck trips, other operational improvements, such as the addition of calf hutches, will require one additional service vehicle per day.

Since truck traffic for dairy operations, particularly for feed deliveries, manure hauling, and milk transport, has the potential to increase congestion and accelerate roadway wear, a more detailed evaluation may be necessary.

Given these uncertainties, further analysis is warranted to determine the Project's transportation impacts and whether mitigation measures—such as roadway improvements, traffic scheduling adjustments, or infrastructure upgrades—may be necessary. Until such an evaluation is completed, the Project could result in a Significant Impact on the local circulation system, requiring further assessment to ensure compliance with applicable transportation policies and

to determine the appropriate mitigation measures, if necessary. There is a *Potentially Significant Impact.*

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

Less than Significant Impact: Section 15064.3(b) establishes criteria for analyzing the transportation impacts of proposed Projects, as required under AB 734. Among the changes to the guidelines was the removal of vehicle delay and LOS as the sole basis of determining CEQA impacts. With the implementation of the adopted guidelines, transportation impacts will be evaluated based on a project's effect on VMT. This section states that "vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact."

A Technical Advisory was issued by the Governor's OPR in 2018 to guide the implementation of AB 734. The OPR TA states that small projects generating less than 110 daily trips are estimated to have minimal effect on VMT and are eligible to be screened out from a detailed VMT analysis. The TA letter confirms that the Sozinho Dairy #5 Project is not expected to increase the number of trips per day, keeping the VMT consistent with current levels. The Project does not exceed the thresholds that would require a detailed VMT analysis. Therefore, the Project is anticipated to have a *Less Than Significant* VMT impact and could be screened out from a detailed VMT analysis.

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)?

No Impact: The Project does not introduce new roadways or design features that could create traffic hazards. The existing access points and roadways, including Houston Avenue, are designed to handle the type of agricultural traffic generated by the dairy operations. The Project's design does not include any incompatible uses that would increase traffic hazards. Therefore, there is *No Impact.*

d) Would the Project result in inadequate emergency access?

No Impact: The primary vehicular access to the Sozinho Dairy #5 is via Houston Avenue, which is adequately sized and designed to accommodate emergency vehicles. The Project will comply with all relevant public works and fire code standards to ensure that emergency access remains unobstructed and fully functional. The only improvement proposed by the California High-Speed Rail Authority on the property is a planned Houston Avenue overpass. This structure will begin near the front of the facility along Houston Avenue and extend to cross over the proposed High-Speed Rail alignment, which runs perpendicular to the roadway approximately 1,000 feet west of the facility's boundary. When the High-Speed Rail improvements are constructed, facility access from Houston Avenue will be consolidated to a single entrance at the northeast corner of the milk barn, rather than the current configuration

with access points at both the northeast and northwest sides. As a result, the Project will have *No Impact* on emergency access.

XVIII. TRIBAL CULTURAL RESOURCES

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

Environmental Setting

Records Search: The SSJVIC conducted a Cultural Resources Records Search on April 22nd, 2024. SSJVIC staff researched historical USGS topographic maps, reports of previous cultural resource investigations, archaeological Site, and survey base maps, cultural resource records (DPR forms) as well as listings of the Historic Properties Directory of the Office of Historic Preservation, General Land Office Maps, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. The full report can be found in Appendix C.

The records search results indicate no cultural resources were previously recorded within the Project boundary or within a 0.5-mile search radius. According to the information within CHRIS' database, there are no recorded resources within the project area. There is one recorded

resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch. There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

Native American Outreach: A request to the NAHC for a SLF was sent to identify any known places of the religious, sacred activity or traditional use or gathering areas are present in or near the Project area. The NAHC responded on April 15th, 2024, with a letter, including contact information for local Native American tribal representatives who may have knowledge or interest in sharing information about resources in the Project area and surrounding area. The results of the SLF search were negative.

Each Native American representative listed was sent a nongovernmental outreach letter and a map notifying them of the Project and asking if they had any knowledge of the Project area or surrounding vicinity. The SLF results are in Appendix D.

Regulatory Setting

Historical Resources: Historical resources are defined by CEQA as resources that are listed in or eligible for the California Register of Historical Resources, resources that are listed in a local historical resource register, or resources that are otherwise determined to be historical under California Public Resources Code Section 21084.1 or California Code of Regulations Section 15064.5. Under these definitions, Historical Resources can include archaeological resources, Tribal cultural resources, and Paleontological Resources.

Archaeological Resources: As stated above, archaeological resources may be considered historical resources. If they do not meet the qualifications under the California Public Resources Code 21084.1 or California Code of Regulations Section 15064.5, they are instead determined to be "unique" as defined by the CEQA Statute Section 21083.2. A unique archaeological resource is an artifact, object, or site that: (1) contains information (for which there is a demonstrable public interest) needed to answer important scientific research questions; (2) has a special and particular quality, such as being the oldest of its type or the best available example of its type; or (3) is directly associated with a scientifically recognized important prehistoric or historical event or person.

Tribal Cultural Resource (TCR): Tribal Cultural Resources can include site features, places, cultural landscapes, sacred places, or objects which are of cultural value to a Tribe. It is either listed on or eligible for the CA Historic Register or a local historic register or determined by the lead agency to be treated as TCR.

Paleontological Resources: For this section, "paleontological resources" refers to the fossilized plant and animal remains of prehistoric species. Fossilized remains, such as bones, teeth,

shells, and leaves, are found in geologic deposits (i.e., rock formations). Paleontological resources generally include the geologic formations and localities in which the fossils are collected. Paleontological Resources are a limited scientific and educational resources valued for the information they yield about the history of the earth and its ecology.

Native American Reserve (NAR): This designation recognizes tribal trust and reservation lands managed by a Native American Tribe under the United States Department of the Interior's Bureau of Indian Affairs over which the County has no land use jurisdiction. The County encourages the adoption of tribal management plans for these areas that consider compatibility and impacts upon adjacent area facilities and plans.

National Historic Preservation Act: The National Historic Preservation Act was adopted in 1966 to preserve historical and archeological sites in the United States. The Act created the National Register of Historic Places, the list of National Historic Landmarks, and the State Historic Preservation offices.

Health and Safety Code, Section 7050.5: Section 7050.5 of the California Health and Safety Code requires that construction or excavation be stopped near discovered human remains until the county coroner can determine whether the remains are those of a Native American. If the remains are determined to be Native American, the coroner must contact the California NAHC. CEQA Guidelines (Public Resources Code Section 5097) specify the procedures to be followed in case of the discovery of human remains on non-Federal land. The disposition of Native American burials falls within the jurisdiction of the NAHC.

2035 Kings County General Plan:

- **RC GOAL I1:** ***Preserve significant historical and archaeological sites and structures that represent the ethnic, cultural, and economic groups that have lived and worked in Kings County.***
  - RC OBJECTIVE I1.1: Promote the rehabilitation or adaptation to new uses of historic sites and structures.
    - *RC Policy I1.1.2*: Direct proposed developments that may affect proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or other similarly purposed advisory body under the Kings County Parks and Recreation Advisory Commission for review and comment.
    - *RC Policy I1.1.3*: Encourage the protection of cultural and archaeological sites with potential for placement on the National Register of Historic Places and/or inclusion in the California Inventory of Historic Resources.
    - *RC Policy I1.1.4*: Refer applications that involve the removal, destruction, or alteration of proposed or designated historic sites or County landmarks to the Kings County Museum Advisory Committee or its successor for recommended mitigation measures.

- RC OBJECTIVE I1.2: Identify potential archaeological and historical resources and, where appropriate, protect such resources.
  - *RC Policy I1.2.1*: Participate in and support efforts to identify significant cultural and archaeological resources and protect those resources in accordance to Public Resources Code 5097.9 and 5097.993.
  - *RC Policy I1.2.2*: Continue to solicit input from local Native American communities in cases where development may result in disturbance to sites containing evidence of Native American Activity and/or to sites of cultural importance.
  - *RC Policy I1.2.3*: Address archaeological and cultural resources in accordance with the California Environmental Quality Act (CEQA) for discretionary land use applications.
  - *RC Policy I1.2.4*: The County will respectfully comply with Government Code §65352.3 (SB18) by conducting formal consultations with tribes as identified by the Native American Heritage Commission on all general plan and specific plan amendments.
  - *RC Policy I1.2.5*: The County will respectfully comply with Government Code §6254.(r) and 6254.10 by protecting confidential information concerning Native American cultural resources. For example, adopting internal procedures such as keeping confidential archaeological reports away from public view or discussion in public meetings.
  - *RC Policy I1.2.6*: The County shall work in good faith with the Santa Rosa Rancheria Tachi Yokut Tribe ("Tribe"), the developer and other parties if the Tribe requests return of certain Native American artifacts from private development projects (e.g., for interpretive or educational value). The developer is expected to act in good faith when considering the Tribe's request for artifacts. Artifacts not desired by the Tribe shall be placed in a qualified repository as established by the California State Historical Resources Commission (see Guidelines for the Curation of Archaeological Collections, May 1993). If no facility is available, then all artifacts shall be donated to the Tribe.

Discussion

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

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

Less Than Significant Impact with Mitigation Incorporation: The Sozinho Dairy #5 Project Site has been reviewed through a cultural resources records search conducted by the Southern San Joaquin Valley Information Center (CHRIS). The search indicated that there are no

previously recorded tribal cultural resources listed or eligible for listing in the California Register of Historical Resources within the Project area or within a half-mile radius.

Additionally, a Sacred Lands File (SLF) search by the NAHC returned negative results, indicating no known sacred sites within the Project area. However, the absence of documented resources does not preclude the possibility of encountering undocumented resources during ground-disturbing activities.

To ensure that any potential tribal cultural resources are protected, Mitigation Measures CUL-1 and CUL-2 will be implemented, requiring that construction activities cease if any unknown resources are encountered. A qualified historical resources specialist will assess the significance of the find and recommend appropriate measures. These steps will ensure that any impacts on tribal cultural resources are mitigated to a *Less Than Significant Level with Mitigation Incorporation.*

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 with Mitigation Incorporation: Although no tribal cultural resources have been identified within the Project Site, there is a possibility that unanticipated resources could be discovered during construction. To address this, Mitigation Measures CUL-2 and CUL-3 will be implemented, requiring that if human remains are discovered, all work must halt until the County Coroner and, if applicable, the NAHC are notified to ensure proper handling of the remains according to state law.

Furthermore, Mitigation Measure CUL-1 will require a pre-construction cultural survey by a qualified professional to identify any potential resources before any ground disturbance. These measures will ensure that any impacts on significant tribal cultural resources are mitigated to a *Less Than Significant Level with Mitigation Incorporation.*

XIX. UTILITIES AND SERVICE SYSTEMS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relation 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?	☐	☐	☐	☑

Environmental Setting

Wastewater: The Sozinho Dairy #5 Project, located in an unincorporated area of Kings County, is not connected to municipal sewer services and instead relies on an advanced wastewater management system tailored for dairy operations.

The facility proposes a comprehensive wastewater treatment system, including BIDA beds, wastewater retention ponds, and mechanical separators. The existing retention ponds serve as primary storage and treatment facilities for process water generated by dairy operations, including flush water from freestall barns and cleaning water from the milk barn. These ponds maintain a minimum five-foot separation from groundwater, as required by regulatory

standards, and have adequate capacity to handle wastewater from the facility, including stormwater runoff.

A key upgrade in the Project is the integration of BIDA beds, which utilize vermifiltration—a process that combines wood chips, microbial activity, and earthworms—to treat wastewater naturally. This system removes contaminants and enhances water quality before reuse in irrigation and land application. Additionally, the facility will incorporate mechanical separators to filter solid waste from the liquid stream, further optimizing wastewater treatment efficiency.

To prevent stormwater contamination, the wastewater management system is integrated with the Site's drainage infrastructure, ensuring that all runoff is directed toward the wastewater treatment system rather than flowing into nearby agricultural lands or waterways.

The facility's wastewater management practices comply with local and state regulations, including those set by the RWQCB and the SJVAPCD. These measures reduce the environmental impact of dairy operations while ensuring compliance with groundwater protection and wastewater reuse standards.

Solid Waste: Solid waste from Sozinho Dairy #5 includes manure, organic matter from process water treatment, and general operational waste. The organic waste generated by dairy operations is managed through a structured process that includes:

- A 200,000 ft² manure processing area where manure is separated and prepared for land application.
- A 40,000 ft² post-manure organic matter processing area, where worms are introduced to enhance nutrient availability and soil benefits.
- A 150,000 ft² post-BIDA bed organic matter processing area for handling, storing, and drying material removed from the BIDA beds before land application.
- A 30,000 ft² area used for screening material from the organic matter areas into smaller particle sizes for various types of land application.

All solid manure and organic matter are either land-applied as organic fertilizer on associated cropland or stored and processed for future use. Manure storage areas are graded to prevent runoff and ensure proper drainage to wastewater retention ponds.

General solid waste, including non-organic waste, is managed through the Kings Waste and Recycling Authority (KWRA), which oversees collection, recycling, and disposal services for Kings County and its incorporated cities. Waste from the facility is transported to the KWRA Material Recovery Facility and Transfer Station, where recyclable materials are diverted from landfills. The remaining non-recyclable waste is sent to the Kettleman Hills Facility, which operates municipal and hazardous waste landfills.

These practices ensure compliance with local solid waste regulations while promoting sustainability through recycling and organic material reuse.

Water: The Sozinho Dairy #5 facility sources its water primarily from on-site wells to support livestock hydration, cleaning, irrigation, and wastewater treatment. The facility adheres to a water conservation strategy, which includes the use of recycled water from the BIDA beds and wastewater retention ponds for irrigation and flushing operations, reducing dependence on fresh water. This recycled water is carefully monitored to ensure it meets quality standards before being applied to crops or other uses on-site.

Additionally, the stormwater management system is integrated with the water facilities, allowing rainwater to be collected, treated, and reused where possible. This not only helps conserve water but also minimizes runoff that could impact surrounding agricultural lands.

The geotechnical and groundwater evaluations conducted for the Project confirm that shallow groundwater was not encountered in soil borings drilled to a depth of 21.5 feet below ground surface. The California Department of Water Resources indicates the depth to regional groundwater at the Project Site is greater than 50 feet bgs, well below any facility operations. Additionally, all irrigation wells meet Kings County well construction standards, with proper seals and setbacks to prevent contamination.

Stormwater: The stormwater management system at Sozinho Dairy #5 is designed to effectively control runoff, prevent erosion, and minimize environmental impact. The Site has been strategically graded to ensure that surface water is directed away from operational areas and toward designated collection and treatment basins. This helps prevent water accumulation around structures and operational zones, reducing the risk of standing water and potential contamination.

Manure storage and process water areas are carefully designed to ensure that any stormwater runoff is collected within the wastewater retention ponds rather than flowing into surrounding agricultural lands. The facility also incorporates erosion control measures, such as rock aprons and stabilized drainage channels, to prevent soil displacement during heavy rainfall events. These features enhance the stability of the Site and protect surrounding areas from potential sediment runoff.

Once collected, stormwater is directed to retention basins, where it undergoes controlled treatment before either being reused or discharged in compliance with regulatory standards. The underlying soil composition, primarily Kimberlina fine sandy loam and Wasco sandy loam, provides effective drainage while minimizing the risk of stormwater infiltration into groundwater. Additionally, the facility maintains compliance with local and state stormwater management regulations, including those established by the DWR and the SJVAPCD. By implementing these stormwater management strategies, Sozinho Dairy #5 ensures that its operations do not negatively impact surrounding water resources or agricultural land.

Electric Power and Natural Gas: The proposed Project will not require new electrical or natural gas services.

Regulatory Setting

CalRecycle: California Code of Regulations, Title 14, Natural Resources – Division 7 contains all current CalRecycle regulations regarding nonhazardous waste management in the state. These regulations include standards for the handling of solid waste, standards for the handling of compostable materials, design standards for disposal facilities, and disposal standards for specific types of waste.

Central Valley RWQCB: The Central Valley RWQCB requires a SWPPP for projects disturbing more than one acre of the total land area. Because the Project is more than one acre, a SWPPP to manage stormwater generated during construction will be required. The Central Valley RWQCB regulates Wastewater Discharges to Land by establishing thresholds for discharged pollutants and implementing monitoring programs to evaluate program compliance. This program regulates approximately 1500 dischargers in the region.

The Central Valley RWQCB is also responsible for implementing the Federal program, the NPDES. The NPDES Program is the Federal permitting program that regulates the discharges of pollutants to the surface waters of the U.S. Under this program, an NPDES permit is required to discharge pollutants into the Waters of the U.S. There are 350 permitted facilities within the Central Valley Region.

2035 Kings County General Plan: The 2035 General Plan *Resource Conservation Element* includes the following goals, objectives, and policies which would reduce potential impacts on water supply and utility infrastructure:

- ***RC GOAL A1: Beneficially use, efficiently manage, and protect water resources while developing strategies to capture additional water sources that may become available to ensure long term sustainable water supplies for the region.***
  - RC OBJECTIVE A1.1: Maintain and Protect Existing Water Supplies
    - *RC Policy A1.1.2*: Review new discretionary development proposals, including new or expanded uses within agricultural zone districts, to ensure that there are adequate water supplies to accommodate such uses. Projects should provide evidence of adequate and sustainable water availability prior to approval of a tentative map or other land use approval.
  - RC OBJECTIVE A1.2: Conserve and reuse water to provide for the efficient use of water resources.

- *RC Policy A1.2.2*: Require the use of low water consuming, drought-tolerant and native landscaping and other water conserving techniques, such as mulching, drip irrigation and moisture sensors, for new development.
- *RC Policy A1.2.3*: Continue to support efforts and educational programs intended to reduce water consumption on agricultural lands and enhance groundwater recharge.
- *RC Policy A1.2.4*: Encourage and support the development of recycled water systems in Kings County.
- *RC Policy A1.2.5*: Encourage and support the safe use of gray water for landscaping, agriculture, recreation and open space areas.

❖ ***RC GOAL C1: Encourage the conservation of soil resources that are critical to the long-term protection and sustainability of the County's agricultural productivity and economy.***

❖ ***RC GOAL C2: Encourage soil conservation and management practices that maintain the productivity of prime soils throughout the County.***

➢ RC OBJECTIVE C2.2: Ensure that land use decisions are compatible with the control of soil erosion and the maintenance of soil quality.

- *RC Policy C2.2.2*: Continue to require the application of construction related erosion control measures, including Stormwater Pollution Protection Plans (SWPPP) for all new construction.

Discussion

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

Less than Significant Impact: The Sozinho Dairy #5 Project, located in an unincorporated area of Kings County, does not have access to municipal sewer services and is designed to manage all wastewater, stormwater, and utility needs on-site.

The Project includes comprehensive wastewater treatment infrastructure, including wastewater retention ponds, mechanical separators, and BIDA beds. The BIDA system uses vermifiltration, combining wood chips, microbes, and earthworms to remove contaminants from process water before reuse in irrigation and land application. The wastewater retention ponds have adequate capacity to handle all facility wastewater, including runoff from rainfall events, in compliance with RWQCB standards.

Stormwater drainage is integrated with the wastewater system, ensuring proper collection and treatment before discharge or reuse. The Site's topography directs surface runoff toward designated collection areas, preventing erosion and minimizing uncontrolled runoff. Erosion

control measures, including rock aprons and stabilized drainage channels, further ensure stormwater is properly managed.

The Project does not require new or expanded electrical or natural gas services, as existing infrastructure is sufficient to support all operational needs, including wastewater treatment, animal housing, and feed storage operations. Given that all wastewater, stormwater, and utility needs are handled within the Project Site, without requiring off-site facility expansions, the potential environmental effects from construction or relocation of utilities are minimal, resulting in a *Less than Significant Impact.*

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?

Less than Significant Impact: The Sozinho Dairy #5 Project sources water from private on-site wells, which provide a reliable and sufficient supply to support livestock hydration, cleaning, irrigation, and wastewater treatment needs.

A key component of the Project's water conservation strategy is the reuse of treated wastewater from the BIDA system and retention ponds for irrigation and facility operations, reducing reliance on groundwater extraction. This recycling process ensures that water use is efficient and sustainable, aligning with state water conservation goals and agronomic best practices.

The geotechnical and groundwater evaluations conducted for the Project confirm that shallow groundwater was not encountered in soil borings drilled to a depth of 21.5 feet below ground surface. The California Department of Water Resources indicates the depth to regional groundwater at the Project Site is greater than 50 feet bgs, and all facility wells meet Kings County well construction standards, ensuring protection against contamination. The Project's water use is relatively low compared to other agricultural operations in the area, and existing water supplies are sufficient to meet demand, even under dry and multiple dry year scenarios.

Current water usage at the facility is primarily driven by livestock needs, facility cleaning, and irrigation, sourced from on-site wells. While specific metered data for the facility is unknown, the BIDA beds are designed to treat operational wastewater and do not generate additional water. By harnessing the digestive activity of worms and microbes, the system removes up to 99% of wastewater contaminants within four hours, producing high-quality water. This treated water can then be reused for agricultural irrigation, facility operations, or safely applied over fewer acres, helping to meet or exceed nutrient management goals. As a result, the Project supports cleaner water usage onsite, reduces overall water demand, and aligns with SIGMA goals by enabling increased water reuse and more efficient irrigation practices.

In comparison to other agricultural operations in Kings County and the San Joaquin Valley, the dairy's water demand is moderate. For example, almond orchards, a prevalent crop in the region, require approximately 3.5-4 acre-feet of water per acre annually (equivalent to about 1.1-1.3 million gallons per acre), according to data from the California Water Impact Network. Dairy operations like Sozinho #5, focused on animal housing and feed storage rather than extensive cropping, typically consume less direct water per acre than nut or field crops.

The Project is anticipated to result in a net decrease in water usage, due to the BIDA system's efficient wastewater treatment and reuse capabilities. The BIDA beds process existing wastewater volumes (generated from cleaning and animal operations) without adding new water inputs. This reduction offsets any minor increases from new calf hutches or operational adjustments, leading to overall lower groundwater extraction compared to baseline conditions.

Existing water supplies are deemed sufficient based on several factors: the BIDA system's reuse minimizes net demand, enhancing sustainability during dry and multiple dry years when groundwater reliance increases across the Valley, and the Project's modifications do not expand herd size or introduce water-intensive activities. These elements ensure that on-site wells can meet demands without straining regional resources. Therefore, the Project's impact on water supply availability is *Less than Significant.*

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

No Impact: The Project manages all wastewater on-site through a dedicated system, eliminating reliance on external treatment providers. The facility generates wastewater primarily from existing operations, with no additional process wastewater from proposed modifications. The BIDA beds treat this operational water, while extra wastewater arises only from rainfall on the beds, contaminated by manure, and is redirected to the facility's retention ponds. Calculations confirm the ponds' capacity suffices for the non-irrigation period (November 1 to February 28, 120 days), accommodating typical precipitation multiplied by a factor of 1.5, plus runoff from the largest 25-year, 24-hour storm event. This ensures all wastewater is effectively handled without off-site treatment needs. Since the Project does not require municipal or third-party wastewater treatment services, there is *No Impact*.

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?

Less than Significant Impact: The primary solid waste generated by the Sozinho Dairy #5 Project consists of manure and organic matter from dairy operations and wastewater treatment.

Manure management is a core component of the facility's operations, with all manure either land-applied as organic fertilizer, processed for nutrient recycling, or stored in designated areas. The Project includes three separate organic matter processing areas, where manure and BIDA bed materials are dried and improved before land application, ensuring compliance with nutrient management regulations.

Non-organic solid waste, including packaging, general refuse, and operational waste, will be handled by the KWRA. The KWRA operates the Material Recovery Facility and Transfer Station in Hanford, where recyclable materials are diverted from landfills, and remaining waste is transported to the Kettleman Hills Facility.

Because the majority of waste is reused on-site and any additional solid waste falls within local disposal capacity, the Project will not exceed state or local solid waste infrastructure limits. The facility's compliance with waste management regulations ensures that its impact on solid waste infrastructure remains *Less than Significant.*

e) Would the Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact: The Sozinho Dairy #5 Project is designed to fully comply with all applicable federal, state, and local solid waste regulations, ensuring proper management and disposal of all waste materials.

Solid waste management at the facility adheres to the California Integrated Waste Management Act of 1989 (AB 939) and the Kings County Integrated Waste Management Plan, which promote recycling and waste reduction. The Project's manure and organic matter recycling operations align with state-mandated sustainability goals, while non-organic waste is processed through KWRA in compliance with local regulations.

Because the facility's waste management practices are in full compliance with all relevant statutes and regulatory requirements, there is *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:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☑	☐
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

Environmental Setting

There are no State Responsibility Areas (SRAs) within the vicinity of the Project Site, and the Project Site is not categorized as a "Moderate," "High," or "Very High" Fire Hazard Severity Zone (FHSZ) by CalFire. This CEQA topic only applies to areas within an SRA or a Very High FHSZ.

Regulatory Setting

Fire Hazard Severity Zones: Geographical areas designated under California Public Resources Codes Sections 4201 through 4204 and classified as Very High, High, or Moderate in State Responsibility Areas or as Local Agency Very High Fire Hazard Severity Zones designated under California Government Code, Sections 51175 through 51189.

Kings County Emergency Operations Plan (2015): The Kings County Emergency Operations Plan establishes goals, priorities, and strategies in the event of an emergency. The goals and priorities are outlined below.

- 2.1 Goals, Priorities, and Strategies: During the response phase, emergency managers set goals, prioritize actions, and outline operational strategies. This plan provides a broad overview of those goals, priorities, and strategies and describes what should occur during each step, when, and at whose direction.
- 2.1.1 Operational Goals: During the response phase, the agencies that are charged with responsibilities in this plan should focus on the following five goals:
  - Mitigate hazards.
  - Meet basic human needs.
  - Address needs of people with disabilities and others with access and functional needs.
  - Restore essential services.
  - Support community and economic recovery.
- 2.1.2 Operational Priorities: Operational priorities govern resource allocation and the response strategies for the Kings County and its political subdivisions during an emergency. Below are operational priorities addressed in this plan.
  - Save Lives – The preservation of life is the top priority of emergency managers and first responders, and takes precedence over all other considerations.
  - Protect Health and Safety – Measures should be taken to mitigate the impact of the emergency on public health and safety.
  - Protect Property – All feasible efforts must be made to protect public and private property and resources, including critical infrastructure, from damage during and after an emergency.
  - Preserve the Environment – All possible efforts must be made to preserve California's environment and protect it from damage during an emergency.

2035 Kings County General Plan: The 2035 General Plan Health and Safety *Element* includes the following policies which would reduce potential impacts from wildfires:

- *HS Policy C2.2.2*: Development proposals and code revisions shall be referred to the County Fire Department for review and comment.

Discussion

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?

No Impact: The Project would not substantially impair an adopted emergency response or evacuation plan. The Project will be reviewed by the Kings County Fire Department to ensure that the Project does not impair emergency response or emergency evacuation. The Site is also not located within an SRA or a Very High FHSZ. There is *No Impact.*

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?

No Impact: The Project is located on a flat area of agricultural land at little risk of fire. The proposed Project Site is also not located within an SRA or a Very High FHSZ. There is *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?

Less than Significant Impact: The Project's construction involves the construction of wastewater processing beds and the necessary infrastructure for wastewater management. All improvements would be subject to County standards and Fire Marshal approval. The proposed Project would not exacerbate fire risk, and the impact would be *Less than Significant.*

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire instability, or drainage changes?

No Impact: The Project Site is not located in an area designated as a Fire Hazard Severity Zone and the lands associated with the Project Site are relatively flat. Therefore, the Project would not be susceptible to downslope or downstream flooding or landslides because of post-fire instability or drainage changes. There is *No Impact.*

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less than Significant Impact	No Impact
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☑	☐	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☑	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☑	☐	☐	☐

Discussion

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, 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?

Potentially Significant Impact: This Initial Study found the Project could significantly impact Air Quality, Biological Resources, Historical/Cultural Resources, Energy Resources, Geological & Soils Resources, Greenhouse Gas Emissions, Hazards & Hazardous Materials, Transportation, Tribal Cultural Resources, and Hydrology & Water Quality Resources. However, implementing

the identified mitigation measures for each respective section would help reduce some of the impacts to less than significant. Those sections that cannot be reduced to a less than significant impact with mitigation incorporation will be analyzed in the Project's EIR as they may cause a *Potentially Significant Impact*.

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: CEQA Guidelines Section 15064(h) states that a Lead Agency shall consider whether the cumulative impact of a Project is significant and whether the effects of the Project are cumulatively considerable. The assessment of the significance of the cumulative effects of a Project must, therefore, be conducted in connection with the effects of past Projects, other current Projects, and probable future Projects. Due to the nature of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The proposed Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., an increase in population could lead to an increased need for housing, an increase in traffic, air pollutants, etc). Impacts would be *Less Than Significant*.

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

Potentially Significant Impact: The Initial Study identified multiple environmental resource areas where the Project could result in potentially significant impacts on human beings unless specific mitigation measures are implemented. These include:

Air Quality: The Project would generate odors and air pollutants during operation, particularly from the process water treatment system and manure handling. Mitigation Measure AIR-1 requires implementation of an odor management plan, including regular tilling and drainage maintenance of BIDA beds, to reduce potential odor emissions to a less than significant level.

Energy and Greenhouse Gas Emissions: The Project could result in increased energy consumption and GHG emissions through expanded operational infrastructure. However, the application of Best Performance Standards and improved wastewater treatment using BIDA beds is expected to offset these increases. Still, mitigation measures were recommended to minimize GHG output and ensure energy efficiency.

Hydrology and Water Quality: Construction and operation could result in water quality degradation due to stormwater runoff or improper wastewater handling. Mitigation Measures HYD-1 through HYD-3 require submission of a Notice of Intent, development of a Storm Water

Pollution Prevention Plan (SWPPP), and a long-term Development Maintenance Manual to prevent water contamination.

Transportation: While minimal increases in vehicle trips are expected, the Initial Study noted that additional service and delivery vehicles could contribute to localized traffic and safety concerns. Mitigation included operational planning and route adjustments to reduce transportation impacts to acceptable levels.

Based on the above findings, the Project has the potential to cause substantial adverse effects on human beings in the absence of mitigation. However, with implementation of the identified mitigation measures across the affected environmental categories, these impacts can be reduced to less-than-significant levels, while others require additional analysis. Therefore, this checklist item is appropriately categorized as *Potentially Significant Impact.*

XXII. MITIGATION MONITORING AND REPORTING PROGRAM

As required by Public Resources Code Section 21081.6, subd. (a)(1), a Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the Project to monitor the implementation of the mitigation measures that have been adopted for the Project. This Mitigation Monitoring and Reporting Program (MMRP) has been created based upon the findings of the Initial Study (IS) for the Sozinho Dairy #5 Project in the Kings County.

The first column of the table identifies the mitigation measure. The second column names the party responsible for carrying out the required action. The third column, "Timing of Mitigation Measure" identifies the time the mitigation measure should be initiated. The fourth column, "Responsible Party for Monitoring," names the party ensuring that the mitigation measure is implemented. The last column will be used by the County to ensure that the individual mitigation measures have been monitored.

Mitigation Measure	Responsible Party for Implementation	Implementation Timing	Responsible Party for Monitoring	Verification
Mitigation Measure AIR-1 (Odor Management). To minimize odor impacts from the Project, the Applicant shall implement an odor management plan. The plan will incorporate several odor management strategies. These strategies will include regularly tilling the BIDA beds to prevent stagnation, reducing the potential for odor emissions. Additionally, the drainage channels associated with the BIDA beds shall be routinely maintained to ensure proper drainage and prevent the accumulation of odorous materials. The Applicant shall develop and adhere to a maintenance schedule for tilling and drainage channel upkeep, with records of these activities maintained and available for review by the Kings County Community Development Agency and the San Joaquin Valley Air Pollution Control District to ensure compliance.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-2 (Dust Control During Construction). To minimize construction-related air quality impacts, the Applicant shall implement a Dust Control Plan in accordance with San Joaquin Valley Air Pollution Control District (SJVAPCD) Regulation VIII. This plan shall include measures such as regular watering of exposed soils, stabilizing unpaved roads, limiting vehicle speeds, and covering material stockpiles. The Applicant shall ensure these controls are applied throughout the construction phase to reduce dust and exhaust emissions, with documentation of implementation maintained for review by relevant regulatory agencies.	Project Applicant	Prior to the Start of Project Construction	Kings County	
Mitigation Measure AIR-3 (Wastewater Processing Bed Maintenance). To minimize operational emissions from the wastewater processing beds, the Applicant shall conduct regular maintenance of the BIDA beds to prevent stagnation and odor release. This shall include adherence to a vermifiltration design that improves wastewater quality and reduces volatile organic compound (VOC) emissions. The Applicant shall develop a maintenance protocol, with records available for inspection by the San Joaquin Valley Air Pollution Control District to verify compliance.	Project Applicant	During Project Operation	Kings County	

Mitigation Measure AIR-4 (Silage Management). To minimize odors and VOC emissions from silage storage, the Applicant shall cover silage piles with tarps or other impermeable materials. Regular monitoring and maintenance of silage piles shall be performed to prevent spoilage and anaerobic conditions that could exacerbate odors. The Applicant shall establish a schedule for these activities, ensuring records are kept and accessible for review by regulatory authorities.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-5 (Feed Storage Dust Suppression). To minimize fugitive dust emissions from feed storage areas, the Applicant shall utilize enclosed or covered structures where feasible. Dust suppression techniques, such as misting systems or windbreaks, shall be employed during material handling. The Applicant shall implement these measures in alignment with SJVAPCD-recommended best management practices for agricultural operations, with compliance documentation maintained.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-6 (Agricultural Best Management Practices). To reduce overall emissions from silage and feed activities, the Applicant shall adhere to SJVAPCD-recommended best management practices, including proper storage and handling protocols. This shall encompass strategies to mitigate odors, VOCs, and particulate matter, with a focus on the proximity of storage areas to sensitive receptors. The Applicant shall prepare a plan outlining these practices, subject to periodic review by the San Joaquin Valley Air Pollution Control District.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-7 (Enhanced Waste Management for Additional Improvements). To address emissions from expanded dairy operations or waste management systems, the Applicant shall treat wastewater through vermifiltration-based BIDA beds to reduce VOC and ammonia emissions compared to traditional systems. Regular maintenance of these beds shall be conducted to prevent stagnation and odor release, with a documented schedule ensuring ongoing compliance.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-8 (Emission Control Technologies). To capture odorous compounds and ammonia from animal housing or waste management systems, the Applicant shall incorporate technologies such as biofilters or scrubbers where applicable. These controls shall be integrated into project improvements, aligning with SJVAPCD guidelines, and the Applicant shall maintain records of installation and operation for regulatory verification.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure AIR-9 (Operational Controls for Vehicles and Equipment). To minimize emissions from expanded operational activities, the Applicant shall limit idling times for vehicles and equipment, utilize low-emission machinery where feasible, and implement dust suppression measures in expanded areas. These controls shall be part of a broader operational plan, with adherence documented and available for review by the San Joaquin Valley Air Pollution Control District to ensure air quality impacts remain less than significant.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure BIO-1.1 (Temporal Avoidance). In order to avoid any potential impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside of this species' nesting season, typically defined as March 1-September 15.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	

Mitigation Measure BIO-1.2 (Preconstruction Surveys). If construction activities must occur between March 1 and September 15, then within 10 days prior to the start of construction, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ¼ mile of the work area. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	
Mitigation Measure BIO-1.3 (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	
Mitigation Measure BIO-2.1 (Take Avoidance Survey). A take avoidance survey for burrowing owls shall be conducted by a qualified biologist no less than 14 days prior to the start of construction. This take avoidance survey shall be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area shall include all potential roosting and nesting habitat on and within 200 meters of project impact areas, where accessible.	Project Applicant	Prior to the start of construction	Kings County	
Mitigation Measure BIO-2.2 (Avoidance of Active Nests). If pre-construction surveys are undertaken during the breeding season (February 1 through August 31) and active nest burrows are located within or near construction zones, a construction-free buffer of 250 feet shall be established around all active owl nests. The buffer areas shall be enclosed with temporary fencing or flagging, and construction equipment and workers shall not enter the enclosed setback areas. Buffers shall remain in place for the duration of the breeding season. After the breeding season (i.e. once all young have left the nest), passive relocation of any remaining owls may take place as described below.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	
Mitigation Measure BIO-2.3 (Passive Relocation of Resident Owls). During the nonbreeding season (September 1-January 31), resident owls occupying burrows in project impact areas may either be avoided, or passively relocated to alternative habitat. If the applicant chooses to avoid active owl burrows within the impact area during the nonbreeding season, a 50-meter disturbance-free buffer shall be established around these burrows. The buffers shall be enclosed with temporary fencing, and shall remain in place until a qualified biologist determines that the burrows are no longer active. If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	
Mitigation Measure BIO 3.1 (Avoidance). In order to avoid impacts to native nesting birds, including the tricolored blackbird, the project will be constructed, if feasible, outside the nesting season, or between September 1st and January 31st.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	

Mitigation Measure BIO 3.2 (Preconstruction Surveys). If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and native bird nests within 15 days prior to the start of these activities. The survey will include the proposed work area(s) for that particular phase of work and surrounding lands within 250 feet, where accessible, for all nesting birds. If no active nests are found within the survey area, no further mitigation is required.	Project Applicant	Prior to the start of construction	Kings County	
Mitigation Measure BIO 3.3 (Establish Buffers). Should any active nests be discovered in or near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	
Mitigation Measure CUL-1: Pre-Construction Cultural Survey Requirement. Prior to any construction activities, a qualified professional consultant must conduct a field survey of the project site to determine if any cultural resources are present. The results of this survey must be submitted to the Kings County Community Development Agency for review. If any cultural resources are identified, further consultation with the appropriate authorities, including the Native American Heritage Commission, may be necessary to ensure proper management and preservation of these resources. No ground-disturbing activities shall commence until the survey has been completed and the results have been reviewed by the County.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	

Mitigation Measure CUL-2: Protection of Cultural Resources. In order to avoid the potential for impacts to historic and prehistoric archaeological resources, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project: • Cultural Resources Alert on Project Plans: The project proponent shall note on any plans that require ground disturbing activities that there is a potential for exposing buried cultural resources. • Pre-Construction Briefing: The project proponent shall retain Santa Rosa Rancheria Cultural Staff to provide a pre-construction Cultural Sensitivity Training to construction staff regarding the discovery of cultural resources and the potential for discovery during ground disturbing activities, which will include information on potential cultural material finds and, on the procedures, to be enacted if resources are found. • Stop Work Near any Discovered Cultural Resources: The project proponent shall retain a professional archaeologist on an "on-call" basis during ground disturbing construction for the project to review, identify and evaluate cultural resources that may be inadvertently exposed during construction. Should previously unidentified cultural resources be discovered during construction of the project, the project proponent shall cease work within 100 feet of the resources, and Kings County Community Development Agency (CDA) shall be notified immediately. The archaeologist shall review and evaluate any discoveries to determine if they are historical resource(s) and/or unique archaeological resources under CEQA. • Mitigation for Discovered Cultural Resources: If the professional archaeologist determines that any cultural resources exposed during construction constitute a historical resource and/or unique archaeological resource, he/she shall notify the project proponent and other appropriate parties of the evaluation and recommended mitigation measures to mitigate the impact to a less-than- significant level. Mitigation measures may include avoidance, preservation in-place, recordation, additional archaeological testing, and data recovery, among other options. Treatment of any significant cultural resources shall be undertaken with the approval of the Kings County CDA. The archaeologist shall document the resources using DPR 523 forms and file said forms with the California Historical Resources Information System, Southern San Joaquin Valley Information Center. The resources shall be photo-documented and collected by the archaeologist for submittal to the Santa Rosa Rancheria's Cultural and Historical Preservation Department. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. Further grading or sitework within the area of discovery shall not be allowed until the preceding steps have been taken. • Native American Monitoring: Prior to any ground disturbance, the project proponent shall offer the Santa Rosa Rancheria Tachi Yokut Tribe the opportunity to provide a Native American Monitor during ground disturbing activities. Tribal participation would be dependent upon the availability and interest of the Tribe. • Disposition of Cultural Resources: Upon coordination with the Kings County Community Development Agency, any prehistoric archaeological artifacts recovered shall be donated to an appropriate Tribal custodian or a qualified scientific institution where they would be afforded applicable cultural resources laws and guidelines.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	

Mitigation Measure CUL-3: Protection of Buried Human Remains. In order to avoid the potential for impacts to buried human remains, the following measures shall be implemented, as necessary, in conjunction with the construction of the Project: • Pursuant to State Health and Safety Code Section 7050.5(e) and Public Resources Code Section 5097.98, if human bone or bone of unknown origin is found at any time during on- or off-site construction, all work shall stop within 25 feet of the discovery and the Kings County Coroner shall be notified immediately and the resource shall be protected in compliance with applicable state and federal laws. If the remains are determined to be Native American, the Coroner shall notify the California State Native American Heritage Commission (NAHC), who shall identify the person believed to be the Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98. The project proponent and MLD, with the assistance of the archaeologist, shall make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines Sec. 15064.5(d)). The agreed upon treatment shall address the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects. California Public Resources Code allows 48 hours for the MLD to make their wishes known to the landowner after being granted access to the site. If the MLD and the other parties do not agree on the reburial method, the project will follow Public Resources Code Section 5097.98(b) which states that "…. the landowner or his or her authorized representative shall reinter the human remains and items associated with Native American burials with appropriate dignity on the property in a location not subject to further subsurface disturbance." • Any findings shall be submitted by the archaeologist in a professional report submitted to the project applicant, the MLD, the Kings County Community Development Agency, and the California Historical Resources Information System, Southern San Joaquin Valley Information Center.	Project Applicant	Prior to the start of construction and ongoing during construction	Kings County	

Mitigation Measure HAZ-1: Hazardous Materials Business Plan. To ensure compliance with applicable safety regulations and minimize risks associated with the handling, storage, and use of hazardous materials at the Sozinho Dairy #5 facility, the applicant shall prepare and file a Hazardous Materials Business Plan (HMBP), prior to the initiation of any construction or operational activities involving hazardous materials. The HMBP shall include the following components: • Inventory of Hazardous Materials: A detailed inventory of all hazardous materials to be used, stored, or disposed of on-site, including quantities, storage locations, and handling procedures. • Emergency Response Plan: Procedures for responding to spills, leaks, or other incidents involving hazardous materials, including notification protocols, containment measures, and cleanup procedures. • Employee Training: A training program for all employees handling hazardous materials, ensuring they are informed of proper handling, storage, and emergency response procedures in accordance with state and federal regulations. • Site Map: A detailed site map indicating the locations of hazardous materials storage, handling areas, and emergency response equipment, such as spill kits and fire extinguishers. The applicant shall submit the HMBP for review and approval by the Kings County Environmental Health Services Division prior to the issuance of any construction or grading permits. The plan shall be updated annually or as required by regulatory authorities, and the applicant shall maintain records of compliance, including inspection reports and employee training logs, for review by the County upon request. Implementation of the HMBP will reduce potential impacts related to hazardous materials to a less than significant level by ensuring safe handling, storage, and emergency response procedures are in place.	Project Applicant	During Project Operation	Kings County	
Mitigation Measure HYD-1: Notice of Intent. Before the issuance of any construction/grading permit and/or the commencement of any clearing, grading, or excavation, the Applicant shall submit a Notice of Intent (NOI) for discharge from the Project Site to the California SWRCB Storm Water Permit Unit. • Before issuance of grading permits for Phase 1, the Applicant shall submit a copy of the NOI to the County. • The County shall review noticing documentation before the approval of the grading permit. County monitoring staff will inspect the Site during construction for compliance.	Project Applicant	Prior to the start of construction	Kings County	

Mitigation Measure HYD-2: Stormwater Pollution Prevention Plan. The Applicant shall require the building contractor to prepare and submit a Storm Water Pollution Prevention Plan (SWPPP) to the County 45 days before the start of work for approval. The contractor is responsible for understanding the State General Permit and instituting the SWPPP during construction. An SWPPP for Site construction shall be developed before the initiation of grading and implemented for all construction activity on the Project Site in excess of one (1) acre, or where the area of disturbance is less than one acre but is part of the Project's plan of development that in total disturbs one or more acres. The SWPPP shall identify potential pollutant sources that may affect the quality of discharges to stormwater and shall include specific BMPs to control material discharge from the Site. The following BMP methods shall include, but would not be limited to: • Dust control measures will be implemented to ensure the success of all onsite activities to control fugitive dust; • A routine monitoring plan will be implemented to ensure the success of all onsite erosion and sedimentation control measures; • Provisional retention basins, straw bales, erosion control blankets, mulching, silt fencing, sandbagging, and soil stabilizers will be used; • Soil stockpiles and graded slopes will be covered after two weeks of inactivity and 24 hours before and during extreme weather conditions; and, • BMPs will be strictly followed to prevent spills and discharges of pollutants on Site, such as material storage, trash disposal, construction entrances, etc.	Project Applicant	Prior to the start of construction	Kings County	
Mitigation Measure HYD-3: Development Maintenance Manual. A Development Maintenance Manual for the Project shall include comprehensive procedures for maintenance and operations of any stormwater facilities to ensure long-term operation and maintenance of post-construction stormwater controls. The maintenance manual shall require that stormwater BMP devices be inspected, cleaned, and maintained following the manufacturer's maintenance conditions. The manual shall require that devices be cleaned before the onset of the rainy season (i.e., mid-October) and immediately after the end of the rainy season (i.e., mid-May). The manual shall also require that all devices be checked after major storm events. The Development Maintenance Manual shall include the following: • Runoff shall be directed away from the trash and loading dock areas; • Bins shall be lined or otherwise constructed to reduce the leaking of liquid wastes; • Trash and loading dock areas shall be screened or walled to minimize offsite transport of trash; and, • Impervious berms, trench catch basins, drop inlets, or overflow containment structures nearby docks and trash areas shall be installed to minimize the potential for leaks, spills, or washdown water to enter the drainage system.	Project Applicant	Prior to the start of construction	Kings County	

3.6 Supporting Information and Sources

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Kings County
1400 W Lacey Blvd, Bldg #6
Hanford, CA 93230

SECTION 4: List of Preparers

Project Title: Sozinho Dairy #5

List of Preparers

4Creeks Inc.

- David Duda, AICP, GISP
- Nate Antepenko, Associate Planner
- Kyle Parreira, PE
- Madison Caesar, EIT

Persons and Agencies Consulted

The following individuals and agencies contributed to this environmental document:

Kings County

- Victor Hernandez, Planner IV

Live Oak Associates

- Austin Pearson, Vice President
- Natalie Neff, Staff Ecologist

BSK Associates

- Adrian Sizemore, EIT, Staff Professional
- Neva M. Popenoe, PE, GE, Fresno Branch Manager

Appendix A

Exterior Lighting Plan

ASAE EP344.3 JAN2005
Lighting Systems for Agricultural Facilities



American Society of
Agricultural and Biological Engineers

STANDARD

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ASABE, 2950 Niles Road, St. Joseph, MI 49085-9659, USA ph. 269-429-0300, fax 269-429-3852, hq@asabe.org

Lighting Systems for Agricultural Facilities

This Engineering Practice combines and therefore supersedes ASAE R286, Lighting for Dairy Farms, and ASAE R332, Poultry Industry Lighting, developed by the joint Illuminating Engineering Society—ASAE Farm Lighting Committee, EPP-46. R286 was adopted by ASAE June 1965; R332 was adopted by ASAE December 1969. This document was approved by the ASAE Electric Power and Processing Division Standards Committee and adopted by ASAE as ASAE Recommendation R344 February 1971; revised editorially and reclassified as an Engineering Practice December 1975; reconfirmed December 1980; revised March 1982; reconfirmed July 1986, December 1987; revised July 1988; reaffirmed December 1993, December 1998; December 1999; revised editorially March 2000; revised January 2005

1 Purpose and scope

1.1 This Engineering Practice is intended to guide those responsible for or concerned with, the design of lighting installations on or within agricultural facilities.

1.2 This Engineering Practice applies to the effective performance of workers as they accomplish specific tasks requiring various levels of illuminance and it applies to lighting installations used to change the physiological or biological properties of livestock, birds, fish and plants to alter their production capabilities.

1.3 The lighting recommendations are based on information obtained from search of current literature, from people and organizations active in this field, and from field measurements of lighting requirements for difficult seeing tasks. This document is in accordance with the latest knowledge and practice of the lighting field, and conforms to all official IESNA reports. However, future progress in agriculture and lighting will undoubtedly make revisions desirable.

1.4 Lighting systems must be installed safely. In all cases, the National Electrical Code and Building Codes, plus local codes, will take precedence. This document is primarily for effective, efficient production in agriculture.

2 Introduction

2.1 Lighting equipment

2.1.1 Lamps Light sources available for agriculture lighting applications include incandescent, fluorescent, low pressure sodium and high intensity discharge (HID). HID sources include mercury, metal halide and high-pressure sodium lamps. HID lamps are more efficient, have longer rated lives, and generate 2 to 5 times more light than the incandescent filament for the same amount of electrical energy. Refer to IESNA Lighting Handbook, Part II Lighting Engineering, Chapter 6 Light Sources.

2.1.1.1 Incandescent Lamps These lamps come in a variety of types and sizes. They are a high brightness source and should be used in appropriate luminaire to minimize glare. No auxiliary electrical equipment is required. These lamps can be dimmed.

2.1.1.2 Fluorescent Lamps These lamps provide a large light source. Even though surface brightness is relatively low, fluorescent lamps should always be housed in a suitable luminaire to minimize glare. In high humidity environments or areas subject to wash down, gasketted or weatherproof housings are required to prevent corrosion and premature failure of the light system. Fluorescent lamps are available in different sizes, types, and colors, which can provide good color rendering, cool or warm colors. Light output is highly dependant on operating temperature. At very high or extremely low ambient temperatures, light output drops. Cold start or low temperature starting ballasts along with an enclosure to maintain to temperature should be used in cold areas. Refer to IESNA Lighting Handbook, Part II Lighting Engineering, Chapter 6 Light Sources.

2.1.1.3 High Intensity Discharge Lamps HID lamps are used both outdoors and indoors. Ballasts are required for their operation. HID lamps differ in their color rendering ability, generally being lower than fluorescent or incandescent lamps. These lamps are not suited to applications where lights operate intermittently for a short duration due to their slow warm up time.

2.1.2 Luminaires

2.1.2.1 Light is emitted from most lamps in many directions.
A luminaire is designed to control the direction at which light is emitted so glare will be reduced and light directed more effectively on the objects to be seen. In most cases, luminaires should direct light downward to minimize losses. In some applications, it is desirable to have a portion of the light directed toward the ceiling. Some of the light striking a light-colored ceiling is reflected back to the visual tasks.

2.1.2.2 Luminaires control light distribution with reflectors (enamel, aluminum, glass, or plastic), refractors (glass or plastic diffusing lenses), or diffusers (glass or plastic diffusing shields). One or more of these devices might be used in the same luminaire. Reflectors and refractors direct light for more efficient utilization. Reflectors, refractors, and diffusing shields prevent glare. Refer to IESNA Lighting Handbook, Part II Lighting Engineering, Chapter 6 Light Sources.

2.1.2.3 A luminaire prevents water from striking hot lamps when used in damp locations, outdoor areas or areas which are washed. Weatherproof or gasketted housings are available for lamps used in humid environments, areas where water spray is a problem or when lamps are exposed to the weather.

2.1.3 Controls Electric lighting systems in agricultural applications can be controlled electronically. There are several reasons for equipping a lighting system with an electronic control.

- Visual and Production Performance: match light intensity to the application. Occupant visual performance may depend on the quantity and quality of the light; for example, visually inspecting livestock for health or produce for quality purposes is a demanding visual task. The application may be specific to the reproductive, growth or behavioural needs of the plant or livestock.
- Energy Management: matches light application to demand; thereby, reducing unnecessary energy, time of use and/or demand charges.

A wide variety of controls are used in agricultural operations depending on the application. These controls include switches, dimmers, photosensors, occupancy sensors, and timers. The information provided in this section comes from IESNA Lighting Handbook, Part V Special Topics, Chapter 27 Lighting Controls. For details on any of the areas discussed, please refer to the Handbook.

2.1.3.1 Switching Switching control allows lights to be switched on and off manually with simple wall-box switches, or remotely with relays, switchable circuit breakers, a control system, or occupancy sensors. The choice of switching control will depend on the application. Local manual switching controls give control over light levels according to their needs or the task are inexpensive.
Central switching controls are well suited to scheduled activities such as occupation of a space during prescribed hours of the day and week. Control systems are ideal for applications with multiple zones and changing lighting requirements over time. Greenhouse operations, for example, employ lighting control systems to match light requirements to the crop being grown in a particular zone.
Occupancy or motion sensors are used in applications where lights are required only during occupancy of a space. These sensors are ideally

Table 1 – Relative Life & Efficacy of Various Light Sources (IESNA Figure 6-3; Ontario Hydro, 1992)

System	Lamp Power (W)	Lamp Life (hrs)	Initial Lumens	Initial Efficacy (lm/W)	Mean Lumens	Mean Efficacy (lm/W)	Efficacy (Compared to mean regular incandescent)
Regular life Incandescent	100	1,000	1,650	17	1,535	16.5	---
Long life Incandescent	100	5,000	1,240	NA	1,200	12.4	0.75
26 W Electro-Magnetic Compact Fluorescent	26W + 6W ballast	10,000	1,800	70	1,655	51.7	3.2
32 W double tube T-8 with electronic ballast	64W + 6W ballast	20,000	5,600	88	4,760	68.0	4.7

suited to walkways, hallways, entrances to buildings, or to spaces where the user's hands are not free to activate a switch.

2.1.3.2 Dimming Dimming control allows the illuminance in an area to be adjusted smoothly and continuously to meet the lighting requirements of the occupants. Dimming systems are employed in the poultry industry for example to control daily light levels and light levels during the growout period of a crop of broiler chickens for instance.

Most incandescent lamp dimmers currently rely on solid-state switching components. These components can generate electromagnetic and audible noise as well as harmonic distortion, which requires filtering. The light output, life and color temperature of the lamp are affected by dimming. By reducing light output by 25%, lamp life triples. The lamp color appears warmer with reduced voltage.

Fluorescent lamps can be controlled with dimmers. Dimming is not as simple as reducing the input voltage, which eventually extinguishes the arc and reduces lamp life. Dimmers are available for lamps operated with standard magnetic ballasts, magnetic dimming ballasts, or electronic dimming ballasts. There are many factors affecting the reliability, stability and cost of dimming systems.

High Intensity Discharge lamps can be dimmed; however, the restrike delay, long warmup, and color shift limit their use in agricultural applications. Multi-level ballasts allow illuminance to be changed in steps. Continuous dimming to less than 20% full light output is available with certain equipment. Metal halide lamps shift color toward blue-green, and high-pressure sodium to yellow. The color shifts become noticeable below 60% of rated lamp power for metal halide and 40% for high-pressure sodium lamps.

2.1.3.3 Timing Devices Timers control lighting based on known or scheduled events, ideal for poultry, swine and dairy operations. They range from simple integral timers (spring-wound) to microprocessors. Microprocessors can be programmed for a sequence of events or multiple events and lighting effects for years in advance. An override is required in order to deviate from the preset schedule.

2.1.3.4 Sensing Devices Sensing devices include photosensors and occupancy or motion sensors. A photosensor transforms visible radiation (light) into an electrical signal, which controls a lighting system or lamp. The photosensor generally does not respond to UV and IR radiation. Design, placement, and calibration of interior photosensors are critical to ensure high quality lighting.

Occupancy or motion sensors provide local on-off control of luminaires automatically based on the presence or absence of occupants. Energy consumption is reduced and demand may be reduced as well.

2.1.4 Energy Efficient Lighting Energy efficiency varies with the type of light source. Table 1 shows the approximate efficiency of a number of light sources compared to a regular life incandescent source. Fluorescent, metal halide, and high-pressure sodium lighting systems have significantly higher first costs compared to incandescent. However, the energy cost savings combined with longer lamp life offsets the higher initial costs for energy efficient lighting systems. The energy efficient alternative will typically pay for itself in two years or less in applications where the lights are operated 8 hours per day or more (Chastain, 1992).

2.1.5 Starting Characteristics The two starting characteristics that influence lamp selection are starting temperature and warm-up period.

2.1.5.1 Starting temperature generally is only important when selecting a lighting system for unheated spaces in cold climates, such as naturally ventilated structures. Incandescent and high-pressure sodium lamps perform well at cold temperatures (-29°C or colder). The minimum starting temperatures for standard fluorescent lamps and ballasts is 10°C. Ballasts are available that allow fluorescent lamps to start at -29°C.

2.1.5.2 Incandescent and halogen lamps do not have a warm-up period. Standard fluorescent lamps have a slight starting delay, but it is not significant in most applications. Quick starting ballasts can be purchased if required. All of the high intensity discharge lamps have a significant warm-up period. The warm-up period can range from 1 to 15 minutes.

2.1.6 Emergency Lighting The need for emergency lighting must be evaluated during the design phase of the building. If the facility does not have an automatic start generator, emergency lighting units may be required, to illuminate the exit passageways in the building(s) in the event of a power outage. Be sure to consult federal, state, provincial and local codes that may apply. NFPA (National Fire Protection Association) 101 - The Life Safety Code can be used as a reference along with the State Fire Marshal's Office in the State where the facility will be built. Even if not required, the Engineer designing the building must always consider how to get people out of the building(s) in the event of an emergency. Auxiliary Generators must be installed in accordance with NFPA (National Fire Protection Association) 70, the National Electrical Code, NFPA 110 Standard for Emergency and Standby Power Systems and any other federal, state, provincial and local codes that may apply. The local electrical utility also must approve any installation and the equipment used. The appropriate NFPA, federal, state, provincial and local codes must be followed with regard to the installation of fuel tanks. In some instances, fuel tanks may be located inside the building, if the appropriate codes are followed and authorities such as State Fire Marshal's Offices are consulted. Be sure to check and see if the insurance company insuring the facility has any guidelines that must be met.

2.1.7 Codes Many federal, state, provincial and local codes govern the use of lighting equipment. Some public health codes specify minimum illuminance levels required in processing plants, egg handling areas, milking and milk handling areas to maintain health standards. These required levels address the concern for proper sanitation and often are below those recommended for efficient performance of visual tasks.

Table 2 – General Characteristics of Light Sources

Lamp Type	Lamp Power (W)	CRI	Efficacy (lm/W)	Typical Lamp Life (hrs)
Incandescent	34 - 200	100	11 - 20	750 - 2,000
Halogen	50 - 150	100	18 - 25	2,000 - 3,000
Fluorescent	32 - 100	70 - 95	75 - 98	15,000 - 20,000
Compact Fluorescent	5 - 50	80 - 90	50 - 80	10,000
Metal Halide	70 – 1,000	60 - 80	60 - 94	7,500 - 20,000
High-pressure Sodium	35 – 1,000	20 - 80	63 - 125	15,000 - 24,000

Agriculture facilities include many types of environments, which may be wet, damp, corrosive, dirty, surrounded by combustible materials, or saturated with gasoline fumes. It is mandatory to follow the National Fire Protection Association Standard No. 70, National Electrical Code, and any local regulations that may be in effect when installing lighting equipment. Contact a local electrician, electric power supplier for assistance or refer to the Agricultural Wiring Handbook published by the National Food and Energy Council (US).

2.2 Lighting Quality

The initial quality of light in a work area must be considered in addition to the quantity. An installation's light quality is influenced by the color of the light source, light uniformity, glare, flicker, horizontal and vertical illuminance, luminaire noise, the environment and many more listed in IESNA Lighting Handbook, Part III Quality of the Visual Environment, Chapter 10 Quality of the Visual Environment. Maintenance of the lighting system keeps both the quality and quantity of light at acceptable levels over time.

2.2.1 Color

The color of the light source is an important light quality factor in agricultural facilities. Certain specialized visual tasks, notably color discrimination processes and some inspection activities, depend on appropriate light source color. Color also has certain psychological effects upon people. These factors should be considered when selecting light sources to obtain quality lighting. One measure of the color of a light source is the Color Rendering Index (CRI). The CRI and other typical characteristics are presented in Table 2. Incandescent and halogen lamps provide the greatest color rendition and have a CRI of 100. A CRI of 80 or more is recommended for office, milking, washing, product inspection, plant growth and animal treatment areas. High quality fluorescent or metal halide lamps can provide an energy efficient light source when a CRI of 80 or greater is needed.

2.2.2 Uniformity

2.2.2.1 The uniformity of illuminance is typically expressed as a uniformity ratio (maximum measured illuminance ÷ minimum measured illuminance). The formula for the coefficient of variation (CV=*standard deviation÷mean*) provides a more meaningful, unbiased measure of uniformity. Furthermore, the *CV* provides a normalized measure of the interval about the mean that contains a certain portion of the measurements. The *CV* can be expressed in units of percentage by multiplying by 100; therefore, CV = (standard deviation / mean) x 100.

2.2.2.2 One method of insuring uniformity in a lighting system is to lay out the luminaires with a "spacing-to-mounting-height ratio" less than the luminaire's published "Spacing Criterion" (SC) value. The spacing-to-mounting-height ratio is equal to the ratio of the fixture spacing, *s*, to the mounting height above the work plane, *Hp*. The value of *Hp* is the difference between the actual mounting height of the fixture above the floor and the work height. If an obvious work height is not apparent, then use a work height of 0.6 m, which is the approximate height of an animal's eyes for breeding purposes.

2.2.2.3 Light sources should be located to minimize shadows cast on the work area by workers and obstructions. Objects should receive illuminance from more than one direction to minimize the density of shadows and to provide uniform illuminance.

2.2.3 Glare

Glare is any brightness within the field of vision that causes discomfort, annoyance, reduction in vision, or eye fatigue. It usually is the result of uncontrolled light emitted directly by a luminaire, or reflected from a glossy surface that is in the normal line of sight in the work area. Proper selection and mounting of the luminaires (above the line of sight), and use of reflective matte finishes on interior surfaces will greatly reduce glare.

2.2.4 Environment

2.2.4.1 Room surfaces should have high reflectance, matte finishes to help prevent excessive brightness ratios. The ceilings, walls and floors can increase the utilization of light within a room by acting as a secondary large- area light source. Luminaires that direct some light upward toward a ceiling having a relatively high reflectance will help create a comfortable visual environment. Recommended reflectance values are presented in Table 4.

2.2.4.2 Maintenance is necessary to ensure that a high quality light environment is provided. Lamps, luminaires and room surfaces in production facilities tend to become quite dirty. Regular cleaning is required to maintain illuminance levels.

2.3 Lighting Quantity

2.3.1 General Comments Modern agriculture facilities need a high quality work environment to optimize plant, animal and worker efficiency, and comfort. Proper lighting is an environmental factor that is often overlooked, or given little attention during the planning, construction, and maintenance of a facility. However, it is just as important as ventilation, heating, or cooling.

The amount of the illumination needed in agriculture facilities varies depending on the type of production and the tasks performed in the work area. In response to the variability of lighting system requirements, this discussion is divided into several sections and subsections.

2.3.2 Livestock Lighting system requirements vary with the housing and livestock type. The housing system and task will determine whether natural and or supplemental lighting is required.

Table 3 – Summary of Lighting Uniformity Criteria for Livestock Facilities (Chastain et al., 1997)

Task Classification	Maximum *CV* (%)	Corresponding *s*/*Hp*
Visually intensive (i.e. milking)	25	0.87
Handling of livestock and equipment	45	1.57
General low-intensity lighting	55	1.92

Table 4 – Recommended Matte Reflectance Values

Surface	Reflectance (%)
Ceiling	80 to 90
Wall	40 to 60
Desk and bench top, equipment	25 to 45
Floor	20 minimum

2.3.2.1 Natural and Artificial Lighting Light sources can be natural or artificial depending on the task and quality of light required. Natural lighting is well suited to work areas where tasks can be adequately lit during the daytime, such as open feedlots, naturally ventilated facilities, or areas within buildings that can be illuminated by windows.

Natural light may be supplemented with artificial light for some tasks. In these cases, supplemental light might be required to maintain adequate light quality and photoperiod. Photoperiod refers to the duration of the light period. Many animals and plants require specific photoperiod (light) and scotoperiod (dark) phases for reproduction and growth. Natural daylight is significant in naturally ventilated, curtain-sided buildings. Winter light levels ranging from 200 lux (lx) on a cloudy day to as much as 53,000 lx on a clear day have been measured in curtain-sided dairy facilities (Chastain, et al., 1997). In these types of buildings, artificial lighting supplements the natural day length. A timer and photocell control the supplemental light system's operation.

In totally enclosed buildings, artificial lighting alone must provide the needed light quality and day length.

2.3.2.2 Buildings This section will discuss lighting systems in buildings housing various types of livestock.

2.3.2.2.1 Dairy and Beef Cattle Facilities High quality light at adequate levels and duration is required in facilities housing dairy and beef cattle. Based on a field study of lighting in dairy buildings, a *CV* of 25% or less represents a high degree of uniformity (Chastain, 1994). The coefficient of variation was found to correlate well with respect to the ratio of the average fixture spacing and mounting height above the work plane (*s/Hp*) (Chastain et al., 1997). The recommended uniformity criteria for livestock facilities are summarized in Table 2.

Research trials indicate that supplementing lactating cows with 16 to 18 hours of light per day increases milk production by 5 to 16% as compared to cows exposed to 13.5 hours or less of light per day (Peters, 1994; Dahl et al., 2000). The expected result of supplemental lighting for a commercial herd is a 5 lb increase in milk production coupled with a corresponding increase in feed intake. The response to supplemental lighting however is not immediate. The cows will require several weeks to adapt, and the increase in milk production precedes the increase in feed intake (Dahl et al., 2000).

In order to stimulate milk production, the lighting system must provide the following:

1) 150 lx of illuminance throughout the barn.
2) 16 to 18 hour continuous block of light. Providing illuminance for 24 hours a day does not produce a sustainable increase in milk yield, and operating the lighting system more than necessary wastes energy.

Table 5 – Recommended Illuminance Levels for Dairy Livestock Facilities (NFEC, 1993; MWPS, 1992; Leech and Person, 1993).

Work Area or Task	Illuminance (lx)
Parlour, pit and near udder	500
Parlour, stalls & return lanes	200
Parlour, holding area	100
Milk room, general	200
Milk room, washing	750-1,000
Stall barn, manger alley	100
Stall barn, milking alley	200
Drive-through feed alley	200

In contrast to extended light in lactating cows, recent evidence suggests that reduced photoperiod is of benefit to cows during the dry period (Miller et al., 2000). Cows that received 8 hours of light and 16 hours of darkness each day when dry produced 7 lbs more milk per day in the next lactation than contemporaries exposed to 16 hours of light per day. Furthermore, reduced photoperiod during the dry period improves immune function and health in cows as they transition into lactation relative to cows on longer photoperiods (Dahl et al., 2003).

Improved daily gains have also been observed for beef steers and dairy heifers (Peters, 1994). The lighting period needed is similar to that for lactating cows.

Recommended illuminance levels for dairy facilities are presented in Table 5.

In addition to providing adequate levels and duration of illuminance for production, a high level of uniformity is required in the parlour pit, office, and milk room washing area. These areas require high uniformity to perform demanding visual tasks.

2.3.2.2.2 Swine Facilities Lighting plays a significant role in reproductive and overall swine production performance. The cost of electricity for lighting is a small percentage of the cost of production for swine; however, it is possible to reduce energy costs, increase lighting levels and actually improve performance with well designed, energy efficient lighting systems. A good light system should provide proper light levels economically with low maintenance costs.

Incandescent lighting is very common in swine barns. A 100W 1,000 hour standard rated incandescent bulb should last 63 days in the breeding barn. Long life incandescent bulbs at 5,000 hours rated life still only last 312 days and the actual light output is reduced by about 25% over the regular 1,000 hour bulb.

Compact fluorescent (C.F.) lamp and ballast systems provide good energy efficiency and are easily retrofitted into incandescent fixtures. However, the shorter equipment life and higher cost to replace lamps and ballasts compared to T-8 fluorescent tube systems increases operating costs and reduces cash flow.

Barns with a ceiling height of less than 3.6 m should install T-8 fluorescent lamps with matching electronic ballast, mounted in a weatherproof fibreglass or plastic housing with gasketted diffuser. These units are more than four times as efficient and the lamps last at least 24 times as long as a regular life incandescent lamp. Refer to Table 2 for relative system efficiencies and lamp life.

Where barn ceiling height exceeds 3.6 m, the more efficient high intensity discharge (HID) fixtures should be considered. They are easier to install, maintain and require fewer fixtures to provide the same level of light. Types to be considered include:

- metal halide (white light, good color rendition, good to excellent life)
- high-pressure sodium (can be color corrected for good color rendition, excellent life, low cost)

Ceilings and walls should be white to maximize reflectance and reduce the number of lighting fixtures required.

Recommended Light Intensities and Photoperiods for Swine

Each level of production requires different light levels and photoperiods. See Table 6: Recommended Light Levels and Photoperiods for Swine Housing. The 1993 Recommended Code of Practice for the Care and Handling of Farm Animals - Pigs (Publication 1898/E, Agriculture and Agri-Food Canada) recommends at least 8 h of light per day, at a level adequate to observe pigs. Five footcandles are adequate and will be at least twice as much light as typically is found in many older swine barns. Design is critical to maximize light efficiency and minimize overlit or underlit areas.

Breeding/Gestation barns require lighting photoperiods from 14-16 hours per day, to bring on more quickly and extend breeding sow estrus. Nursery pigs, particularly those in SEW, should have 24 hours of light at low levels and higher levels for day time feeding, inspection, etc. Farrowing rooms also should have 24 hours of light per day, particularly where heat lamps are not used. Again, it can be low level during night time.

Table 6 – Recommended Light Levels and Photoperiods for Swine Housing (Allmond, 1986; Brandt et al., 1990; Claus et al., 1985; Evans et al., 1996; Feddes et al., 1988; Hoagland et al., 1981; Mutton, 1987; Ntunde et al., 1979; Perara et al., 1984; Petchey, 1987; Stevenson et al., 1983; Wheelhouse, 1982)

Type of Housing	Light Levels (lx)	Photoperiod (hrs/day)	Comments
Breeding/Gilts	>100	14-16	- necessary for estrus cycling
Gestation	>50	14-16	- to assist missed cycles, bring estrus on again
Farrowing	50-100	8	- if no heat lamps, light in room 24 h/d
Nursery	50	8	- light in room 24 h/d
Grower-Finisher	50	8	

2.3.2.2.3 Poultry Facilities Poultry farms and processing plants vary in function, size, layout and degree of mechanization; however, there are some areas common to most facilities. The following are brief discussions describing the operations in the major areas. Lighting requirements vary with the type of production and the task. The amount and duration of light required by the birds is significantly different from worker requirements. See Table 7 Lighting Guide for Poultry Production for light levels and photoperiod requirements directly associated with affecting production. Table 8 Lighting Guide for Poultry Industry Tasks provides information on tasks associated with but not directly affecting production.

Broiler Houses Broiler chicks are placed into large houses inside which they move about freely. The structures may utilize natural light with artificial supplement or rely totally on artificial light. A low level of general lighting is required so the birds can find food and water during non-daylight periods or for certain time periods each day in completely enclosed facilities. The light levels and photoperiod may be adjusted during the growing period to maximize growth and control losses. Light control is provided by a dimmer and timer system. Higher levels of supplemental lighting may be required occasionally in the confinement area for workers to perform tasks such as reading charts or controls, inspecting the birds and equipment, and cleaning. These lights may be on a separate circuit from the lighting circuit used to stimulate growth.

In many facilities, monitoring and control equipment as well as records are housed in a separate room. Localized, higher intensity lighting is needed in this area for record keeping, observation and adjustment of alarm and control systems and monitoring equipment.

Breeder Barns

Breeder birds are placed in separate facilities, which generally are totally enclosed blocking out all natural light. Artificial lighting on timing circuits controls the perceived day length. The hours of light per day stimulate reproduction and control the breeding process.

The lights for production are on their own circuit. A separate lighting circuit provides general lighting for feeding, inspection and cleaning. Localized, higher intensity lighting is needed for record keeping, observation and adjustment of alarm and control systems and monitoring equipment.

Laying Houses

Facilities housing laying hens may range in size from a few thousand to several hundred thousand birds. There are basically two types of laying houses, the floor type house and the cage type house. In floor type houses, the hens are free to move about the floor area. In cage type houses, hens are confined to cages with three to four hens per cage. A common size cage for housing four birds is 300 millimetres (12 inches) wide, 460 millimetres (18 inches) deep, and 400 millimetres (16 inches) high. Artificial lighting systems control the perceived day length in order to extend the egg laying period during the year.

Lights to stimulate production are on one circuit. General lighting for inspection and cleaning is on a separate circuit. Localized, higher

Table 7 – Lighting Guide For Poultry Production

Type of Poultry	Age (Weeks)	Minimum Light Level (lx)	Photoperiod (hrs/day)
Chickens			
Broilers	0 to 2.5	20-30	24
	2.5 to market	5-10	24
Breeders	0 to 3	30-50	14
	4 to 20	30-50	8
	20 to 64	30-50	15
Layers	0 to 6	10-30	16
	6 to 18	5-10	8
	18 to 80	5-10	15
Turkeys			
New Hens	0 to 8	30-50	8
Grow Out, Hens	8 to market	30-50	8
New Toms	0 to 8	30-50	16
Grow Out, Toms	8 to market	10-30	16
Breeder Hens	0 to 5	20	24
	5 to 8	20	8
	8 to 22	20	8
	22 to 30	20	8
	30 and up	20	13 to 15
Breeder Toms	0 to 5	20	24
	5 to 30	20	13 to 15
	30 and up	30	13 to 15

Table 8 – Lighting Guide For Poultry Industry Tasks

Area And Visual Tasks	Minimum on Task (lx)	Explanation
Brooding, Production and Laying Houses		
Feeding, Inspection and Cleaning	200	Provided by a lighting circuit separate from the circuit used to stimulate production and growth.
Charts and Records	300	Localized lighting is needed where charts and records are kept.
Thermometers, thermostats, and light controls	500	Localized lighting is needed to accurately determine readings or setting.
Hatcheries		
General area and loading platform	200	Needed for operators to move about readily. Needed for cleanliness of the general area.
Inside incubators	300	Portable or localized lighting is needed for inspection and cleaning inside incubators.
Dubbing station	1,500	Needed to prevent excessive cuts and injury to chicks. Supplementary lighting in addition to general lighting.
Sexing	10,000	Needed for sex sorting of baby chicks. Supplementary lighting should be used in a closed area to prevent excessive luminance ratios between the task area and the immediate surrounding area.
Egg Handling, Packing and Shipping		
General Cleanliness	500	General illuminance is needed to keep area clean and to detect any unsanitary conditions.
Egg quality inspection	500	Needed to examine and grade eggs. Note: Candling and other special grading equipment are used as separate devices for examining and grading eggs.
Loading platform, egg storage area, etc.	200	Needed for easy operator movement, and for operation of mechanical and loading equipment.
Egg Processing		
General lighting	700	Should meet food preparation area cleanliness requirements. Includes liquid processing, pasteurizing, and freezing of raw eggs.
Fowl Processing Plant		
General (excluding killing and unloading area)	700	General lighting for cleanliness, inspection, and sanitation. Should meet food preparation area requirements.
Government inspection station and grading stations	1,000	Needed to detect diseases and blemishes. Vertical illuminance is needed if birds are hanging.
Unloading and killing area	200	Needed to move about readily.
Feed Storage		
Grain, feed rations	100	Needed to read labels, scales, and detect impurities and spoilage in feed.
Processing	100	Needed for easy operator movement, read labels, scales, and equipment dials. Supplementary lighting is needed if machine repairs are necessary.
Charts and records	300	If detailed records or charts are kept in the feed room, localized lighting in this area is needed.

intensity lighting also is needed for record keeping, observation and adjustment of alarm and control systems and monitoring equipment.

Egg Handling, Packing and Shipping

The egg handling area may be located in a separate or adjoined building. When the eggs arrive at the egg processing area, they are either stored in a refrigerated area or loaded directly onto a washer. After the eggs have been washed, they are sorted and graded. Rough shells, cracked shells, and dirty or stained eggs are removed at the grading table. Candling equipment is used inside an enclosed booth to sort eggs that have internal defects such as blood spots or meat spots. If mechanization is used, the eggs are sorted according to size by a machine and placed in an egg carton for shipment. The cartons are held in refrigerated storage until they are ready for shipment to retail outlets. General lighting is needed to keep the area clean and detect any unsanitary conditions. Higher intensity, task specific lighting is necessary to examine and grade eggs. In the loading platform and egg storage areas, general lighting is needed for operation of mechanical and loading equipment.

Raw Egg Processing

Eggs, which are to be marketed as liquid, frozen, or powdered products, are processed in this area. The area must meet the sanitary requirements of a public food preparation area as set up by the health department. Cracked eggs, eggs with shell defects and stains, plus grade A eggs, are utilized in the processing of liquid eggs. The eggs are broken out of their shells and pumped into a holding tank. The liquid eggs for interstate shipment are pasteurized and packaged. Some states also require all broken-out eggs to be pasteurized for intrastate shipment. In addition, liquid eggs may be frozen at the processing area and shipped as a frozen product. General lighting must supply adequate light levels and uniformity to ensure that cleanliness requirements for a food preparation area are met.

Hatchery

Fertile eggs are brought to the hatchery, loaded onto trays and placed in incubators. The incubators maintain a temperature required for embryo development. After twenty-one days, the chick is hatched. When hatched, baby chicks are sorted according to sex. The male chicks are

disposed of and the females are marketed as layers. Most of the female chicks have their combs dubbed, a process whereby the top of the comb is clipped off. As a result, the mature bird has a smooth comb, which helps prevent the comb from catching in the wires of the laying cages. Broiler chicks are handled in much the same manner except they are not sex-sorted or dubbed.

General lighting is needed for cleaning and easy movement of operators. Supplementary lighting is required for inspecting and cleaning inside incubators, and at dubbing stations to prevent cuts and injuries to chicks. Task specific lighting is necessary for sex sorting and should be provided in a closed area to prevent excessive luminance ratios between task area and the immediate surrounding area.

Poultry Processing Plant

The birds are brought to the plant in crates of about 20 per crate. Crates are unloaded and the birds hung by the feet on a continuously revolving overhead carriage. They pass by an area where they receive a slight electrical shock, which stuns them just before killing. They move through a bleeding area and then into the scalding tanks. Feathers are then removed by machine and the birds move on to the processing area. All birds are government inspected for wholesomeness after eviscerating, are thoroughly washed, inspected again, and sorted according to grade. Generally, the processed birds are then packed in ice and shipped to retail outlets.

General lighting is needed for cleanliness, inspection and sanitation. Supplementary lighting is required to detect diseases and blemishes (vertical illuminance if the birds are hanging).

2.3.2.2.4 Other

Horses

Brood Mare

Day length is the primary environmental factor that regulates the seasonal reproductive cycle of the mare (King, 1993; Evans et al., 1990). Since all foals are given a birthday of January 1, it is a relatively common practice to manipulate the estrous cycle in the mare to produce a foal as close to January 1 as possible. Due to an 11 month gestation period, this requires that the mare be bred out of season in winter. Provision of 14 to 16 hours of light followed by darkness has been shown to stimulate estrous. The minimum amount of light needed is 22 to 32 lux (Vogelsang, 1993; Evans et al., 1990). Since 108 lux are needed in a box stall (Table 9), this light requirement can be satisfied by controlling the stall fixture with a timer.

Table 10 – Recommended Illuminance Levels for Common Indoor Work Areas in Livestock Facilities (NFEC, 1993; MWPS, 1992; Leech and Person, 1993)

Work Area or Task	Illuminance (lx)
General, all types of livestock	
Housing area & feed bunk	100
Animal handling	200
Veterinary treatment	1,000
Office, General	500
Office, Task lighting	750–1,000
Feed room, mixing	200
Ladders & stairs	200
Toilet	200–300
Farm shop, active storage	100
General machinery repair	300
Rough bench work	500
Detailed bench work	1,000
General storage	50
Loading platform	200
Read charts, thermometers, etc.	200–300
Haymow & silo	30
Equipment & utility rooms	100–200
Sheep	
Lambing	100
Growing & finishing	100

Table 9 – Recommended Illuminance Levels for Horse Facilities (NFEC, 1993; MWPS, 1992; Leech and Person, 1993)

Work Area or Task	Illuminance (lx)
Box stalls	100
Tack room	300-400
Breeding	150-200

Stallion

Day length also influences sperm production in the stallion. Sperm production in the winter is typically half of that produced in the summer breeding season (King, 1993). Controlling the photoperiod for the stallion in the same way as for the mare will improve off-season breeding performance (Hudson, 1996). Table 9 Recommended Illuminance Levels for Horse Facilities lists light intensities for different work areas in a horse barn.

2.3.2.2.5 General Work Areas

Illuminance levels recommended for general livestock facility work areas within buildings are presented in Table 10. The IESNA lists recommended lighting levels for general workplace lighting in offices and industrial facilities. An attempt has been made to provide a fairly comprehensive list of tasks that might be performed in livestock facilities. In the event that a task is not listed in Table 10, please refer to IESNA Lighting Handbook, Part IV Lighting Application, Chapter 11 Office Lighting, and Chapter 19 Industrial Lighting for further information.

2.3.2.3 Open Lot Facilities

Important considerations in lighting beef and dairy cattle feedlots include comfort for the workers and cattle, production efficiency of the cattle, and feedlot security.

2.3.2.3.1 Lighting Systems and Principles

Principles of selection for cattle feedlot lighting systems consist of:

A) using the lowest lamp wattage to yield acceptable lighting levels in various areas
B) selecting an efficient type of lamp/luminaire
C) providing automatic control of lighting/lamp operation
D) providing adequate lighting system maintenance.

2.3.2.3.2 Feed Pen Lighting

Feedlot and dairy cattle feed pen lighting is provided for several production reasons. Feed pen lighting allows the animals to ″see″ where the food and water sources are as well as feel more comfortable during dark periods since cattle are inherently nervous in the dark. During high temperature periods, cattle are more likely to eat during the coolest part of the day so providing light over the food source helps maintain production. The lighting also allows workers to move about during the night and not scare or spook the animals, allowing various work activities to be performed at every hour of the day.

Lighting sources should be located over or very near feed bunks, which generally are located adjacent to the alleyways along which feed trucks move to deposit feed into the feed bunks. Common lamp types used in cattle feed pens include mercury vapour and high-pressure sodium. The mounting pole height influences the lamp size, which in turn affects energy efficiency of the lamp. Lamp efficiency increases with lamp wattage and taller poles allow larger, more efficient lamps to be used. The use of taller poles, larger wattage lamps and good directional control will reduce the number of poles and luminaires required. Taller poles may cost more, but the extra expense may be offset by a reduction in the number required and energy savings from the increased lamp efficiency. Most feed yard lighting systems are operated with single-phase 120-volt service; however, higher voltage 240 and 277-volt systems can also be found. Individual photoelectric control on each light generally is used to

Table 11 – Recommended Lighting Levels in Areas of Feedyards

Feed Yard Area or Task	Illuminance (lx)
Feed Processing	
Scales	50
Commodity Receiving Areas	100
Hay and Grain Storage	50
Concentrate Storage	100
Feed Processing	200
Special Pens and Chutes	
General	100
Sick Animal Treatment	500
Feed Pens	
Feed Bunk Area	10–30
Waterer Area	2.5
Centre and Rear of Pens	2.5
Security Lighting	2

turn individual lights on and off when light levels change. Individual photocell control allows for better continuity of service when photocells fail.

2.3.2.3.3 Loading Pens & Chutes A higher level of illuminance for worker convenience is required in loading areas and chutes where cattle may be moved, visually evaluated, and/or treated for illness. It is important to provide light from several directions in these areas so that the potential for shadows is reduced.

2.3.2.3.4 Feed Mill/Office Many larger feedlots operate the feed milling facilities at night to take advantage of lower time-of-day electricity rates. Lighting recommendations for general offices and commercial grain elevators or similar work areas and tasks will generally apply with these types of facilities.

2.3.2.3.5 Recommended Lighting Levels The Illuminating Engineering Society and ASAE have developed standards for various industries and tasks, including various components of cattle feedlots. A summary of recommended lighting levels in cattle feedlots is presented in Table 11. Good color rendition is necessary in feedlot offices, cattle sorting, feed processing, and veterinary service areas, but is not as essential in feed pens.

2.3.2.3.6 Lighting System Maintenance Lighting system maintenance at cattle feedlots should be performed once every three months. All automatic control equipment should be checked to ensure it is functioning properly and not leaving the lights on during daylight periods. Faulty lamps should be replaced, and dirty lamps/fixtures should be cleaned.

2.3.3 GREENHOUSE LIGHTING SYSTEM DESIGN The use of electrical light sources to supplement natural lighting in greenhouse production systems has become a common practice. The application of lighting systems in greenhouses is a complex technology that is dependent on the types of plants grown, the local incidence of natural sunlight, the availability of electric energy, and the availability of control systems to maximize lighting for enhanced plant performance. While the term "light" strictly applies only to visible electromagnetic radiation (approximately 380 to 770 nm), it will be used in this discussion also to refer to electromagnetic radiation that is useful for growth and development of plants (between 400 and 700 nm). See the photobiology section of the Illuminating Engineering Society handbook for a discussion of specific plant responses to electromagnetic radiation.

Supplemental lighting in greenhouses generally is designed to either enhance photosynthesis in the crop (assimilation lighting), or to control flowering and fruiting (photoperiod lighting).

Supplemental lighting provides a number of advantages to the grower:

- reduced dependency on sunlight
- increased productivity
- higher plant quality
- shorter growing times
- opportunity for controlled seedling production
- control over timing of flowering of plants/shrubs
- control over timing of plant production (to best meet market needs)

2.3.3.1 Design Objectives Greenhouse lighting systems generally are designed to meet three main objectives:

- instantaneous light intensity or daily light integral
- uniformity
- photoperiod.

The light intensity available for plant growth, in the 400-700 nm range, generally is reported in the units of micromoles of photons ("particles" of light) per square meter per second. One mole equals Avogadro's number of photons and one micromol equals a millionth of a mole. This radiation range frequently is referred to as Photosynthetic Photon Flux Density (PPFD). It closely approximates the photosynthetic response curve, and sensors are readily available to measure in this unit (McCree, 1972). Conversion factors between PAR (μmol m^{-2} s^{-1}) and visible light (lux) depend on the light source, and are shown in Table 12. Additional useful conversion factors are presented in Table 13.

Optimum PAR or daily integrated PAR levels are not always readily available for many crops. The designer must ascertain from the client or from research data what design values to select, and also adjust for incoming solar radiation at the site (Spaargaren, 2001). A general guideline for research greenhouses is that the natural sunlight plus supplemental lighting supply a minimum daily light integral of 26 moles per m^2 per day (Dietzer et al., 1994). Generally, supplemental PAR intensities for commercial greenhouses are in the range of 50 - 200 μmol m^{-2} s^{-1} . However, if the lighting system is used only for photoperiod control, then much lower PAR intensities in the range of 1-3 μmol m^{-2} s^{-1} are usually suitable (Mpelkas, 1991; Weir, 1975). These values are measured on a horizontal plane at the surface of the crop canopy.

Ideally, the PAR intensity at the top of the crop canopy would be perfectly uniform. However, luminaire spacing and intensity distributions, combined with economic considerations, require the acceptance of a degree of variation in the PAR intensity (Albright and Both, 1994; Both et

Table 12 – Converting Light Units for Several Different Light Sources (Spaargaren, 2001; Thimijan and Heins, 1983).

Light Source	PAR 400-700 nm (μ mol m^{-2} s^{-1})	Visible 380-770 nm (lx)	Visible 380-770 nm (fc)	Solar Radiation 280-2,800 nm (W m^{-2})
Sunlight	100	5,600	520	48.3
High-pressure Sodium (HPS)	100	8,500	790	44.4
Metal Halide (MH)	100	7,100	660	48.3
Incandescent (INC)	100	5,000	465	48.3
Fluorescent, Cool White (FCW)	100	7,400	688	44.4
Low Pressure Sodium (LPS)	100	10,600	985	45.2

Note: For example, for sunlight: 100 μ mol m^{-2} s^{-1} (PAR) = 520 (fc) (visible radiation) = 5,600 lux (visible radiation) = 48.3 W m^{-2} (solar radiation). The last conversion assumes that 45% of the solar radiation occurs in the PAR waveband.

Table 13 – Additional Useful Light Conversion Factors.

Solar radiation (280-2,800 nm):
1 Langley (Ly) = 1 cal cm^{-2}
1 cal cm^{-2} = 4.184 J cm^{-2}
PAR (400-700 nm):
1 Einstein m^{-2} = 1 mol m^{-2}
1 μ Einstein m^{-2} s^{-1} = 1 μ mol m^{-2} s^{-1}
Visible radiation (380-770 nm):
1 fc = 10.76 lux
Conversion from solar radiation to PAR:
1 MJ m^{-2} = 2.08 mol m^{-2} (Ting and Giacomelli, 1987)
100 Ly d^{-1} = 8.70 mol m^{-2} d^{-1}

al., 2002; Ciolkosz et al., 2001). In research greenhouses, a maximum variability of +/- 15% from average is considered acceptable (Both, 1994), while commercial greenhouses tend to vary somewhat more.

Photoperiod requirements of a lighting system can be best thought of in terms of the length of the dark period plants are exposed to during a 24 hour period. Thus, if a plant requires a minimum photoperiod of 17 hours, the corresponding dark period is 7 hours. If the night length at the site is naturally 12 hours long, then photoperiod control can be obtained by turning the lighting system on for 30 minutes in the middle of the night, thus effectively reducing the maximum dark period to just under 6 hours. Some species have a maximum allowable dark period in order to grow and develop properly, while some require a dark period that is longer than a certain minimum amount. It is important to take the length of the dark period into consideration if assimilative lighting is to be used during nighttime hours. Also, it is important to evaluate the site for sources of stray light from neighboring structures. Stray light, if bright enough, may have an unwanted photoperiodic effect on the crop.

2.3.3.2 System Selection Lamps for greenhouse lighting generally are selected for their electrical efficiency because of the high electrical demand from the systems. Compact size also is a positive attribute because smaller lamps and luminaires tend to create smaller shadows. Currently, the high-pressure sodium lamp is preferred. Low pressure sodium lamps generally are not used because their large reflector size tends to block a high amount of incoming sunlight.

Spectral quality of the light source is usually not an issue because the high proportion of sunlight received by the plants tends to overcome any spectral deficiencies in the light sources (Ehret et al., 1989). Some plant species however, show slightly different growth responses under different light sources. In these installations, a less efficient light source may result in better economic value for the crop (Clarke and Devine, 1984).

Photoperiodic lighting systems historically have used incandescent lamps because of their relatively low installation cost; and even though they are electrically inefficient, they are needed only for a few minutes each night. A recent energy and cost efficient alternative to incandescent lamps are the compact fluorescent lamps (deGraaf-van der Zande and Blacquiere, 1992).

Greenhouse luminaires are specially designed for operation in the greenhouse environment. Other luminaire types should not be considered unless they can perform well in the hot, humid, corrosive environment. Factors to consider in luminaire selection include optical efficiency, electrical efficiency (Both et al., 1997), reflector size, mounting height, ease of installation and maintenance, and ballast location. Occasionally, it can be desirable to locate the ballasts remotely in order to reduce the shading effect of the luminaire.

Switching and controls usually are a component of a greenhouse environmental control system, which is supplied separately from the lighting system. Communication with the controls provider is imperative to ensure that the client receives the type of system control needed, and that either the electrical or controls contractor provides all system components. Manual override controls should be included as part of the control system. Dimming controls are rarely an economic alternative for greenhouse lighting systems. The control of supplemental lighting can be integrated with the control of the shading system (Albright et al., 2000), particularly when control of the daily integrated PAR level is desired.

2.3.3.3 Layout and Design Luminaire layout generally is done on a rectangular grid above the plant canopy (Mpelkas, 1984). Alternatively, luminaries can be mounted in a staggered grid in an attempt to improve light uniformity (Ciolkosz et al., 2001). When possible, locate the luminaires on structural members of the greenhouse to reduce the need for additional support. Luminaires should be located below thermal screens so that the screens may be drawn at night even when the lamps are operating. The effect of any screens or curtains in the greenhouse needs to be taken into account during the design process, provided that they will be drawn while the lamps are operating. Decreasing PAR intensities at the edges of the greenhouse can be countered by increasing the number of luminaires along the greenhouse perimeter (Both, 1994).

2.3.3.4 Maintenance System maintenance generally consists of regular luminaire cleaning, and relamping as needed. The client should be informed of the importance of these tasks. Depending on the specifics of the design, group relamping may be an economical alternative.

2.3.3.5 Headhouse Lighting The headhouse is a structure used for plant handling procedures such as planting, grading, and shipping plant material. It usually is located directly adjacent to the greenhouse. Lighting requirements for the headhouse correspond to the activities taking place in the various areas. Generally, these activities include potting, sorting, packing, shipping, and (cold) storage. The design for these areas should be conducted based on the client's needs and the appropriate design criteria for those tasks, as set forth in Table 10.

2.3.4 Fruit and Vegetable Processing and Storage Fruit and vegetable sorting operations can benefit from lighting changes that match the characteristics and color output of the light with the color of the produce being sorted. Most defects on produce are in the brown or gray tones. Light provided for inspection must have both the right intensity and spectral quality to reveal these defects. Proper lighting design also reduces worker fatigue and eyestrain, resulting in better sorting efficiency. Many operations currently use cool white or warm white lights, which researchers say can mask defects. Many of these lights are being phased out by government mandate because they are not energy efficient.

High CRI SP-30 lights are recommended for most fruit and vegetable inspection areas. SP-30s are 2 times more expensive than cool white, but the relative light output of the SP-30 lamp was among the highest tested. Tungsten halogen quartz lighting also produced good color recognition and enhanced the ability to see brown defects, but is more expensive.

The average illuminance level needed at the produce level for effective visual sorting is between 2,500 and 5,000 lux. The lower levels are adequate for light-colored produce and the higher level is needed for dark-colored produce.

The color of the sorting surface is also important. Using black or gray (but not glossy) belts is beneficial.

Select dark colors for equipment parts and employee clothing. It is important to screen task lights so they do not glare in the workers' eyes. Minimize the influence of natural, stray, and general area lighting in the sorting area.

2.3.5 Indoor Aquaculture Indoor aquaculture is a relatively new industry. The lighting needs for fish production are limited. Lighting however can play a crucial role in the productivity of a facility and as such must be considered in the overall design.

2.3.5.1 Effects of Lighting on Fish Production Lighting effects on fish populations can be classified in three categories: growth rate effects, maturation effects, and vigour.

2.3.5.1.1 Growth Rate Effects Photoperiod and light intensity in many species influence growth rate. Often, only a very low light level difference is needed (<1 lux) to induce photoperiod responses in fish, which include increased activity and time spent feeding. Fish can be extremely sensitive to environmental shock - including sudden changes in light level. The resulting stress can negatively affect feeding and growth of the fish. Thus, dimming circuits or banked lamps on a slow ramp-up and down may be needed to prevent stress and insure proper growth.

2.3.5.1.2 Maturation Effects Manipulating the photoperiod can control speed of maturation of some fish species. One method is to vary the photoperiod above the fish tanks from day to day so as to simulate the natural fluctuations in day length from season to season. In selected species, the annual maturation cycle of the fish can be compressed to 9 or even 6 months by compressing the day length cycle to that period.

2.3.5.1.3 Vigour Fish vigour, or survival rate, also is dependant on lighting. Generally, increased photoperiods will result in greater vigour of the fish crop.

2.3.5.2 Specific Species Recommendations The following recommendations need to be used with some caution. Current research is insufficient for many species; as a result, the recommendations regarding lighting are based on limited data. Combining these recommendations with the knowledge and desires of the grower will assist in the design of a system that optimizes production.

Atlantic Salmon - Long photoperiods during the freshwater period result in an increased growth rate relative to shorter photoperiods (Sigholt et al, 1989) and continuous light results in a higher growth rates than the use of a simulated daylight cycle (Krakenes et al., 1991). Long photoperiods interrupted by 2 months of short photoperiods results in faster maturation and higher survival rates, compared to constant long photoperiods (Duston et al., 1995).
Coho Salmon - Absence of a dark period (24 hr light/day) results in reduced growth rate, silvering index, and seawater adaptability (Thorarensen et al., 1989).
Pink Salmon – Mature faster by accelerating the seasonal photoperiod (Beacham et al., 1993).
Greenback Flounder - Absence of lighting results in death of the species. An 18-24 hour photoperiod is recommended for optimum production (Hart et al., 1996).
Silver Carp - A light level of 100 lux at the water surface is recommended for raising larvae of this species (Radenko et al., 1992).
Rainbow Trout - A long photoperiod (16 hr) results in increased growth and feed conversion (Mason et al., 1991).
Striped Bass - Reproductive cycles can be compressed to 6 or 9 months by compressing the photoperiod cycle, but reproductive success diminishes as a result (Blythe et al., 1994).

2.3.5.3 Lighting Other Areas in the Facility Lighting systems for walkway, processing, packaging, and shipping areas should be designed according to recommendations in the General Work Areas section. Often, lighting requirements for operation of the facility will not be compatible with the needs of the fish. Thus, care must be taken to ensure that lighting for human needs does not negatively affect the fish population.

3 Glossary of terms

3.1 Diffuser: A device used to redirect the illumination by the process of diffuse transmission.

3.2 Candela: The SI unit of luminous intensity. One candela is one lumen per steradian. Formerly known as Candle. For more information on this term, see the IESNA Lighting Handbook Reference Volume.

3.3 Footcandle (fc): The unit of illuminance when the foot is the unit of length. It is the illuminance on a surface one square foot in area on which is uniformly distributed a flux of one lumen. It equals one lumen per square foot.

3.4 General lighting: Lighting designed to provide a uniform level of illuminance throughout the area involved.

3.5 Glare: The effect of brightness or brightness differences within the visual field sufficiently high to cause annoyance, discomfort, or loss in visual performance.

3.6 Illuminance: The density of the luminous flux incident on a surface; it is the quotient of the luminous flux by the area of the surface when the latter is uniformly illuminated.

3.7 Local Lighting: Illuminance provided over a relatively small area or confined space without any surrounding general lighting.

3.8 Louver: A series of baffles used to shield a source from direct view at certain angles or to absorb unwanted light.

3.9 Lumen (lm): The unit of the time rate of flow of light (luminous energy) equal to the energy emitted through a unit solid angle (one steradian) from a uniform point source of one candela.

3.10 Luminaire: A complete lighting unit consisting of a lamp or lamps together with the parts designed to distribute the light, to position and protect the lamps, and to connect the lamps to the power supply.

3.11 Lux (lx): The unit of illuminance when the meter is the unit of length. It is the illuminance on a surface one square meter in area on which is uniformly distributed a flux of one lumen. It equals one lumen per square meter.

3.12 Reflector: A device used to redirect the light from a source primarily by the process of reflection.

3.13 Refractor: A device used to redirect the illuminance primarily by the process of refraction. (The bending of a ray of light as it passes obliquely from one medium to another in which its velocity is different.)

3.14 Shielding Angle (of a luminaire): The angle between a horizontal line through the light center and the line of sight at which the base source first becomes visible.

3.15 Supplemental Lighting: Lighting used to provide a specific amount or quality of illuminance which cannot be readily obtained by the general lighting system, and which supplements the general lighting system.

3.16 Visual Task: Conventionally designates those details and objects that must be seen for the performance of a given activity, and includes the immediate background of the details or objects.

3.17 Work Plane: The plane at which work is done, and on which, illuminance is specified and measured. Unless otherwise indicated, this is assumed to be a horizontal plane 0.75 m (2.5 ft) above the floor.

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HIGH SPEED RAIL

881'
TO HIGH SPEED RAIL BOUNDARY

A.P.N.
016-200-035

A.P.N.
016-200-034

A.P.N.
016-130-097

ONGOING NEGOTIATION OF ACQUISITION AREA.
AREA TO BE FINALIZED AT A LATER DATE

POST BIDA BED ORGANIC MATTER
PROCESSING AREA (150,000 FT²)

WASTEWATER RETENTION POND 2

WASTEWATER RETENTION POND 1

8'
TO PROPERTY LINE

33'
TO PROPERTY LINE

PROPOSED 14' X 20' TANK AND CONCRETE PAD

PROPOSED MECHANICAL SEPARATOR

PROPOSED EARTHEN BERMS WITH OVERFLOW

453'
TO PROPERTY LINE

EXISTING DOMESTIC WELL
(UTILIZED FOR FIRE PROTECTION)

RECYCLED ROAD BASE
DAIRY ACCESS

750W 180° FLOOD LIGHT

RECYCLED ROAD BASE
DAIRY ACCESS

80'
RIGHT OF WAY

20'
TO PROPERTY LINE

A.P.N.
016-130-098

30'
TO PROPERTY LINE

40' TYP.

15' TYP.

20'
TYP.

PROPOSED PROCESS WATER
PROCESSING BEDS
(216,000 FT²)

388'

900'

PROPOSED CONTROL UNIT

PROPOSED LIFT STATION

CELL C

CELL A

CELL B

A.P.N.
016-200-056

MANURE PROCESSING AREA
(200,000 FT²)

POST MANURE
ORGANIC MATTER
PROCESSING AREA
(40,000 FT²)

PROCESSING AND
PRODUCT STORAGE AREA
(30,000 FT²)

PROPOSED LIFT STATION

MANURE STACKING
AREA

PROPOSED
RECEPTION
PIT

PROPOSED FEED
STORAGE AREA

FREESTALL
BARN
(600' X 88')

FREESTALL BARN
(537' X 127')

PROPOSED
FREESTALL
BARN
(550' X 150')

FREESTALL BARN
(537' X 127')

MILK
BARN

100'
SETBACK

PROPOSED SHADE STRUCTURE
(261' X 34')

PROPOSED SHADE STRUCTURE
(262' X 42')

A.P.N.
016-200-005

PROPOSED
MATERNITY BARN
(300' X 160')

750W 360° FLOOD
LIGHT (HOODED)

110'

125'

66'

137'

27'

248'
TO PROPERTY LINE

52'
TO PROPERTY LINE

A.P.N.
016-200-028

750W 180° FLOOD LIGHT

PROPOSED SHADE STRUCTURE (800' X 25')

100'
SETBACK

167'

OPEN LOT
CORRALS

OPEN LOT
CORRALS

PROPOSED SHADE STRUCTURE (800' X 25')

EXISTING UNPERMITTED CALF
HUTCHES TO BE REMOVED

PROPOSED CALF
HUTCHES

203'

HAY BARN
(188' X 82')

HAY BARN
(105' X 54')

HAY BARN

MATERNITY

750W 360° FLOOD LIGHT (HOODED)

750W 180° FLOOD LIGHT

MILK BARN

SHOP

EQUIPMENT
SHADES

100'
SETBACK

PROPOSED SHADE STRUCTURE (960' X 20')

EXISTING UNPERMITTED FENCELINE
TO BE RELOCATED 19' WEST

DIRT ROAD DAIRY
ACCESS

20'
TO PROPERTY LINE

43'
TO PROPERTY LINE

100'
SETBACK

162'
TO PROPERTY LINE

OPEN LOT
CORRALS

OPEN LOT
CORRALS

A.P.N.
016-200-029

PROPOSED
OPEN LOT CORRAL

RESIDENCE

RESIDENCE

PROPOSED SHADE STRUCTURE (608' X 20')

PROPOSED SHADE STRUCTURE (608' X 20')

PROPOSED SHADE STRUCTURE (608' X 15')

PROPOSED SHADE S

PROPOSED FEED STORAGE AREA

PROPOSED SHADE STRUCTURE (600' X 20')

OPEN LOT
CORRAL

OPEN LOT
CORRAL

OPEN LOT
CORRAL

OPEN LOT
CORRAL

OPEN LOT
CORRAL

OPEN LOT
CORRAL

OPEN LOT
CORRAL

PROPOSED SHADE
STRUCTURE
(85' X 30')

PROPOSED SHADE
STRUCTURE
(85' X 30')

PROPOSED SHADE
STRUCTURE
(85' X 30')

600'
TO PROPERTY LINE

RESIDENCE

PROPOSED CONCRETE SILAGE
STORAGE PAD (362'X512')
AREA TO BE REGRADED

750W 180° FLOOD LIGHT

PROPOSED SHOP
(45' X 25')

PROPOSED COMMODITY
BARN (75' X 50')

100'
SETBACK

A.P.N.
016-200-016

50'
RIGHT OF WAY

750W 360° FLOOD LIGHT (HOODED)
(TYP.4)

EXISTING IRRIGATION WELL

A.P.N.
016-200-012

EXISTING DOMESTIC WELL (UTILIZED FOR FIRE PROTECTION)

RECYCLED ROAD
BASE DAIRY ACCESS

30'
TO PROPERTY LINE

RECYCLED ROAD BASE DAIRY ACCESS

EXISTING IRRIGATION WELL

NORTH

100' 0' 100'

OWNER/OPERATOR	JOE SOZINHO
MAILING ADDRESS	12252 7TH AVENUE HANFORD, CA 93230
FACILITY ADDRESS	7205 HOUSTON AVENUE HANFORD, CA 93230
A.P.N	016-200-005, 016-200-028, 016-200-029
COUNTY	KINGS COUNTY

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REVISIONS

DATE	BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTE FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3115
www.4creeks.com
DRN BY: AC
CHK BY: TE

CONSTRUCTION PLAN
SOZINHO DAIRY #5
7205 HOUSTON AVENUE
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING
PROPOSED SITE PLAN

PLOT DATE:	MARCH 13, 2025
JOB NO.:	240504
FILE NAME:	240504 - SP
SCALE:	SEE SHEET
SHEET NO.:	1 OF 1

Appendix B

Biological Evaluation

LIVE OAK
ASSOCIATES, INC.

SOZINHO #5 DAIRY IMPROVEMENTS
BIOLOGICAL EVALUATION
KINGS COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Vice President
Natalie Neff, Staff Ecologist

Prepared for

Issac Garcia
4Creeks, Inc.
324 S. Santa Fe Suite A
Visalia, CA 93292

September 3, 2025 PN 2885-01

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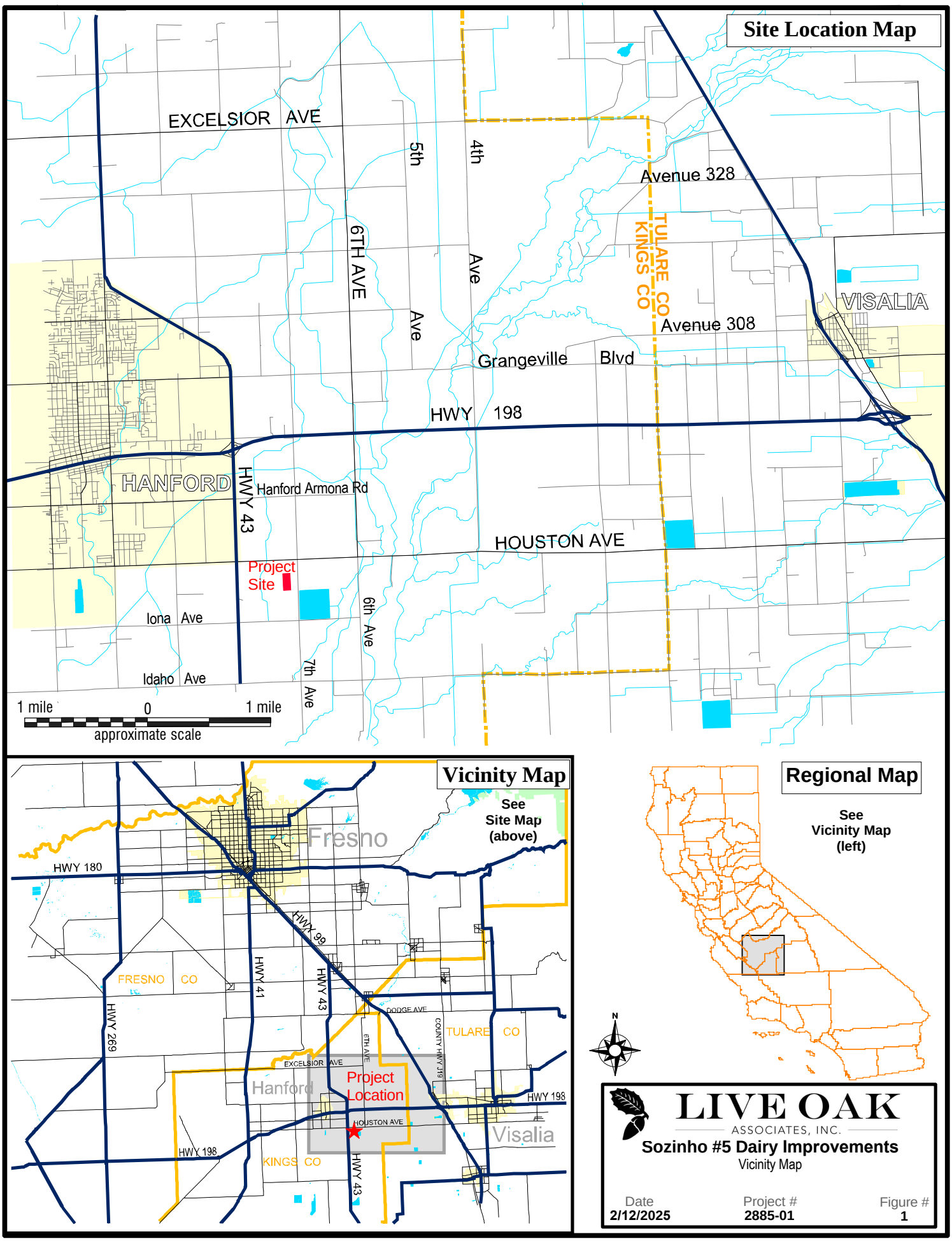
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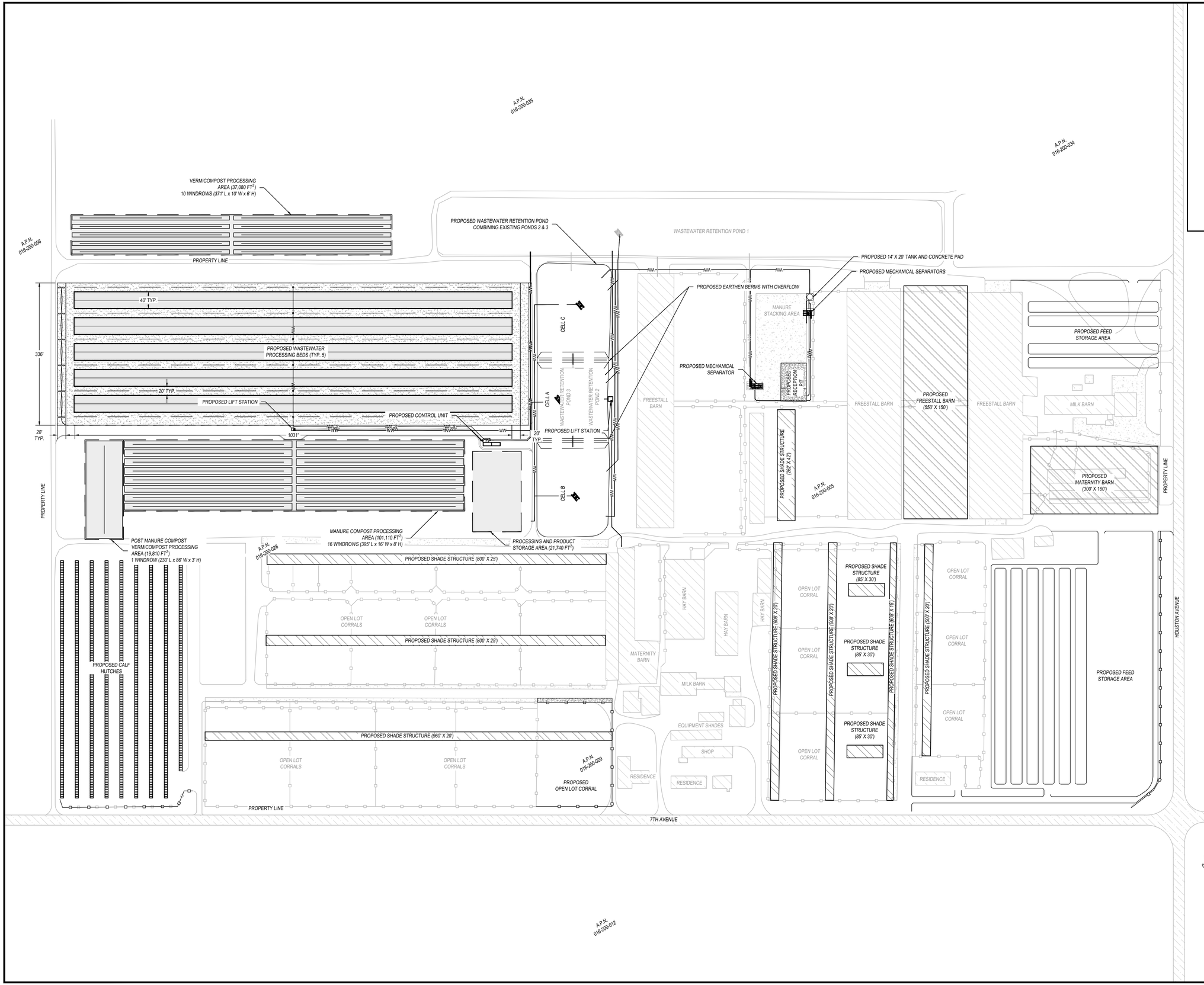
1.0 INTRODUCTION

The technical report that follows describes the biotic resources of areas within and adjacent to the existing Sozinho #5 Dairy facility where improvements are proposed (hereafter referred to as the "site" or "project site") and evaluates possible impacts to sensitive or protected biological resources that could result from these improvements (hereafter referred to as the "project"). The project site is located in northeast Kings County approximately 0.75 miles east of State Route 43 and 2.25 miles south of State Route 198, southwest of the intersection of Houston Avenue and 7th Avenue. (Figure 1). The project site is located within the Remnoy U.S. Geological Survey (USGS) 7.5-minute quadrangle; Section 9, Township 19 South, Range 22 East (Mt. Diablo Base and Meridian).

1.1 PROJECT DESCRIPTION

The project consists of the combination of two (2) existing lagoons into one (1) lagoon with two (2) constructed earthen berms in an existing lagoon, two (2) mechanical separators, one (1) reception tank and concrete pad, one (1) reception pit, five (5) wastewater processing beds with a total area of 8.58 acres (1,112' x 336'), one (1) product storage area, three (3) compost processing areas, two (2) feed storage areas, nine (9) rows of calf hutches, eleven (11) corral shade structures, one (1) open lot corral, one (1) maternity barn, and one (1) freestall barn. The proposed improvements are located over the existing Sozinho Dairy #5 facility and crops. Improvements will allow the facility to further treat wastewater generated by facility operations and will grow cattle in a healthy, well-managed, cattle-friendly environment. These improvements have a collective footprint of approximately 40 acres. A site plan is presented in Figure 2.


Site Location Map
EXCELSIOR AVE
5th
4th
Avenue 328
6TH AVE
Ave
Ave
TULARE CO
KINGS CO
VISALIA
Avenue 308
Grangeville
Blvd
HWY 198
HANFORD
HWY 43
Hanford Armona Rd
HOUSTON AVE
Project Site
Iona Ave
6th Ave
Idaho Ave
7th Ave
1 mile
0
1 mile
approximate scale
Vicinity Map
See Site Map (above)
Fresno
HWY 180
HWY 99
FRESNO CO
HWY 41
HWY 43
HWY 269
DODGE AVE
TULARE CO
COUNTY HWY J19
6TH AVE
EXCELSIOR AVE
Hanford
Project Location
HOUSTON AVE
HWY 198
Visalia
HWY 198
KINGS CO
HWY 43
Regional Map
See Vicinity Map (left)
N
LIVE OAK
ASSOCIATES, INC.
Sozinho #5 Dairy Improvements
Vicinity Map
Date
2/12/2025
Project #
2885-01
Figure #
1



OWNER/OPERATOR	JOE SOZINHO
MAILING ADDRESS	12252 7TH AVENUE HANFORD, CA 93230
FACILITY ADDRESS	7205 HOUSTON AVENUE HANFORD, CA 93230
A.P.N	016-200-005, 016-200-028, 016-200-029, 016-200-035
COUNTY	KINGS COUNTY

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DRAWING TRACKER

DATE	VERSION	DRWN BY	CHK BY	CHK BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
P.O. BOX 3600
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215

CONSTRUCTION PLAN
SOZINHO DAIRY #5
7205 HOUSTON AVENUE
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING
PROPOSED SITE PLAN

PLOT DATE:	Jan 27, 2025
JOB NO.:	240504
FILE NAME:	240504 - SP
SCALE:	SEE SHEET
SHEET NO.:	1 OF 1

1.2 REPORT OBJECTIVES

Development of agricultural areas has the potential to damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, and/or covered by local policies and ordinances. Specifically, this investigation and report were completed in compliance with Policy DE 3.3a of the Dairy Element of the Kings County General Plan, which requires all applications for new or expanded dairies to include a Biological Resources Survey for wetlands and habitat for sensitive species. As such, the objectives of this report are to summarize all site-specific information related to existing biological resources and, if necessary, identify appropriate avoidance and mitigation measures that would reduce the magnitude of potential project-related impacts to biological resources.

1.3 STUDY METHODOLOGY

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2024), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2024), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region. A reconnaissance-level field survey of the project site was conducted on May 17, 2024 by LOA biologist Natalie Neff. This survey consisted of a visual inspection of the survey area while systematically walking the site in order to assure full visual coverage. During the field visit the principal land uses of the site were identified and the constituent plants and animals of each were noted. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the dairy expansion and to assess the need for more detailed studies that could be warranted if potentially sensitive biotic resources were identified in this initial survey.

2.0 EXISTING CONDITIONS

2.1 PROJECT SITE

The project site consists entirely of ruderal (i.e. disturbed) land. Immediately surrounding lands consist of the existing dairy and agricultural land in every direction. Topographically, the site is relatively level at an average elevation of approximately 236 ft. National Geodetic Vertical Datum (NGVD).

The project site experiences a Mediterranean climate where warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation within the project site is about 9 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain. Storm water readily infiltrates the soils.

Aquatic features in the near vicinity of the site include two dairy wastewater retention ponds, one of which is proposed for the construction of two earthen berms within it, an irrigation ditch approximately 0.2 miles west of the project site, a seasonal basin approximately 0.4 miles northwest of the project site, and a percolation basin approximately 200 feet southeast of the project site. Guernsey Slough and Cross Creek are located approximately 1.7 miles southeast of the project site and 1.7 miles east of the project site respectively.

Two soil mapping units occur on the project site: Wasco sandy loam, 0-5 percent slopes and Kimberlina fine sandy loam, saline-alkali (California Soil Resource Lab, 2024). These soil mapping units are not considered hydric soils, meaning the soil would not be prone to wetland development.

Soils of the project site have been substantially altered through ground disturbance during initial dairy and agricultural development, and dairy and agricultural operations. As a result, the soils of the site no longer maintain their native soil characteristics and would, therefore, have no particular significance to biological resources of the site.

2.2 BIOTIC HABITATS/LAND USES

Natural biotic habitats are absent from the project site due to years of agricultural uses and activities associated with dairy operations. The land use of the project site can best be characterized as ruderal. A list of the vascular plant species observed within the project site and a list of the terrestrial vertebrates using, or potentially using, the site is provided in Appendices A and B, respectively.

Ruderal lands on the site have experienced disturbance from activities associated with historic farming and ongoing dairy use of the site. At the time of LOA's field survey, vegetation was largely restricted to the berms of the wastewater pond, cultivated wheat fields, and the edges of the cultivated wheat fields. Vegetation consisted primarily of weedy forbs including Palmer amaranth (*Amaranthus palmeri*), flax leaf horseweed (*Erigeron bonariensis*), London rocket (*Sisymbrium irio*), annual yellow sweet clover (*Melilotus indicus*), and cheeseweed (*Malva parviflora*).

The site offers little habitat value for many wildlife species. Despite the site's proximity to an irrigation ditch, a seasonal basin, and a percolation basin, amphibians and aquatic reptiles like turtles are expected to be absent from the site due to the lack of suitable aquatic breeding habitat on the site and unsuitable aestivation habitat within the site.

Though amphibians and aquatic reptiles are expected to be absent, some common terrestrial reptile, bird, and mammal species are expected to use the site. Reptile species that may forage on the site include the side-blotched lizard (*Uta stansburiana*) (observed) and snakes such as the gopher snake (*Pituophis melanoleucus*) and common kingsnake *(Lampropeltis getulus*), though these species' numbers would be expected to be quite low, if present at all.

Resident bird species expected to use this habitat would include red-winged blackbirds (*Agelaius phoeniceus*), Brewer's blackbirds (*Euphagus cyanocephalus*), mourning doves (*Zenaida macroura*), and killdeer (*Charadrius vociferus*), among others. Wintering birds that may utilize the site include the savannah sparrow (*Passerella sandwichensis*), American pipit (*Anthus rubescens*), white-crowned sparrow (*Zonotrichia leucophrys*) and Say's phoebe (*Sayornis saya*),

among others. Summer migrants such as the barn swallow (*Hirundo rustica*) would be expected to forage over the site as well.

Several California ground squirrel (*Otospermophilus beecheyi*) burrows were observed along the north edge of the proposed stacking bed location. Burrows were also observed within the vicinity of the project site along the edges of the wheat fields and in scattered locations within the dairy. Other rodents that may occur on the site in limited numbers include Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), house mouse (*Mus musculus*), and Norway rat (*Rattus norvegicus*).

The site offers some foraging opportunities for mammalian and avian predators. Raptors such as red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and barn owls (*Tyto alba*) may occasionally forage over the site. Various species of bat may forage over the site for flying insects and disturbance-tolerant mammalian predators such as raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), and coyotes (*Canis latrans*) may occasionally forage on or pass through the site as well.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.0, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such a listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2024). Collectively, these plants and animals are referred to as "special status species."

A review of the California Natural Diversity Data Base (CNDDB) Bios 5 Data Viewer (CDFW 2024) identified no special status plant species occurrences on or in the near vicinity of the project site, and the project site provides no habitat for special status plant species due to disturbance from decades of dairy and farming activities. The following special status animal species have been documented in the project vicinity: Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), and San Joaquin kit fox (*Vulpes macrotis mutica*). The potential for each of these special status species to occur on the project site is discussed below.

2.3.1 Swainson's Hawk (California Threatened)

The Swainson's hawk typically nests in large trees along riparian systems, but may also nest in oak groves, or lone, mature trees in agricultural fields or along roadsides. Nest sites are typically located adjacent to suitable foraging habitat such as grasslands, lightly grazed pastures, or alfalfa or other hay crops. In the Central Valley, California voles account for about 45% of non-insect prey taken by the Swainson's hawk, followed by birds (32%), and gophers, mice, and other small mammals (20%) (Estep 1989). Insects comprise a large proportion of individual prey items, but a negligible proportion of total prey biomass.

During the May 17th survey, a Swainson's hawk was spotted flying over the project site. Though the project site does not contain any trees, several mature trees lie within 0.25 mile of the project site. These large, mature trees could provide suitable nesting habitat for Swainson's hawk. There are 32 CNDDB nesting occurrences of Swainson's hawk within 10 miles of the project site and over 20 ebird sightings within the vicinity as well. The ruderal lands of the project site may occasionally be used for foraging by the Swainson's hawk; however, the history of ground disturbance due to dairy operations and farming activities such as wheat cultivation likely limits the availability of vertebrate prey across the site, reducing its foraging suitability for this species.

2.3.2 Tricolored Blackbird (California Threatened)

Tricolored blackbirds historically bred in marshes across California's Central Valley but are now most often found nesting in soy and wheat fields due to loss of wetland habitat. These birds nest closely together in breeding colonies made up of thousands of mating pairs. They are

opportunistic foragers, consuming a variety of invertebrates and grains found in agricultural fields and grasslands.

Two CNDDB nesting occurrences from 2014 were documented 5.75 miles southwest and 11.5 miles southwest of the project site and there are several recent ebird sightings of this species as well. Given the presence of tricolored blackbirds in the area and the wheat fields on the project site, tricolored blackbirds could nest on the project site.

2.3.2 Loggerhead Shrike (California Species of Special Concern)

This bird frequents open habitats with sparse shrubs and trees and is a common species found in cropland. It requires elevated perches and trees for nesting. The loggerhead shrike's diet consists of arthropods and small vertebrates that they will spear on the end of sharp branches or barbed wire fences.

Although multiple ebird sightings of this species were documented within 10 miles of the project site, there were no CNDDB occurrence within 10 miles of the project site and there are no suitable nesting trees on or within 250ft of the project site. Nesting loggerhead shrikes would therefore be absent from the project site, though they could occasionally forage or fly over the project site.

2.3.3 Burrowing Owl (California Species of Special Concern; California Candidate Endangered)

The burrowing owl is associated with open habitats including grasslands, grazed pastures, open shrub lands, and occasionally agricultural fields. The primary indicators of suitable habitat for this species are relatively short vegetation and underground burrows or similar features for roosting and nesting. In California, burrowing owls primarily roost and nest in the burrows of California ground squirrels, but may also use badger, coyote, or fox dens. The burrowing owl diet includes a broad array of arthropods, small rodents, birds, reptiles, and amphibians. In California, burrowing owl survival and reproductive success appear to be linked to rodent populations, particularly California vole (Gervais et al. 2006)

Although several California ground squirrel burrows were found on site (which provide potential burrowing owl habitat), there was no sign of burrowing owls on site. There are nine CNDDB

burrowing occurrences documented within 10 miles of the project site, and five eBird occurrences within that distance. Though the tall, thick wheat fields provide unsuitable foraging habitat for this species, open areas with sparse vegetation adjacent to the project site provide possible habitat for this species and burrows on and adjacent to the project site could be utilized by individuals. As a result, burrowing owls may occur on the project site or immediately surrounding lands.

2.3.4 San Joaquin Kit Fox (Federally Endangered, California Threatened)

The San Joaquin kit fox (SJKF) historically occupied the dry plains of the San Joaquin Valley from San Joaquin County to southern Kern County but has been extirpated from much of its historic range. Core SJKF populations are located in the natural lands of western Kern County, the Carrizo Plain Natural Area in San Luis Obispo County, and the Ciervo-Panoche Natural Area in western Fresno and eastern San Benito Counties (USFWS 1998). The kit fox prefers habitats of open or low vegetation with loose soils, including various types of grassland and scrub. It may also be found in urban settings and in areas adjacent to tilled or fallow fields. The SJKF requires underground dens to raise pups, regulate body temperature, and avoid predators.

Habitat for kit fox is absent to extremely marginal within the project site. Eightenn CNDDB recorded occurrences of this species are documented within a 10-mile radius of the project site. The most recent San Joaquin kit fox occurrence was in 2006, approximately 5 miles northwest of the project site within the City of Hanford. Currently, there are no extant kit fox populations known to occur in Kings County. No evidence of San Joaquin kit fox denning was found on the site during LOA's field survey. The site represents extremely marginal habitat for the kit fox due to its disturbed landscape and human activities. Moreover, the site is situated within a mosaic of agricultural lands that have been identified as low suitability for kit fox (Cypher et al. 2013), such that kit fox would be unlikely to occur in the project vicinity in the first place. At most, kit fox may, on rare occasions, pass through the site during dispersal movements.

2.4 NESTING BIRDS AND RAPTORS

There are very few trees or large bushes located on or within 250 ft of the project site, which limits the availability of nesting habitat for birds and there are no suitable nesting trees for

raptors on or within 500 ft of the project site. Despite the lack of trees and bushes, some avian species may still utilize the site for nesting. Disturbance tolerant ground nesters like Killdeer (*Charadrius vociferus*) could nest in the hardpacked earth within and adjacent to the project site and birds that build mud nests, like Cliff Swallows (*Petrochelidon pyrrhonota*), have the potential to nest in freestall barns in and adjacent to the project site.

2.5 WETLANDS AND OTHER JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the California Regional Water Quality Control Board (RWQCB).

Potential jurisdictional waters and wetlands are absent from the project site. The nearest natural drainages are Guernsey Slough and Cross Creek. Guernsey Slough lies approximately 1.7 miles southeast of the project at the nearest point and Cross Creek lies approximately 1.7 miles east of the project site at the nearest point. Guernsey Slough's natural drainage features have been heavily altered or destroyed due to decades of agriculture and development. Cross Creek has maintained most of its natural features, though it too has been altered by agriculture and development.

3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 KINGS COUNTY GENERAL PLAN DAIRY ELEMENT BIOLOGICAL RESOURCES SURVEY (POLICY DE 3.3A):

The Kings County General Plan contains a Dairy Element that requires environmental review of all new dairies or the expansion of an existing dairy. The environmental review requirements that pertain to biological resources are stated below.

> "The results of a Biological Resources Survey shall be made a part of the Technical Report submitted with each application to either establish a new dairy or expand an existing dairy. The survey of habitat for sensitive species and wetlands shall be conducted by a qualified wildlife biologist prior to initiation of grading for each dairy facility to confirm the presence or absence of any nesting activity at each location. If habitat for sensitive species or wetlands is found, appropriate measures shall be taken to avoid destruction of active dens or nests. An appropriate buffer zone shall be established around any active den or nest based on consultation with representatives of the California Department of Fish and Wildlife. Construction activities shall be restricted in this zone until the qualified biologist has determined that the young animals are no longer using the dens or nests. Passive relocation methods shall be used by the qualified biologist in the event that removal of any wildlife from the impact area is deemed necessary by a regulatory agency with appropriate jurisdiction."

3.2 THREATENED AND ENDANGERED SPECIES

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as "threatened" or "endangered" under one or both Acts, and/or as "rare" under CESA. Under both Acts, "endangered" means a species is in danger of extinction throughout all or a significant portion of its range, and "threatened" means a species is likely to become endangered within the foreseeable future. Under CESA, "rare" means a species may become endangered if their present environment worsens. Both Acts prohibit "take" of listed species, defined under CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt,

pursue, catch, capture or kill" (California Fish and Game Code, Section 86), and more broadly defined under FESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The USFWS commonly interprets "take" to include the loss of habitat utilized by a listed species.

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.3 CALIFORNIA FULLY PROTECTED SPECIES

The classification of certain animal species as "fully protected" was the State of California's initial effort in the 1960s, prior to the passage of the California Endangered Species Act, to identify and provide additional protection to those species that were rare or faced possible extinction. Following CESA enactment in 1970, many fully protected species were also listed as California threatened or endangered. The list of fully protected species are identified, and their protections stipulated, in California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and fish (5515). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except in conjunction with necessary scientific research and protection of livestock.

3.4 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as "(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species."

The Act goes on to define "conservation" as "the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary."

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.
The USFWS designates critical habitat for a species by identifying general areas likely to contain the species' "primary constituent elements," or physical or biological features of the landscape that the species needs to survive and reproduce. Although a unit of critical habitat for a particular species may be quite large, only those lands within the unit that contain the species' primary constituent elements are actually considered critical habitat by the USFWS.

3.5 MIGRATORY BIRDS

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

3.6 BIRDS OF PREY

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5), which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted

pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.7 NESTING BIRDS

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

3.8 HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP), developed by the project applicant in collaboration with the USFWS and/or NMFS, ensures that such minimization and mitigation will occur, and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP), developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.9 WETLANDS AND OTHER "JURISDICTIONAL WATERS"

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA's passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency

(EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Waters of the U.S. are presently defined by the EPA and USACE's joint 2023 Revised Definition of 'Waters of the U.S.' Rule (2023 WOTUS Rule), with certain interpretive modifications imposed by the U.S. Supreme Court's May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*. Generally speaking, these waters include:

- Waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- The territorial seas
- Interstate waters including interstate wetlands.
- Impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries to other waters of the U.S. that are relatively permanent, standing or continuously flowing bodies of water
- Wetlands adjacent to other waters of the U.S. that have a continuous surface connection to those waters

The 2023 WOTUS Rule also defines a number of exclusions from the definition of waters of the U.S., many of which are longstanding exclusions from earlier regulatory regimes. These generally include:

- Waste treatment systems
- Prior converted cropland
- Ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water
- Certain artificial features, e.g. irrigation basins, swimming pools, borrow pits, and artificially irrigated areas
- Swales and erosional features characterized by low volume, infrequent, or short duration flow

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board (SWRCB) has regulatory authority to protect the water quality of all surface water and groundwater in the State of California. In practice, however, not all such waters are considered jurisdictional "waters of the State." Broadly, waters of the State include all waters of the U.S., all natural wetlands, certain artificial wetlands, and various other features. Nine RWQCBs, each corresponding to a different region of the state, regulate discharges of fill and pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining a Section 404 Clean Water Act permit. Discharges into waters of the State that are not also waters of the U.S. require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be

prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

4.0 PROJECT IMPACTS

The following impact analysis assumes project-related disturbance to approximately 40 acres within the existing Sozinho Dairy #5 property, as shown in figure 2.

4.1 PROJECT IMPACTS TO SPECIAL STATUS SPECIES

Potential project impacts to each of the special status species identified as having the potential to occur in the project vicinity are discussed below, as well as measures to minimize potential impacts.

4.1.1 Special Status Plants

Impact: The project site and surrounding lands have experienced several decades of farming and dairy use and contain no suitable habitat for special status plant species. Special status plants have no appreciable potential to occur on site or to be affected by the project.

Mitigation: None warranted.

4.1.2 Swainson's Hawk

Impact: The project site does not contain any suitable nesting trees, however, there are many mature trees within a half-mile radius of the project site. The distance of these trees from the project site and the high level of human and vehicular activity associated with the surrounding dairy operations are such that, even if Swainson's hawks are nesting in any of the trees at the time of construction, they would be unlikely to distinguish project construction activities from existing ambient disturbance.

The loss of approximately 40-acres of marginal foraging habitat situated within a region with many square miles of similar to more suitable foraging habitat in the form of agricultural fields would not constitute a significant loss of Swainson's hawk foraging habitat or significantly impact regional populations of Swainson's hawks.

Mitigation:

***Mitigation Measure 4.1.4a* (*Temporal Avoidance*).** In order to avoid any potential impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside of this species' nesting season, typically defined as March 1-September 15.

Mitigation Measure 4.1.4b (Preconstruction Surveys). If construction activities must occur between March 1 and September 15, then within 10 days prior to the start of construction, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ¼ mile of the work area. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure 4.1.4c (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

4.1.3 Burrowing Owl

Impact: Burrows suitably sized for burrowing owl nesting and roosting were observed on the project site. Though much of the project site is unsuitable for burrowing owls due to the tall, dense nature of the wheat field, the abundance of burrows on and adjacent to sparsely vegetated lands on and within the vicinity of the project site provide potential habitat for this species. Therefore, it is possible that burrowing owls use the project site for foraging, nesting, or roosting on occasion, though no signs of burrowing owl were observed. These small raptors are protected under the Migratory Bird Treaty Act, California Fish and Game Code, and the California Endangered Species Act. Project-related grading activities have the potential to bury owls that may retreat to burrows ahead of heavy equipment. Mortality of individual birds would be a violation of state and federal law.

Mitigation. Prior to ground disturbance activities, the following measure(s) will be implemented as necessary:

Mitigation Measure 4.1.5a (Take Avoidance Survey). A take avoidance survey for burrowing owls will be conducted by a qualified biologist no less than 14 days prior to the start of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all potential roosting and nesting habitat on and within 200 meters of project impact areas, where accessible.

Mitigation Measure 4.1.5b (Avoidance of Active Nests). If pre-construction surveys are undertaken during the breeding season (February 1 through August 31) and active nest burrows are located within or near construction zones, a construction-free buffer of 200 meters will be established around all active owl nests. If a smaller buffer is required for the project to move forward, a qualified biologist will determine if a smaller buffer can be implemented that ensures the owls are adequately protected from disturbance. Factors such as existing levels of disturbance, proposed levels of disturbance, and topography or structures that may shield the owls from disturbance will be taken into consideration in evaluating if a smaller buffer is feasible. Any work conducted within 200 meters of an active nest, in accordance with a smaller buffer as determined by a biologist, will be monitored by a biologist until they have observed the owl(s) for at least three days with no signs of disturbance or distress. The buffer areas will be enclosed with temporary fencing or flagging, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season. If the owls are located such that the project cannot be completed without disturbing them, then the California Department of Fish and Game will be consulted to determine if an incidental take permit is necessary and develop a plan to relocate the owl(s) after the breeding season has ended (i.e. once all young have left the nest).

Implementation of the above measures will minimize potential project impacts to burrowing owl and will ensure compliance with federal and state laws protecting this species.

4.1.4 San Joaquin Kit Fox

Impact: Habitat for the San Joaquin kit fox is absent to extremely marginal within the project site due to dairy activity, lack of denning habitat, and poor foraging opportunity. No burrows suitable for kit fox denning were observed on or adjacent to the site, and no evidence of San Joaquin kit fox use of the site was found during LOA's field survey. At most, kit fox may, on rare occasions, pass through the site during dispersal movements. Therefore, proposed project activities are unlikely to result in any impacts to San Joaquin kit fox.

Mitigation: No mitigation is warranted.

4.2 IMPACTS TO NESTING BIRDS AND RAPTORS INCLUDING TRICOLORED BLACKBIRD

Impact: The project site provides nesting habitat for a number of resident and migratory bird species including tricolored blackbird. Even the most disturbed areas of the project site could be used by disturbance-tolerant birds. Nearly all native avian species are protected by state and federal laws previously described in Sections 3.5-3.7. Birds nesting within or immediately

adjacent to the project site at the time of project construction have the potential to be injured or killed by project activities. In addition, project activities could disturb birds nesting within or adjacent to work areas such that they would abandon their nests. Project activities that adversely affect the nesting success of birds or result in the mortality of individual birds would violate state and federal laws.

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

> ***Mitigation Measure 4.2a (Avoidance).*** In order to avoid impacts to native nesting birds, including the tricolored blackbird, the project will be constructed, if feasible, outside the nesting season, or between September 1st and January 31st.
>
> ***Mitigation Measure 4.2b (Preconstruction Surveys).*** If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and native bird nests within 15 days prior to the start of these activities. The survey will include the proposed work area(s) for that particular phase of work and surrounding lands within 250 feet, where accessible, for all nesting birds. If no active nests are found within the survey area, no further mitigation is required.
>
> ***Mitigation Measure 4.2c (Establish Buffers).*** Should any active nests be discovered in or near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will minimize potential project impacts to nesting native birds and will ensure compliance with state and federal laws protecting these species.

4.3 IMPACTS TO WETLANDS AND OTHER JURISDICTIONAL WATERS

Impact: Potential jurisdictional waters and wetlands are absent from the project site, and the project will not impact any such resources.

Mitigation: None warranted.

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Zeiner, David C., William F. Laudenslayer, Kenneth E. Mayer and Marshal White. Ed. 1988. California's wildlife, volume I, amphibians and reptiles, volume II, birds, and volume III, mammals. Department of Fish and Game. Sacramento, CA. Digitized and updated as life history accounts in the California Wildlife Habitat Relationships System, California Department of Fish and Wildlife, Available at: https://wildlife.ca.gov/Data/CWHR/Life-History-and-Range

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The plant species listed below were observed on the Sozinho #5 Dairy project site during a survey conducted by Live Oak Associates, Inc. on May 17, 2024. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

AMARANTHACEAE – Amaranth Family		
Amaranthus blitoides	Mat amaranth	FACU
Amaranthus palmeri	Palmer's pigweed	FACU
Amaranthus retroflexus	Red-root amaranth	FACU
ASTERACEAE – Daisy Family		
Erigeron bonariensis	Flax-leaf fleabane	FACU
Lactuca serriola	Prickly lettuce	FACU
Centromadia pungens	Common spikeweed	FAC
BRASSICACEAE – Mustard Family		
Lepidium didymum	Lesser Swinecress	UPL
Sisymbrium irio	London Rocket	UPL
CHENOPODIACEAE – Goosefoot Family		
Bassia hyssopifolia	Five-Hook Bassia	FACU
FABACEAE – Legume Family		
Melilotus indicus	Annual yellow sweet clover	FACU
MALVACEAE – Mallow Family		
Malva parviflora	Cheeseweed	UPL
POACEAE – Grass Family		
Digitaria spp.	Crabgrass	FACU
Echinochloa colona	Jungle rice	FAC
Echinochloa crus-galli	Barnyard grass	FACU
Hordeum jubatum	Foxtail barley	FAC
Leptochloa fascicularis	Bearded sprangletop	
Triticum aestivum	Cultivated wheat	UPL
POLYGONACEAE – Buckwheat Family		
Polygonum aviculare	Prostrate knotweed	FAC
ZYGOPHYLLACEAE – Caltrop Family		
Tribulus terrestris	Puncture vine	UPL

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site on May 17, 2024 have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Side-blotched Lizard (*Uta stansburiana*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)

CLASS: AVES (Birds)
ORDER: ANSERIFORMES (Waterfowl)
FAMILY: ANATIDAE (Ducks)
Mallard (*Anas platyrhynchos*)
ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)
FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)
White-faced Ibis (*Plegadis chihi*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Red-tailed Hawk (*Buteo jamaicensis*)
*Swainson's Hawk (*Buteo swainsoni*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)
*Black-necked stilt (*Himantopus mexicanus*)
FAMILY: CHARADRIIDAE (Plovers and relatives)
*Killdeer (*Charadrius vociferus*)
FAMILY: SCOLOPACIDAE (Sandpipers, Woodcocks, Curlews, and Snipes)
*Whimbrel (*Numenius phaeopus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
*Rock Pigeon (*Columba livia*)
*Eurasian Collared Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)

ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Burrowing Owl (*Athene cunicularia*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
*Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
Western Kingbird (*Tyrannus verticalis*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
California Scrub Jay (*Aphelocoma californica*)
*American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: TURDIDAE
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
*European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubescens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Yellow-rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and relatives)
Dark-eyed Junco (*Junco hyemalis*)
Lincoln's Sparrow (*Melospiza lincolnii*)
Savannah Sparrow (*Passerculus sandwichensis*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
*Red-winged Blackbird (*Agelaius phoeniceus*)
Tricolored Blackbird (*Agelaius tricolor*)
Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
FAMILY: FRIGILLIDAE (Finches)
Lesser Goldfinch (*Carduelis psaltria*)

American Goldfinch (*Spinus tristis*)
House Finch (*Carpodacus mexicanus*)
FAMILY: PASSERIDAE (Old World Sparrows)
*House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)
ORDER: RODENTIA (Rodents)
FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)
*California Ground Squirrel (*Otospermophilus beecheyi*)
FAMILY: GEOMYIDAE (Pocket Gophers)
*Botta's Pocket Gopher (*Thomomys bottae*)
FAMILY: MURIDAE (Old World Rats and Mice)
Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)
ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)
FAMILY: LEPORIDAE (Rabbits and Hares)
Brush Rabbit (*Sylvilagus bachmani*)
Desert Cottontail (*Sylvilagus audubonii*)
ORDER: CHIROPTERA (Bats)
FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)
Southern Long-nosed Bat (*Leptonycteris curasoae*)
FAMILY: VESPERTILIONIDAE (Evening Bats)
Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus)*
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)
FAMILY: MOLOSSIDAE (Free-tailed Bat)
Brazilian Free-tailed Bat (*Tadarida brasiliensis*)
ORDER: CARNIVORA (Carnivores)
FAMILY: CANIDAE (Foxes, Wolves, and relatives)
Coyote (*Canis latrans*)
Domestic Dog (*Canis lupus familiaris*)
FAMILY: FELIDAE (Felines)
*Feral Cat (*Felis catus*)
FAMILY: PROCYONIDAE (Raccoons and relatives)
Raccoon (*Procyon lotor*)
FAMILY: MEPHITIDAE (Skunks)
Striped Skunk (*Mephitis mephitis*)
ORDER: ARTIODACTYLA (Hoofed Mammals)
FAMILY: BOVIDAE (Cloven-hoofed ruminants)
*Domestic Cattle (*Bos taurus*)

APPENDIX C: SELECTED SITE PHOTOGRAPHS



Photo 1: Looking west at the wheat field in different stages of harvest. Proposed location of Biofiltro wastewater processing beds.



Photo 2: Example of burrows on edge of wheat field. Looking southwest from eastern edge.



Photo 3: Looking southeast from the northwest portion of the wheat field. Large, mature trees can be seen in the background. Proposed location of Biofiltro wastewater processing beds and storage area.



Photo 4: Looking northwest at wastewater processing beds, the proposed location for two earthen berms. Wheat field shown on the left and freestall barn with cows on the right.



Photo 5: Looking west inside freestall barn where a pipeline will be constructed.



Photo 6: Looking west at proposed location of stacking pad and mechanical separator.



Photos 7: Example of ground squirrel burrows on the north edge of the proposed stacking pad and mechanical separator location.



Photo 8: Looking west at proposed location of rerouted vacuum track.

Appendix C

Cultural Resources Records Search

California Historical Resources Information System



Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Tyler Esteves
4Creeks
324 S. Santa Fe, Suite A
Visalia, CA 93292

Record Search 24-175

Date: April 22, 2024

Re: Sozinho Dairy #5 Improvements

County: Kings

Map(s): Remnoy 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies completed within the project area. There have been no cultural resource studies completed within the one-half mile radius.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there are no recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch.

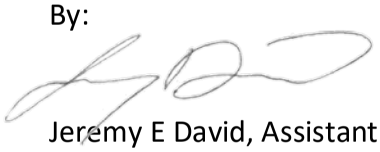
There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project proposes to construct BioFiltro wastewater processing beds and necessary infrastructure for wastewater management. Additionally, we understand this project area is an existing dairy and the ground surface has been heavily disturbed. No further cultural resource work is needed within the existing facility at this time. However, we understand the surrounding land is undeveloped agricultural land. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Therefore, prior to any ground disturbance activities on undeveloped ag land, we recommend a qualified, professional consultant conduct a field survey to determine if cultural resources are present. Further, if any cultural resources are unearthed during any ground disturbance activities, all work must halt in the area of the find and a qualified, professional consultant should be called out to assess the findings and make the appropriate mitigation recommendations. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:



Jeremy E David, Assistant Coordinator **Date**: April 22, 2024

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Appendix D

Sacred Lands File Letter

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Reginald Pagaling
Chumash

VICE-CHAIRPERSON
Buffy McQuillen
Yokayo Pomo, Yuki, Nomlaki

SECRETARY
Sara Dutschke
Miwok

PARLIAMENTARIAN
Wayne Nelson
Luiseño

COMMISSIONER
Isaac Bojorquez
Ohlone-Costanoan

COMMISSIONER
Stanley Rodriguez
Kumeyaay

COMMISSIONER
Laurena Bolden
Serrano

COMMISSIONER
Reid Milanovich
Cahuilla

COMMISSIONER
Vacant

EXECUTIVE SECRETARY
Raymond C. Hitchcock
Miwok, Nisenan

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 15, 2024

Tyler Esteves
4Creeks Inc.

Via Email to: tylere@4-creeks.com

Re: Sozinho Dairy #5 Project, Kings County

Dear Mr. Esteves:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Appendix E

Traffic Analysis Letter

Kings County
Association of Governments

339 W. D Street, Suite B
Lemoore, CA 93245
Tel. (559) 852-2654
Fax (559) 924-5632
www.kingscog.org

Member Agencies: Cities of Avenal, Corcoran, Hanford and Lemoore, County of Kings

April 10, 2024

Tyler Esteves
4Creeks, Inc.
324 S. Santa Fe St., Suite A
Visalia, CA 93292

Dear Mr. Esteves:

This memo is regarding your request for a traffic analysis for the Sozinho Dairy #5 proposed improvements project located at 7205 Houston Ave., Hanford, CA that will result in construction, installation, and operation of BioFiltro wastewater treatment beds and the necessary infrastructure for wastewater management. Based on the information below, this project is not expected to degrade the present Level of Service (LOS) on the nearby county roads of regional significance below acceptable levels.

Sozinho Dairy #5
Traffic Analysis

This project is not expected to increase the number of trips per day. Based on the following average daily traffic (ADT) figures for Houston Ave. and State Route (SR) 43, and the current LOS, it appears that the project would not significantly impact the operational capacity of these roads.

Roadway	ADT	Peak Hour	LOS
Houston Ave.:			
East of SR 43 West of 6th Ave.	3,109	319	B
SR 43:			
South of Houston Ave. North of Kansas Ave.	7300	710	B

If you have any questions regarding this matter, please call me at (559) 852-2678 or email at Terri.King@co.kings.ca.us.

Sincerely,

KINGS COUNTY ASSOCIATION OF GOVERNMENTS

Terri King

Terri King, Executive Director

Appendix F

Waste Management Plan

February 11, 2025

Mr. Lewis Lummen
Central Valley Regional Water Quality Control Board
1685 E. Street, Suite 200
Fresno, CA 93706

RE: Sozinho Dairy #5 Waste Management Plan Addendum

Dear Mr. Lummen,

Sozinho Dairy #5 (Facility) submitted a Waste Management Plan (WMP), completed by Matthew C. Sutton, P.E., on June 18, 2010. Recently, the Facility has proposed to revise the existing wastewater flow process with the addition/modification of the following items: two (2) earthen berms in an existing lagoon, two (2) mechanical separators, one (1) tank and concrete pad, one (1) reception pit, five (5) process water processing beds with the following dimensions (1,112' x 336'), one (1) product storage area, three (3) organic matter/manure processing areas, two (2) feed storage areas, nine (9) rows of calf hutches, eleven (11) corral shade structures, one (1) open lot corral, one (1) maternity barn, and one (1) freestall barn. The Facility has hired 4Creeks, Inc. (4Creeks) to amend the previously approved 2010 WMP to analyze the new proposed modifications to the wastewater process system and ensure the facility will still comply with the Reissued General Order No. R5-2013-0122 (General Order).

According to the calculations of the approved WMP completed by Matthew C. Sutton, P.E., in June of 2010, the Facility met the required wastewater storage for the 120-day required storage period (November 1st – February 28). The addition of proposed processing beds will increase the reduction of solids from the wastewater, prior to reaching the storage ponds. Additionally, the processing beds will increase the impervious area within the stormwater tributary area. According to the analysis completed by 4Creeks the proposed modifications will result in a total excess wastewater storage capacity of **7,968,523 gallons**. This analysis is demonstrated in the attached calculations and exhibits.

Based upon the results of the provided analysis, the Facility will meet the storage capacity requirements set forth by the General Order, once the proposed modifications become operational. No additional modifications to the facility will be required.

Operations and Maintenance of the existing wastewater retention ponds shall be conducted in accordance with the previous Waste Management Plan / Operations and Maintenance Plan provided to the Facility.

Respectfully,

Moises Ramirez, PE #88232

LICENSED PROFESSIONAL ENGINEER
MOISES RAMIREZ
C 88232
Exp. 03/31/26
CIVIL
STATE OF CALIFORNIA

VISALIA
324 S Santa Fe Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

HANFORD
308 N. Irwin St.
Hanford, CA 93230
559-802-3052
info@4-creeks.com

FRESNO
1444 Fulton St. Suite B11,
Fresno, CA 93721
559-802-3052
info@4-creeks.com

Attachments

A. Dairy Facility Wastewater Flow Diagram
B. Storm Water Tributary Area Map
C-2A. Wastewater Retention Pond 2A Detail
C-2B. Wastewater Retention Pond 2B Detail
C-2C. Wastewater Retention Pond 2C Detail

Appendices:

A. Wastewater Retention Pond Volume Analysis Summary
B. Normal Precipitation Data
C. FEMA Map
D. Evaporation History 1958 – 2010
E. Waste Management Plan, Sozinho Dairy #5
Completed by Matthew C. Sutton, P.E. Submitted to Regional Water Quality Control Board on June 18, 2010.

PROCESS FLOW KEYNOTES

1. *EXISTING WATER SUPPLY WELL:*
SUPPLIES ALL MILK BARN PROCESS WATER USE.

2. *EXISTING MILK BARN PROCESS WATER:*
SOURCE: WATER SUPPLY WELLS.
PLATE COOLER, ABOVE GROUND TANK, BARN FLUSH, SPRINKLER PENS, AND MISC. BARN WASH WATER.

3. *PROPOSED RECEPTION PIT:*
SOURCE: EXISTING MILK BARN PROCESS WATER AND FLUSH WATER.
PUMPS WASTEWATER OVER PROPOSED MECHANICAL SEPARATORS.

4. *PROPOSED PRIMARY MECHANICAL SEPARATOR:*
SOURCE: PROPOSED RECEPTION PIT.
WASTEWATER GRAVITY FLOWS INTO RECEPTION TANK OR TO PROPOSED WASTEWATER RETENTION POND 2A AND 2B.

5. *PROPOSED RECEPTION TANK:*
SOURCE: PROPOSED PRIMARY MECHANICAL SEPARATOR.
GRAVITY FLOWS INTO PROPOSED WASTEWATER RETENTION POND 2B OR POND 2A. SETTLED SOLIDS ARE PUMPED TO PROPOSED SECONDARY MECHANICAL SEPARATOR.

6. *PROPOSED SECONDARY MECHANICAL SEPARATOR:*
SOURCE: PROPOSED RECEPTION PIT & PROPOSED RECEPTION TANK.
GRAVITY FLOWS TO WASTEWATER RETENTION POND 2A OR POND 2B.

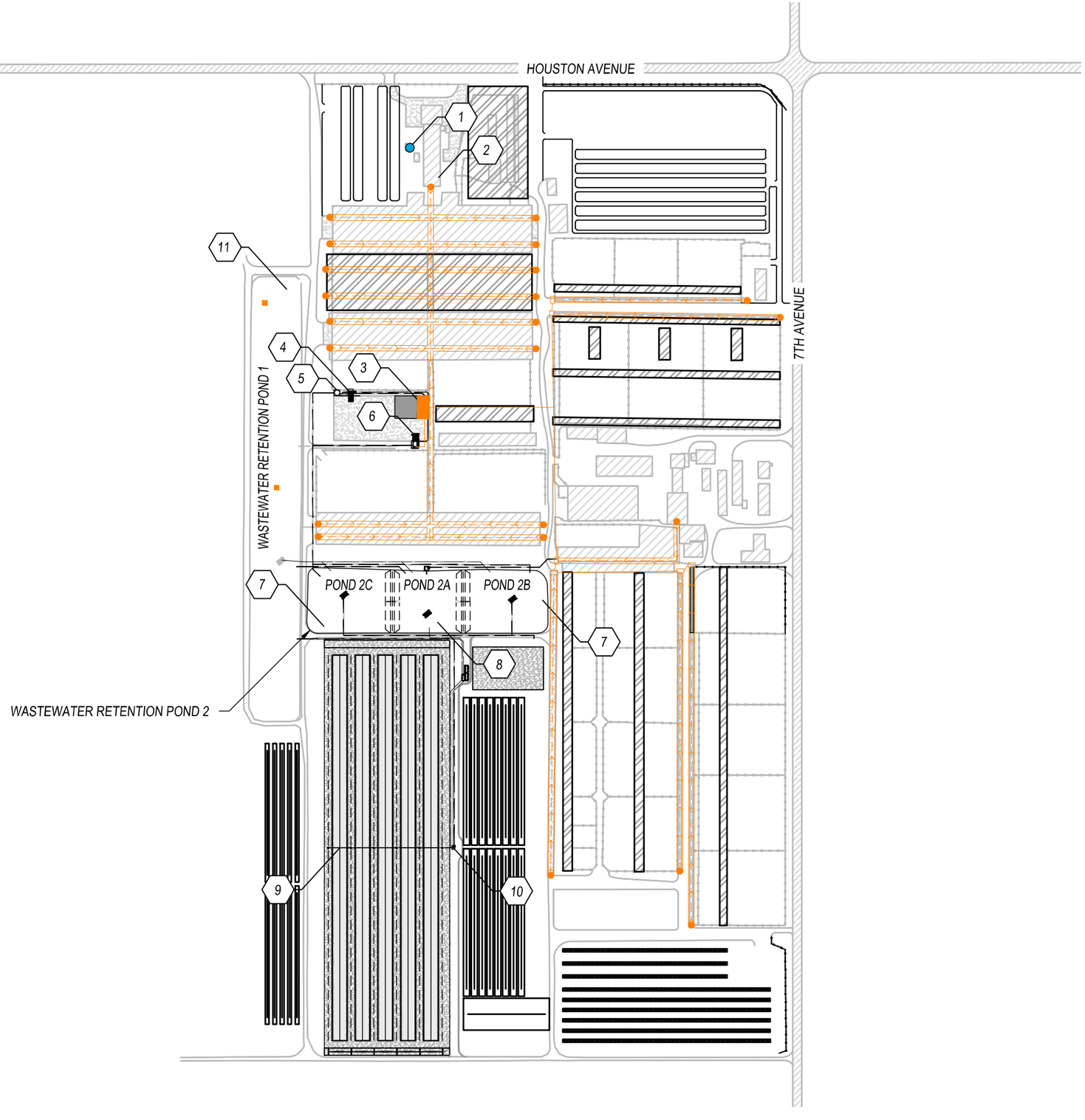
7. *WASTEWATER RETENTION PONDS 2A AND 2B:*
SOURCE: PROPOSED MECHANICAL SEPARATORS.
GRAVITY FLOWS INTO WASTEWATER RETENTION POND 2C.

8. *WASTEWATER RETENTION POND 2C:*
SOURCE: WASTEWATER RETENTION POND 2A AND 2B.
PROCESS WATER IS EITHER USED TO FLUSH THE FACILITY OR PUMPED TO THE PROCESS BEDS AS NEEDED.

9. *PROPOSED PROCESS WATER PROCESSING BEDS (TYP. 5):*
SOURCE: WASTEWATER RETENTION POND 2C.
PROCESS WATER RUNS THOUGH THE BIDA SYSTEM WHERE WATER IS THEN CONVEYED TO A PROPOSED LIFT STATION.

10. *PROPOSED LIFT STATION:*
SOURCE: PROPOSED PROCESS WATER PROCESSING BEDS.
PUMPS WASTEWATER POST PROCESSING BEDS TO WASTEWATER RETENTION POND 1.

11. *WASTEWATER RETENTION POND 1:*
SOURCE: PROPOSED LIFT STATION.
STORES WASTEWATER LONG TERM. PROCESS WATER IS USED FOR IRRIGATION AND CAN SUPPLY WATER BACK TO PONDS 2A, 2B, AND 2C.



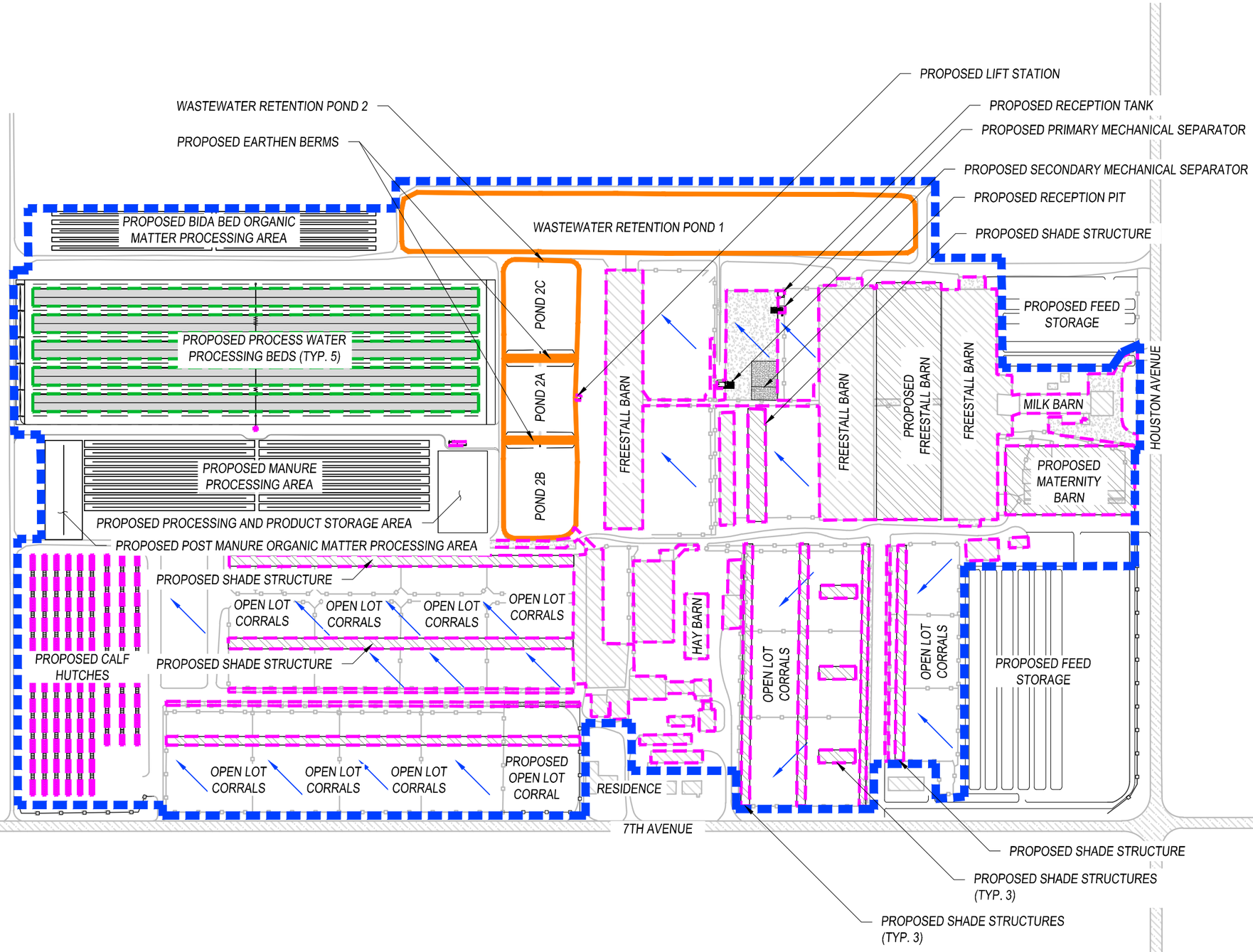
NORTH

JOB NO. 240504 | ATTACHMENT A | 10/14/2024 | SCALE: 1" = 300'

DAIRY FACILITY WASTEWATER FLOW DIAGRAM

SOZINHO DAIRY #5
KINGS COUNTY, CA

324 S. SANTA FE, STE. A
VISALIA, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS



LEGEND

- IMPERVIOUS AREA BOUNDARY
- TRIBUTARY AREA BOUNDARY
- WASTEWATER POND AREA
- BIDA BED SYSTEM AREA
- DIRECTION OF SLOPE

TOTAL AREA WITHIN MANURE HANDLING LIMITS: 3,280,356 SQ. FT.
TOTAL IMPERVIOUS AREA: 687,974 SQ. FT.
TOTAL POND AREA: 267,293 SQ. FT.
TOTAL BIDA BED SYSTEM AREA: 212,831 SQ. FT.

NORTH
250' 0' 250'

STORM WATER TRIBUTARY AREA MAP

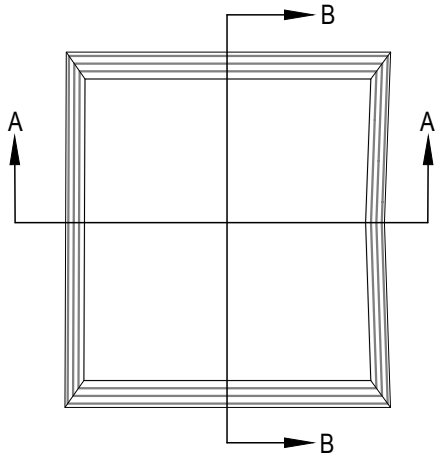
SOZINHO DAIRY #5
KINGS COUNTY, CA

JOB NO. 240504
ATTACHMENT B
10/7/2024
SCALE: SEE SHEET

324 S. Santa Fe, Ste. A
Visalia, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS

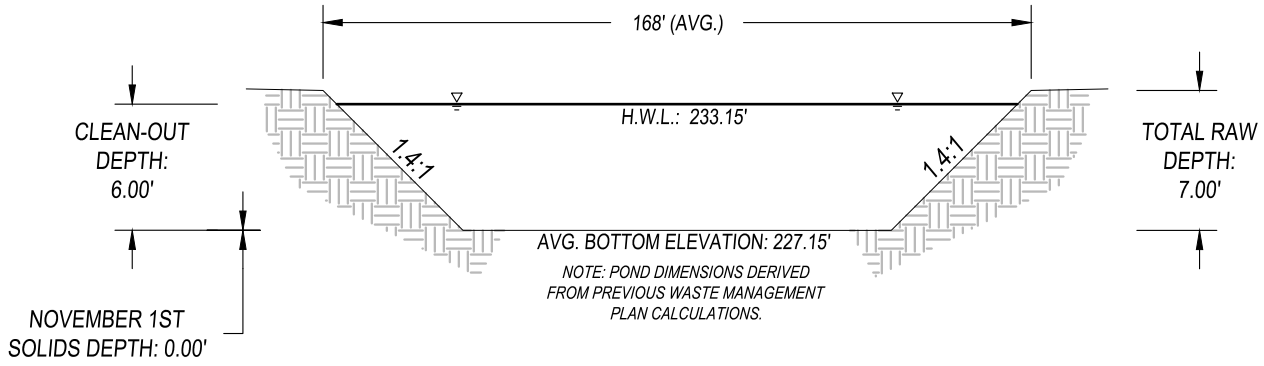
WASTEWATER RETENTION POND 2A - EVAPORATION POND

TOTAL VOLUME: 1,328,761 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 210,123 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 41,936 GALLONS
TOTAL RETENTION VOLUME: 1,076,702 GALLONS

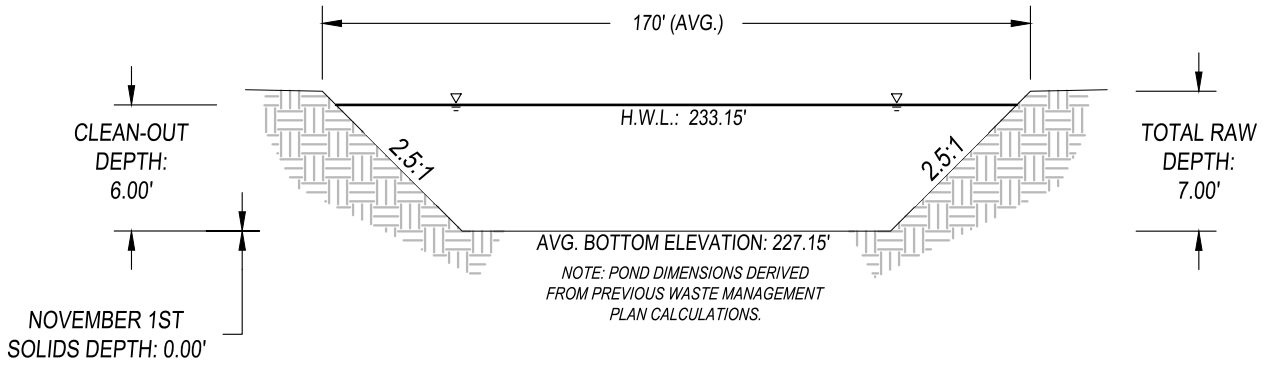


NORTH

PLAN VIEW — *NTS*



SECTION A-A — *NTS*



SECTION B-B — *NTS*

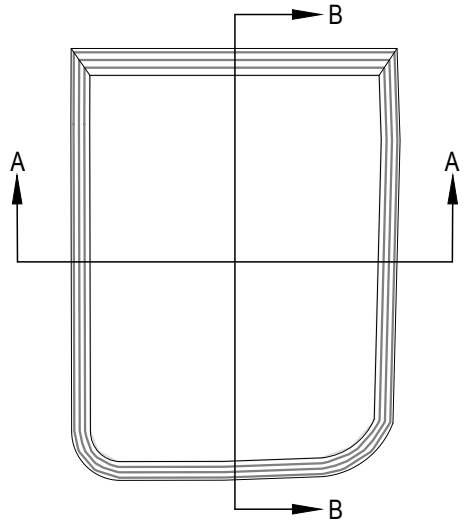
4CREEKS
324 S. Santa Fe St., Ste. A
Visalia, CA 93292
(559) 802-3052
www.4-creeks.com

WASTEWATER RETENTION POND 2A DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO. 240504
ATTACHMENT C-2A
10/7/2024
NTS

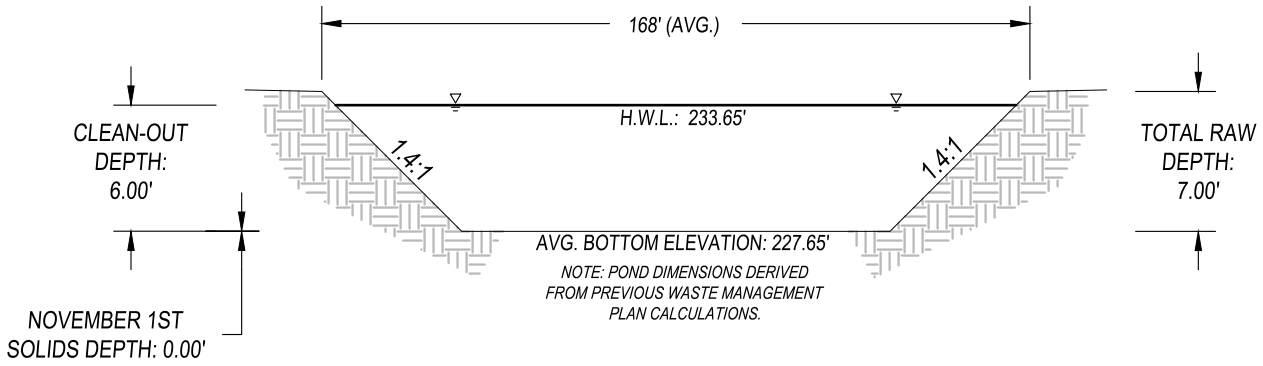
WASTEWATER RETENTION POND 2B - EVAPORATION POND

TOTAL VOLUME: 1,742,958 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 272,436 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 55,845 GALLONS
TOTAL RETENTION VOLUME: 1,414,677 GALLONS

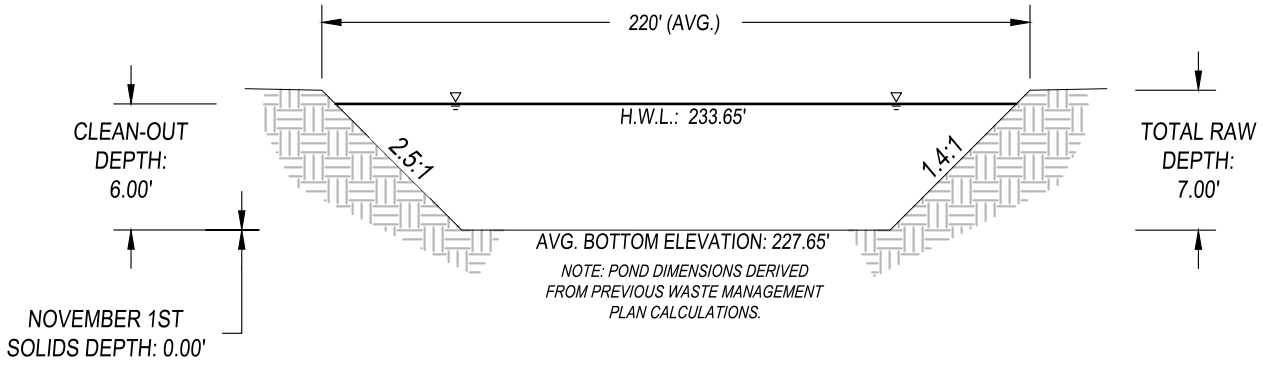


NORTH

PLAN VIEW *NTS*



SECTION A-A *NTS*



SECTION B-B *NTS*

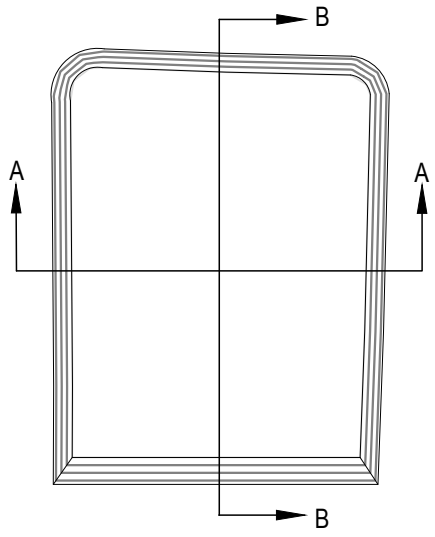
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Visalia, CA 93292
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WASTEWATER RETENTION POND 2B DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO. 240504
ATTACHMENT C-2B
10/7/2024
NTS

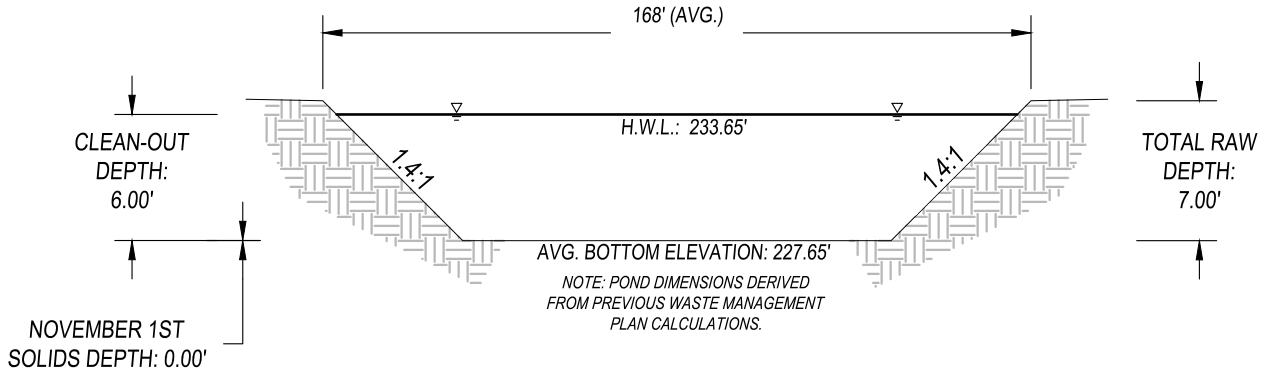
WASTEWATER RETENTION POND 2C - EVAPORATION POND

TOTAL VOLUME: 1,742,958 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 272,436 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 55,845 GALLONS
TOTAL RETENTION VOLUME: 1,414,677 GALLONS

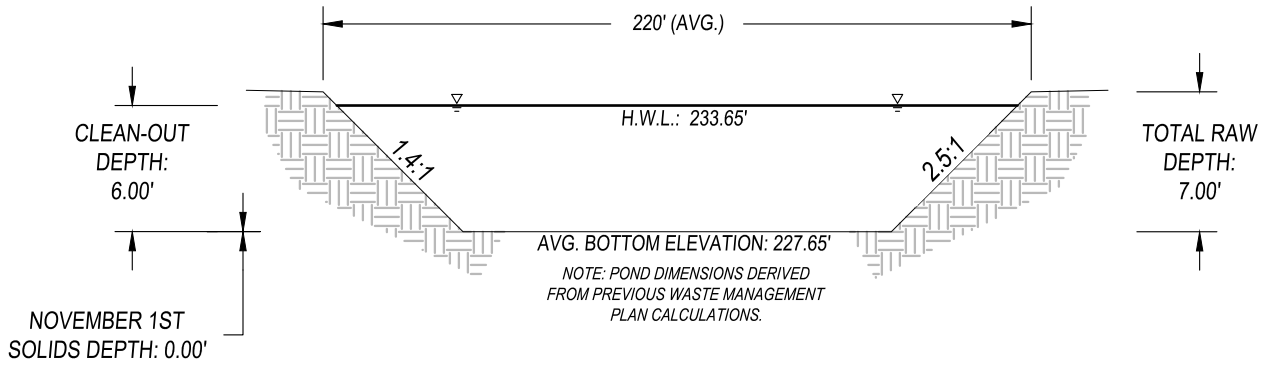


NORTH

PLAN VIEW — NTS



SECTION A-A — NTS



SECTION B-B — NTS

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Visalia, CA 93292
(559) 802-3052
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WASTEWATER RETENTION POND 2C DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO.	240504
ATTACHMENT	C-2C
	10/7/2024
	NTS

APPENDIX A

WASTEWATER RETENTION POND VOLUME ANALYSIS SUMMARY

Calculations Completed By:	AF
Calculations Checked By:	MR
Date:	2/7/2025

Wastewater Retention Pond Volume Analysis

SOZINHO DAIRY #5

A. POND STORAGE VOLUME

SUMMARY *(See Appendix B for Calculations)*

Pond	Pond Type	Depth of Pond November 1st (ft)	Storage Period Pond Volume Reduction (ft^3)
Pond 1:	Irrigation	0.00	0
Pond 2A:	Evaporation	0.25	5,606
Pond 2B:	Evaporation	0.25	7,465
Pond 2C:	Evaporation	0.25	7,465

Pond	Total Raw Volume (gal)	1 Foot Freeboard Reduction (gal)	Storage Period Pond Reduction (gal)	Total Retention Volume (gal)
Pond 1:	18,844,753	1,160,987	0	17,683,766
Pond 2A:	1,328,761	210,123	41,936	1,076,702
Pond 2B:	1,742,958	272,436	55,845	1,414,677
Pond 2C:	1,742,958	272,436	55,845	1,414,677
			TOTAL:	**21,589,821**

B. PROCESS WASTEWATER VOLUME ANALYSIS

Age of Animal & Housing Type	*# of Animals*	*Waste Produced - Urine & Manure (ft^3/day) (ASABE 384.2)*	*Hours/Day on Flush Surface*	*Single Stage Mechanical Separator, BIDA Beds, and Separation Ponds Reduction Factor*	*Total (gal/day)*
Milking Cows (Freestall)	1,250	2.4	18	75%	4,208
Dry Cows (Open Lot)	195	1.3	4	75%	79
Heifers: 15-24 mo. (Open Lot)	316	0.78	3	75%	58
Heifers: 7-14 mo. (Open Lot)	477	0.78	3	75%	87
Heifers: 4-6 mo. (Open Lot)	207	0.3	3	75%	15
Calves: up to 3 mo. (Not Flushed)	0	0.3	3	75%	0
				Total :	**4,446**

Milk Barn Wastewater Output (Obtained from 2010 WMP)

Sprinkler Pen/Barn Flush Combo:	43,100	gallons/day*
TOTAL:	**43,100**	**gallons/day**

Summary:

Wastewater Source	*Volume (gal./day)*	*Total Volume Accumulated in 120 day period (gal.)*
Milk Barn Wastewater Output:	43,100	5,172,000
Animal Output (Urine & Manure):	4,446	533,473
Total Process Wastewater Volume From Operations:	**47,546**	**5,705,473**

C. PRECIPITATION RUN-OFF VOLUME ANALYSIS

Rainfall Run-off from Production Area

Total Additional Production Tributary Area	3,280,356	ft^2
	75.31	***acres***

Run-off Coefficients

Runoff Coefficient for Impervious:	0.50
Runoff Coefficient for Pervious:	0.20
25 Yr. 24 Hr. Storm Runoff Coefficient for Impervious:	0.97
25 Yr. 24 Hr. Storm Runoff Coefficient for Pervious:	0.35

Conversion Factor: **0.623377**

(7.48051941 gal/ft^3 x 1 ft/12 in)

Production Area Subdivision Summary

Area Description	Run-off Area (ft^2)	Run-off Coefficient	Weighted Run-off Area (ft^2)
Wastewater Retention Pond Area	267,293	1.00	267,293
BioFiltro Vermifiltration System	212,831	1.00	212,831
Total Impervious Area	687,974	0.50	343,987
Total Pervious Area	2,325,089	0.20	465,018
Total Production Area	**3,493,187**		**1,289,129**

25 year 24 hour Rainfall Event

Source: NOAA Online Weather Data: NOAA Atlas 2, 1973 for 25 yr / 24 hr

Area Description	Rainfall (in.)*	Weighted Run-off Area	Total Volume Accumulated (gal)
Wastewater Retention Pond Area	2.10	267,293	**349,911**
Total BioFiltro System of Tributary Area	2.10	212,831	**278,615**
Total Impervious Part of Tributary Area	2.10	343,987.00	**450,310**
Total Pervious Part of Tributary Area	2.10	465,018	**608,751**
Total Production Area		**1,289,129**	**1,687,587**

*Per 2010 WMP

Run-Off to Wastewater Retention Basin

Source: California Department of Water Resources (DWR) & California Irrigation Management Information Systems (CIMIS) Online Data from Sampling Stations, Appendix B

Rational Method - Equation:

Average Rainfall (in)/12 X (Total Production Area (ft^2)- Wastewater Pond Area(ft^2)) X (Weighted Run-off Coefficient) X 7.48051941 (ft^3 to gallons) = Normal Rainfall Run-off Volume to Pond (gallons)

Normal Precipitation & Run-off

Month	Ave. Rainfall (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	0.91	30	731,288
December	1.57	31	1,261,672
January	1.90	31	1,526,864
February	1.76	28	1,414,358
Total:	**6.14**	**120**	**4,934,182**

Normal Precipitation & Run-off times a factor of 1.5

Month	Ave. Rainfall X 1.5 (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	1.37	30	1,096,931
December	2.36	31	1,892,508
January	2.85	31	2,290,296
February	2.64	28	2,121,538
Total:	**9.21**	**120**	**7,401,273**

Evaporation from Wastewater Basin

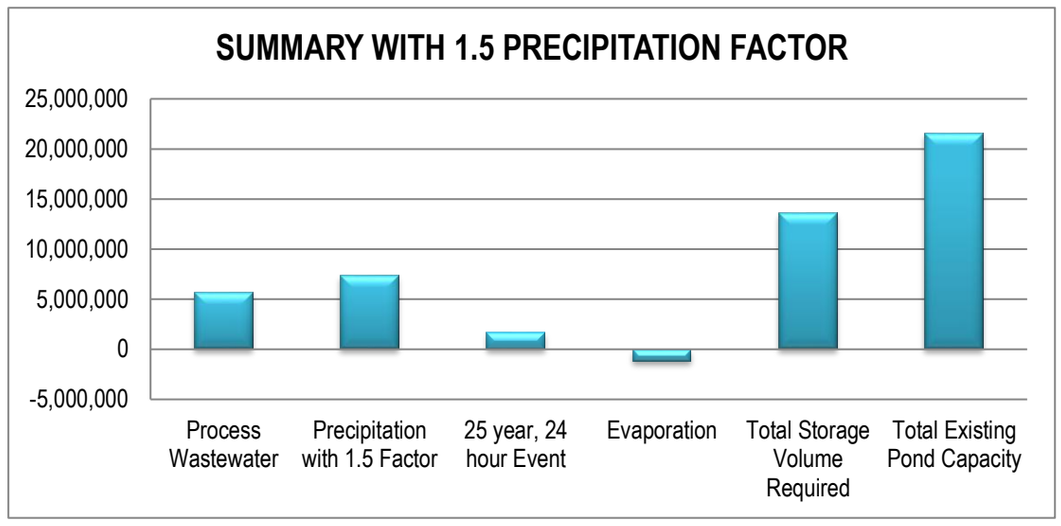
Source DWR-San Joaquin District Plan Evaporation Monthly Averages for Fresno and Bakersfield from 1958-2010

Month	*Bakersfield Evaporation Rate (in.)*	*Fresno Evaporation Rate (in.)*	*Average Evaporation Rate (in.)*	*Total Volume Evaporated (gal.)*
November	2.24	2.25	2.25	374,071
December	1.35	1.21	1.28	213,279
January	1.44	1.26	1.35	224,943
February	2.25	2.08	2.17	360,741
Total:	**7.28**	**6.80**	**7.04**	**1,173,034**

D. SUMMARY OF REQUIRED WASTEWATER RETENTION POND STORAGE VOLUME:

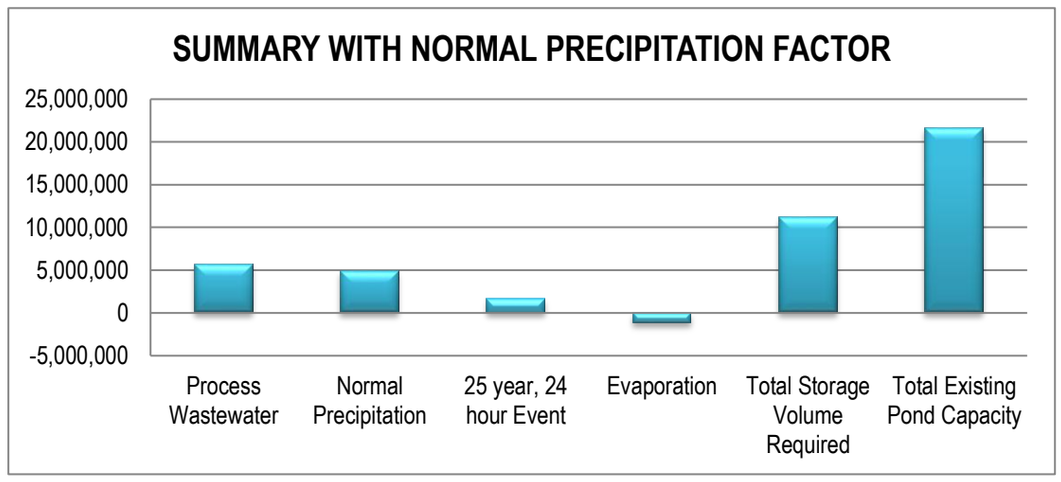
1.5 PRECIPITATION FACTOR

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	5,705,473
Wastewater Accumulated From Normal Precipitation w/ 1.5 Factor	7,401,273
Wastewater Accumulated From 25 Year, 24 Hour Event	1,687,587
Less: Evaporation from Wastewater Retention Ponds	(1,173,034)
Net Required Wastewater Retention Pond Storage Volume	**13,621,299**
Less: Net Existing Wastewater Retention Ponds Storage Volume	21,589,821
Excess Wastewater Retention Pond Capacity	**7,968,523**



1.5 PRECIPITATION FACTOR NOT INCLUDED

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	5,705,473
Wastewater Accumulated From Normal Precipitation w/o 1.5 Factor	4,934,182
Wastewater Accumulated From 25 Year, 24 Hour Event	1,687,587
Less: Evaporation from Wastewater Retention Ponds	(1,173,034)
Net Required Wastewater Retention Pond Storage Volume	**11,154,208**
Less: Net Existing Wastewater Retention Ponds Storage Volume	21,589,821
Excess Wastewater Retention Pond Capacity	**10,435,614**



Total Available Retention Days of Storage (1.5 factor): 190.2

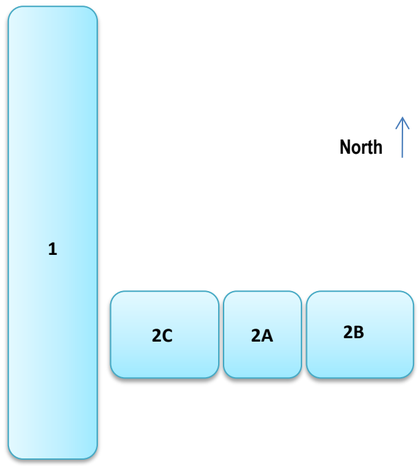
Total Available Retention Days of Storage (Normal): 232.3

Calculations Completed By: AF
Calculations Checked By: MR
Date: 2/7/2025

Wastewater Retention Pond Field Capacity Analysis

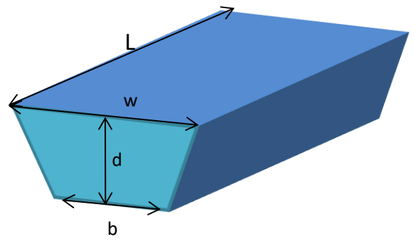
SOZINHO DAIRY #5

KEY MAP



Volume Formula

B_1= (L)(W)
M= [L-(Sd)][W-(Sd)]
Volume= 1/6d(B_1+4M+B_2)



SUMMARY

Pond	Total Raw Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Volume Reduction (ft^3)	Total Retention Volume (ft^3)
Pond 1:	2,519,177	155,201	0	**2,363,976**
Pond 2A:	177,630	28,089	5,606	**143,934**
Pond 2B:	233,000	36,419	7,465	**189,115**
Pond 2C:	233,000	36,419	7,465	**189,115**
			TOTAL:	**2,886,139**

Pond	Total Volume (gal)	1 Foot Freeboard Reduction (gal)	Storage Period Pond Reduction (gal)	Total Retention Volume (gal)
Pond 1:	18,844,753	1,160,987	0	**17,683,766**
Pond 2A:	1,328,761	210,123	41,936	**1,076,702**
Pond 2B:	1,742,958	272,436	55,845	**1,414,677**
Pond 2C:	1,742,958	272,436	55,845	**1,414,677**
			TOTAL:	**21,589,821**

Definitions:

Overflow Pond: Capacity is that volume above the overflow pipe, less the freeboard
Irrigation Pond: Capacity is that volume above the residual solids*, less the freeboard
Evaporation Pond: Capacity is the entire "raw capacity", less the freeboard

** Residual Solids are assumed to be 2 feet deep if the wastewater did not pass through a solids separation system before entering the pond. If there is solids separation before entering the pond, the assumed level of residual solids is reduced by half. If there is secondary separation after the primary separation, the residual solids are reduced again by half.*

Pond #1 - Evaporation Pond



Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	1165.00	1165.00	1139.80
Pond Top Width	134.00	134.00	108.80
Average Depth (d)	18.00	1.00	0.00
Side Slope H:V (S)	0.70	0.70	0.70
Wastewater Pond Surface Area	156,110	156,110	124,010
Calculations:			
B_1=	156,110	156,110	124,010
B_2=	124,010	154,293	124,010
M=	139,901	155,201	124,010
Calculated Volume (ft^3):	**2,519,177**	**155,201**	**0**

Pond #2A - Irrigation Pond

North

2A

Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	170.00	170.00	151.10
Pond Top Width	168.00	168.00	149.10
Average Depth (d)	7.00	1.00	0.25
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	28,560	28,560	22,529
Calculations:			
B_1=	28,560	28,560	22,529
B_2=	22,319	27,621	22,319
M=	25,344	28,089	22,424
Calculated Volume (ft^3):	**177,630**	**28,089**	**5,606**

Pond #2B - Irrigation Pond

North

2B

Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	220.00	220.00	201.10
Pond Top Width	168.00	168.00	149.10
Average Depth (d)	7.00	1.00	0.25
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	36,960	36,960	29,984
Calculations:			
B_1=	36,960	36,960	29,984
B_2=	29,739	35,881	29,739
M=	33,254	36,419	29,862
Calculated Volume (ft^3):	**233,000**	**36,419**	**7,465**

Pond #2C - Irrigation Pond

North

2C

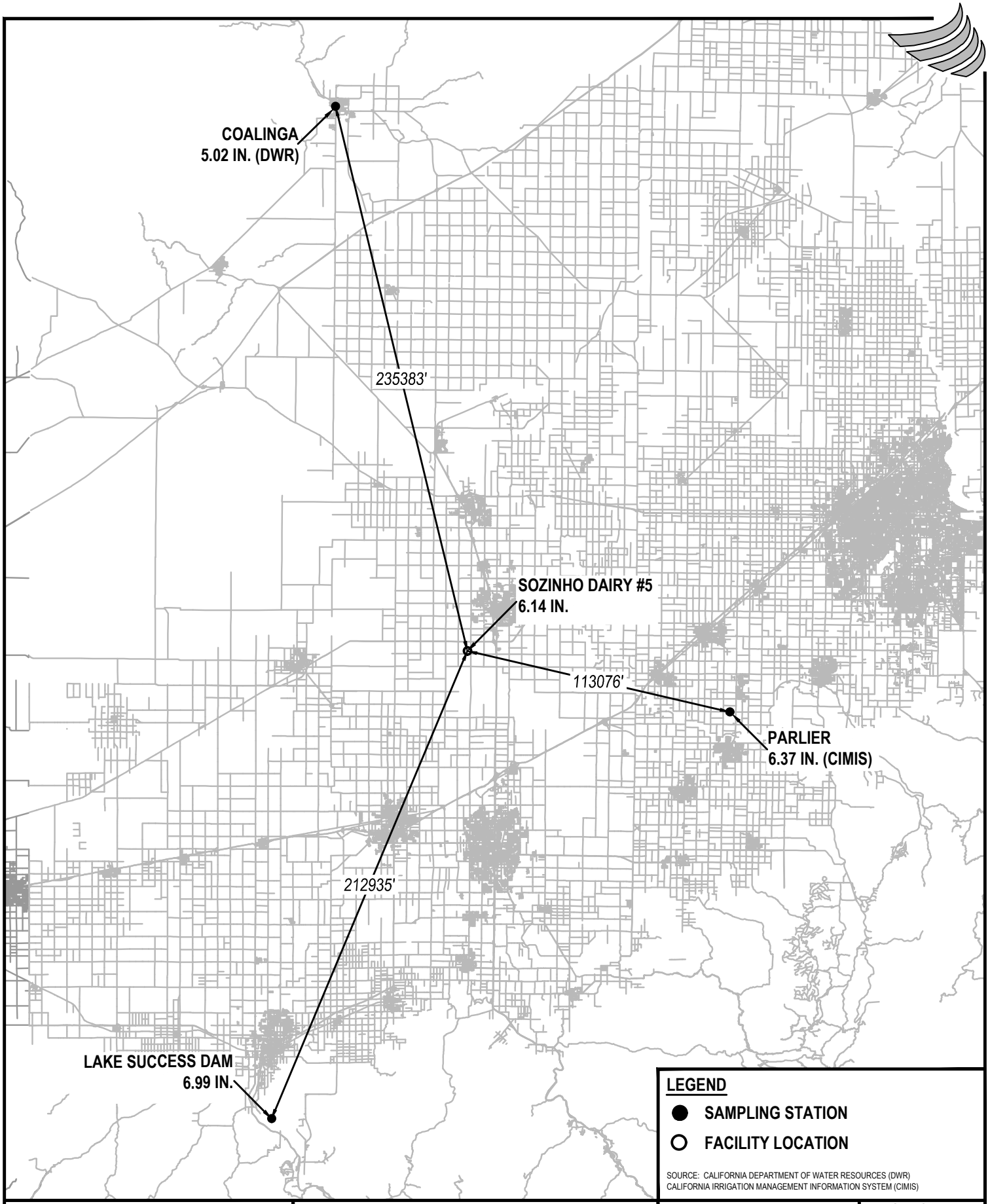
Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	220.00	220.00	201.10
Pond Top Width	168.00	168.00	149.10
Average Depth (d)	7.00	1.00	0.25
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	36,960	36,960	29,984
Calculations:			
B_1=	36,960	36,960	29,984
B_2=	29,739	35,881	29,739
M=	33,254	36,419	29,862
Calculated Volume (ft^3):	**233,000**	**36,419**	**7,465**

APPENDIX B

NORMAL PRECIPITATION DATA



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324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

DWR COLLECTION LOCATIONS

SOZINHO DAIRY #5
KINGS COUNTY, CA

NORTH

JOB NO. 240504
APPENDIX B
10/1/2024
1"= 10 MILES

Calculations Completed By:	TE
Calculations Checked By:	MC
Date:	10/1/2024

SOZINHO DAIRY #5

Appendix B - Normal Precipitation Analysis Summary

Source: Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: CIMIS
http://wwwcimis.water.ca.gov/cimis/frontMonthlyReport.do

Average Precipitation at 3 Nearest Precipitation Recording Station *(Inches)*

	Parlier	*Success Dam*	*Coalinga*
November	0.92	1.16	0.66
December	1.71	1.75	1.21
January	1.92	2.12	1.67
February	1.81	1.96	1.48
March	1.95	2.02	1.15

Average Rainfall

Enter Latitude & Longitude:

Latitude: 36°17'39.95"N Longitude: 119°35'7.97"W

Enter State Plane Coordinates:

x:	1,947,404	meters
	6,389,122	ft
y:	606,805	meters
	1,990,830	ft

(State Plane Coordinates and Station proximity detailed in CAD Exhibit, See Attachment)

Normal Precipitation Summary

(Average based on proximity to DWR collection station)

120 Day Precipitation (November - February)

November:	0.91	inches
December:	1.57	inches
January:	1.90	inches
February:	1.76	inches

Retention Period Total Precipitation

November - February: 6.14 in.

Normal Precipitation Averages

Source:Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: NOAA Geodetic to SPC
http://www.ngs.noaa.gov/cgi-bin/spc_getpc.prl

4CREEKS

CIMIS-Parlier (#039)
1983 - 2024

Latitude: 36.597444°N 36-35'-51.0"
Longitude: 119.504040°W 119-30'-15.0"
Zone: 4

State Plane Coordinates:
x: 1,954,890.723 meters
6,413,683.474 ft
y: 640,392.032 meters
2,101,023.727 ft

Date / Time	RAIN INCHES
Sep-83	1.73
Oct-83	0.16
Nov-83	3.23
Dec-83	2.05
Jan-84	0.16
Feb-84	1.5
Mar-84	0.79
Apr-84	0.2
May-84	0
Jun-84	0.08
Jul-84	0.08
Aug-84	0.55
Sep-84	0
Oct-84	0.71
Nov-84	3.31
Dec-84	2.01
Jan-85	0.12
Feb-85	1.14
Mar-85	3.19
Apr-85	0.2
May-85	0
Jun-85	0.31
Jul-85	0.08
Aug-85	0.08
Sep-85	0.2
Oct-85	0.94
Nov-85	3.43
Dec-85	0.98
Jan-86	1.73
Feb-86	4.57
Mar-86	4.45
Apr-86	0.83
May-86	0.16
Jun-86	0.08
Jul-86	0.16
Aug-86	0.08
Sep-86	0.35
Oct-86	0.08
Nov-86	0.16
Dec-86	1.54
Jan-87	2.44
Feb-87	2.76
Mar-87	2.6
Apr-87	0.67
May-87	0.87
Jun-87	0.12
Jul-87	0.31
Aug-87	0.08
Sep-87	0.08
Oct-87	2.48
Nov-87	1.73
Dec-87	1.69
Jan-88	2.36
Feb-88	0.83
Mar-88	0.35
Apr-88	2.64
May-88	0.59
Jun-88	0.47
Jul-88	0.16
Aug-88	0.12
Sep-88	0.28
Oct-88	0.08
Nov-88	1.85
Dec-88	2.87
Jan-89	0.59
Feb-89	1.34
Mar-89	2.13
Apr-89	0.16
May-89	0.67
Jun-89	0.16
Jul-89	0.12
Aug-89	0.12
Sep-89	0.87
Oct-89	0.08
Nov-89	0.31
Dec-89	0.04
Jan-90	3.19
Feb-90	1.69
Mar-90	0.75

Parlier (#039)

November:	0.9219	in.
December:	1.7124	in.
January:	1.9214	in.
February:	1.8145	in.
March:	1.9517	in.
April:	0.8280	in.

November - February Total
6.3702 in.

DWR-Success Dam (SCC)
1959 - 2024

Latitude: 36.061000°N 36-03'-39.6"
Longitude: 118.922000°W 118-55'-19.2"
Zone: 4

State Plane Coordinates:
x: 2,007,027.270 meters
6,584,735.138 ft
y: 580,746.215 meters
1,905,335.351 ft

Date / Time	RAIN INCHES
Sep-59	0
Oct-59	0
Nov-59	0
Dec-59	0
Jan-60	0
Feb-60	0
Mar-60	0
Apr-60	0
May-60	0
Jun-60	0
Jul-60	0
Aug-60	0
Sep-60	0
Oct-60	0.44
Nov-60	3.3
Dec-60	0.55
Jan-61	1.02
Feb-61	0.19
Mar-61	1.12
Apr-61	0.33
May-61	0.41
Jun-61	0
Jul-61	0
Aug-61	0
Sep-61	0
Oct-61	0
Nov-61	1.52
Dec-61	0.74
Jan-62	1.83
Feb-62	6.86
Mar-62	1.46
Apr-62	0.01
May-62	0.31
Jun-62	0
Jul-62	0.11
Aug-62	0
Sep-62	0.07
Oct-62	0.29
Nov-62	0
Dec-62	0
Jan-63	0.81
Feb-63	2.83
Mar-63	2.33
Apr-63	2.92
May-63	0.23
Jun-63	0.39
Jul-63	0
Aug-63	0.21
Sep-63	0.45
Oct-63	1.89
Nov-63	2.28
Dec-63	0.3
Jan-64	0.89
Feb-64	0.34
Mar-64	1.97
Apr-64	1.1
May-64	0.86
Jun-64	0.12
Jul-64	0
Aug-64	0
Sep-64	0.33
Oct-64	1.28
Nov-64	2.57
Dec-64	2.03
Jan-65	1.81
Feb-65	0.17
Mar-65	1.15
Apr-65	3.56
May-65	0
Jun-65	0
Jul-65	0.03
Aug-65	0.23
Sep-65	0.13
Oct-65	0
Nov-65	1.89
Dec-65	2.51
Jan-66	0.94
Feb-66	0.97
Mar-66	0.16

Success Dam (SCC)

November:	1.1566	in.
December:	1.7525	in.
January:	2.1163	in.
February:	1.9643	in.
March:	2.0197	in.
April:	1.1045	in.

November - February Total
6.9896 in.

DWR-Coalinga (CLN)
1940 - 2024

Latitude: 36.1360°N 36-8'-9.6"
Longitude: 120.3610°W 120-21'-39.6"
Zone: 4

State Plane Coordinates:
x: 1,877,505.172 meters
6,159,793.871 ft
y: 589,933.250 meters
1,935,476.542 ft

Date / Time	RAIN INCHES
Oct-40	0
Nov-40	0
Dec-40	3.89
Jan-41	1.79
Feb-41	4.96
Mar-41	2.83
Apr-41	1.06
May-41	0
Jun-41	0
Jul-41	0
Aug-41	0
Sep-41	0
Oct-41	0.56
Nov-41	0.5
Dec-41	2.51
Jan-42	1.39
Feb-42	0.41
Mar-42	0.85
Apr-42	1.28
May-42	0.13
Jun-42	0
Jul-42	0
Aug-42	0
Sep-42	0
Oct-42	0.31
Nov-42	0.2
Dec-42	0.53
Jan-43	2.63
Feb-43	0.72
Mar-43	2.14
Apr-43	0.45
May-43	0
Jun-43	0
Jul-43	0
Aug-43	0
Sep-43	0
Oct-43	0.31
Nov-43	0.15
Dec-43	1.68
Jan-44	0.39
Feb-44	3.13
Mar-44	0.15
Apr-44	0.25
May-44	0.36
Jun-44	0.43
Jul-44	0
Aug-44	0
Sep-44	0
Oct-44	0.18
Nov-44	0.29
Dec-44	0.31
Jan-45	0.48
Feb-45	1.7
Mar-45	1.16
Apr-45	0.09
May-45	0.85
Jun-45	0.01
Jul-45	0
Aug-45	0.07
Sep-45	0
Oct-45	0.72
Nov-45	0.4
Dec-45	1.42
Jan-46	0.27
Feb-46	0.96
Mar-46	1.39
Apr-46	0.01
May-46	0.17
Jun-46	0
Jul-46	0.03
Aug-46	0
Sep-46	0
Oct-46	0.27
Nov-46	1.33
Dec-46	1.3
Jan-47	0.24
Feb-47	0.41
Mar-47	0.52

Coalinga (CLN)

November:	0.6613	in.
December:	1.2112	in.
January:	1.6671	in.
February:	1.4762	in.
March:	1.1518	in.
April:	0.5254	in.

November - February Total
5.0159 in.

NOVEMBER

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413683.474
y1	2101023.727
z1(Rain)	0.921904762

Point 2	Success(Sta.)
x2	6584735.138
y2	1905335.351
z2(Rain)	1.1565625

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	0.661341463

		1	2101023.727	0.921904762	
A=		1	1905335.351	1.1565625	A= 89836.13671
		1	1935476.542	0.661341463	

	6413683.474		1	0.921904762	
B=	6584735.138		1	1.1565625	B= -15007.37435
	6159793.871		1	0.661341463	

	6413683.474	2101023.727		1	
C=	6584735.138	1905335.351		1	C= -78000365464
	6159793.871	1935476.542		1	

	6413683.474	2101023.727	0.921904762		
-D=	6584735.138	1905335.351	1.1565625		D= -4.72741E+11
	6159793.871	1935476.542	0.661341463		

X=	6389122.096	
Y=	1990829.921	
Z=	0.91	Value of rainfall data on site

DECEMBER

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413683.474
y1	2101023.727
z1(Rain)	1.712380952

Point 2	Success(Sta.)
x2	6584735.138
y2	1905335.351
z2(Rain)	1.752461538

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.211234568

		1	2101023.727	1.712380952	
A=		1	1905335.351	1.752461538	A= 104703.7503
		1	1935476.542	1.211234568	
	6413683.474		1	1.712380952	
B=	6584735.138		1	1.752461538	B= 75545.87858
	6159793.871		1	1.211234568	
	6413683.474	2101023.727		1	
C=	6584735.138	1905335.351		1	C= -78000365464
	6159793.871	1935476.542		1	
	6413683.474	2101023.727	1.712380952		
-D=	6584735.138	1905335.351	1.752461538		D= -6.96694E+11
	6159793.871	1935476.542	1.211234568		

X=	6389122.096	
Y=	1990829.921	
Z=	1.57	Value of rainfall data on site

JANUARY

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413683.474
y1	2101023.727
z1(Rain)	1.921428571

Point 2	Success(Sta.)
x2	6584735.138
y2	1905335.351
z2(Rain)	2.11625

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.667125

		1	2101023.727	1.921428571	
A=		1	1905335.351	2.11625	A= 82016.39199
		1	1935476.542	1.667125	
	6413683.474		1	1.921428571	
B=	6584735.138		1	2.11625	B= -5964.086262
	6159793.871		1	1.667125	
	6413683.474	2101023.727		1	
C=	6584735.138	1905335.351		1	C= -78000365464
	6159793.871	1935476.542		1	
	6413683.474	2101023.727		1.921428571	
-D=	6584735.138	1905335.351		2.11625	D= -3.63624E+11
	6159793.871	1935476.542		1.667125	

X= 6389122.096

Y= 1990829.921

Z= 1.90 Value of rainfall data on site

FEBRUARY

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413683.474
y1	2101023.727
z1(Rain)	1.81452381

Point 2	Success(Sta.)
x2	6584735.138
y2	1905335.351
z2(Rain)	1.964307692

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.476219512

		1	2101023.727	1.81452381	
A=		1	1905335.351	1.964307692	A= 90998.51869
		1	1935476.542	1.476219512	
	6413683.474		1	1.81452381	
B=	6584735.138		1	1.964307692	B= 19838.94225
	6159793.871		1	1.476219512	
	6413683.474	2101023.727		1	
C=	6584735.138	1905335.351		1	C= -78000365464
	6159793.871	1935476.542		1	
	6413683.474	2101023.727		1.81452381	
-D=	6584735.138	1905335.351		1.964307692	D= -4.83784E+11
	6159793.871	1935476.542		1.476219512	

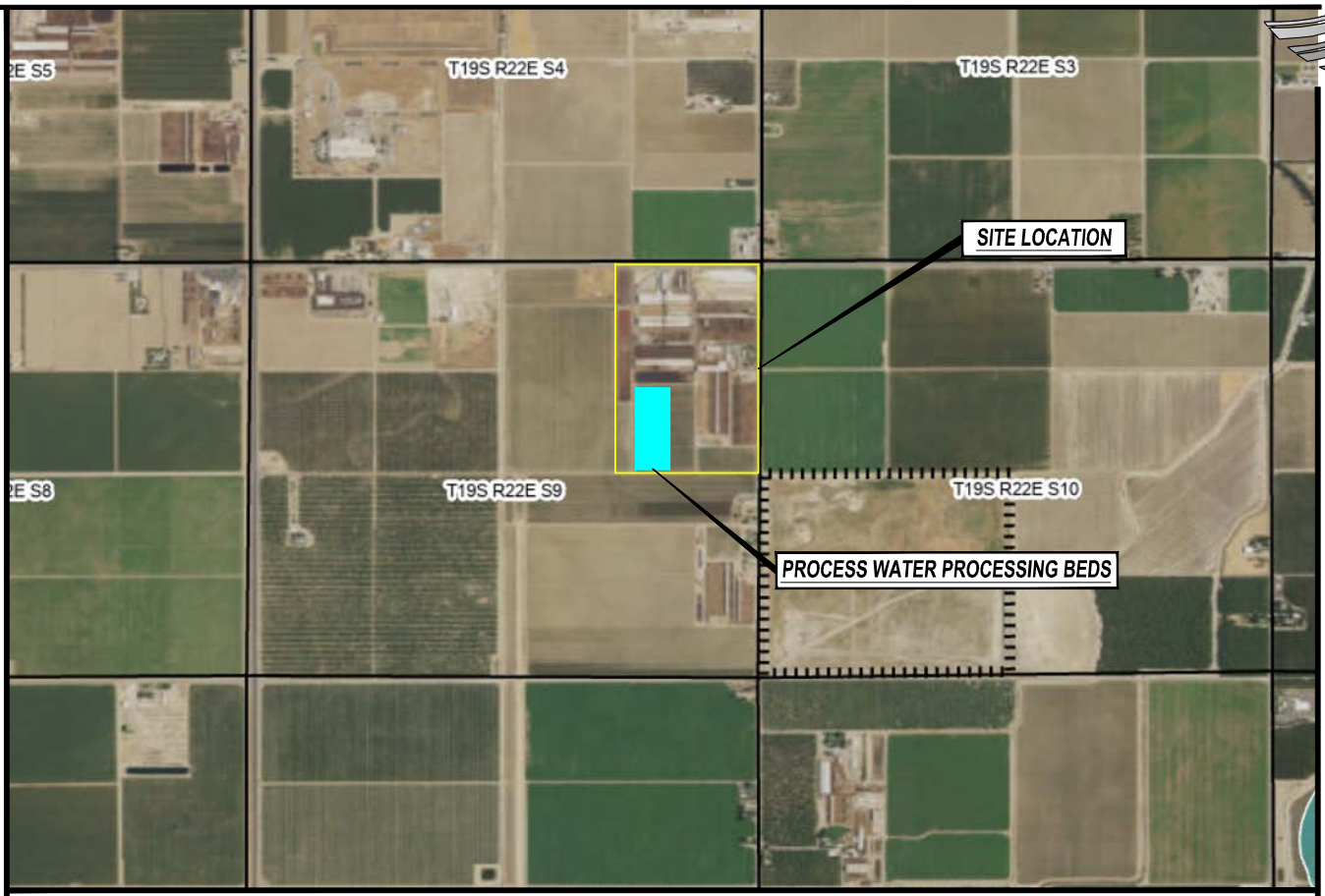
X= 6389122.096

Y= 1990829.921

Z= 1.76 Value of rainfall data on site

APPENDIX C

FEMA MAP





NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
PANEL 225 OF 875

Panel Contains:

COMMUNITY	NUMBER	PANEL
KINGS COUNTY	060086	0225
CITY OF HANFORD	060088	0225
TULARE COUNTY UNINCORPORATED AREAS	065066	0225

MAP NUMBER
06031C0225C
EFFECTIVE DATE
June 16, 2009

FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

THE PROJECT SITE IS LOCATED IN THE FLOOD INSURANCE RATE MAP 06031C0225C.

4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
(559) 802-3052

FEMA MAP
SOZINHO DAIRY #5
KINGS COUNTY, CA

JOB NO. 240504
APPENDIX C
10/1/2024
NO SCALE

APPENDIX D

EVAPORATION HISTORY 1958 – 2010

AVERAGE MONTHLY EVAPORATION FROM CLASS
'A' PAN IN IRRIGATED PASTURE ENVIRONMENTS NEAR
BAKERSFIELD, CALIFORNIA FROM 1958-2010 /1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAR - OCT TOTAL	JAN - DEC TOTAL
							****EVAPORATION IN INCHES****							
AVERAGE	1.44	2.25	4.13	5.95	8.35	9.58	9.94	8.85	6.62	4.47	2.24	1.35	57.89	65.17
STD DEV	0.34	0.45	0.71	0.86	0.82	0.79	0.82	0.71	0.64	0.43	0.36	0.36	0.72	0.61
STD ERROR	0.05	0.06	0.10	0.12	0.11	0.11	0.11	0.10	0.09	0.06	0.05	0.05	0.10	0.08

AVERAGE MONTHLY EVAPORATION FROM CLASS
'A' PAN IN IRRIGATED PASTURE ENVIRONMENTS AT
CALIFORNIA STATE UNIVERSTIY AT FRESNO
FROM 1968-2010 /1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAR - OCT TOTAL	JAN - DEC TOTAL
							****EVAPORATION IN INCHES****							
AVERAGE	1.26	2.08	3.94	6.03	8.75	10.43	11.02	9.67	6.99	4.42	2.25	1.21	61.26	68.07
STD DEV	0.28	0.41	0.77	0.86	1.03	0.92	0.73	0.68	0.57	0.49	0.40	0.30	0.76	0.62
STD ERROR	0.04	0.06	0.12	0.13	0.16	0.14	0.11	0.11	0.09	0.07	0.06	0.05	0.12	0.10

1/ Evaporation measurements are taken from evaporation pans located at standardized sites (irrigated pastures) with static water levels maintained in the pans by supply tanks. The sites are visited at least weekly to measure evaporation from a U.S. Weather Bureau Class 'A' Pan. Other agrometeorological equipment, (i.e.raingauge, anemometer, ambient air thermometers) is installed at onsite DWR agroclimatic stations, and this data is collected weekly along with pan evaporation. The evaporation may be adjusted during times of high wind or dry periods, which represent non-standard conditions.

APPENDIX E

WASTE MANAGEMENT PLAN 2010

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

JUL [illegible] 2010

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

19S	22E	9	Mt. Diablo	36° 17' 53.57" N	119° 35' 11.21" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1970

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:

0016-0020-0006-0000 0016-0020-0028-0000 0016-0020-0035-0000

B. OPERATOR NAME: Mendes, Joe Telephone no.: (559) 582-4906 (Landline) (Cellular)

3790 Lacey BLVD	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Martella, Robin Telephone no.: (559) 752-1019 (Landline) (Cellular)

12051 8th AVE	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sutton, Matt Telephone no.: (925) 944-2856 (Landline) (Cellular)

Title: Professional Engineer

3451-C Vincent RD	Pleasant Hill	CA	94523
Mailing Address Number and Street	City	State	Zip Code

CONTACT NAME: Cordeiro, Kristy Rocha Telephone no.: (209) 669-1800 (Landline) (209) 277-5596 (Cellular)

Title: Technical Service Provider

3213 Liberty Square PKWY	Turlock	CA	95382
Mailing Address Number and Street	City	State	Zip Code

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,300 milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)

1,495 milk and dry cows combined + 15% (pre-expansion limit)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	1,250	1,300	22	1,400
Dry Cows	195	195	0	1,450
Bred Heifers (15-24 mo.)	80	82	0	900
Heifers (7-14 mo.)	1,000	1,020	0	750
Calves (4-6 mo.)	200	205	0	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Holstein

Average milk production: 70 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 125 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 4.0 per day

Number of hours spent milking each day: 20.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 3.0 run cycles/wash

Bulk tank wash vat volume: 75 gallons/cycle

Bulk tank wash wastewater: 900.0 gallons/day

Pipeline wash and sanitizing: 3.0 run cycles/wash

Pipeline wash vat volume: 200 gallons/cycle

Pipeline wash wastewater: 1,200.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 7,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 25,000 gallons/day

Vacuum pumps / air compressors / chillers type: Well Water Cooled (Water Reused/Recycled)

Vacuum pumps / air compressors / chillers volume: 15,000 gallons/day

Milkbarn and equipment wastewater volume generated daily: 43,100 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0	0	0	0	0	0
	of 1,250	*of 195*	*of 80*	*of 1,000*	*of 200*	*of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 78 sprinklers

Duration of each sprinkler cycle: 2.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 4.0 gallons/minute

Total sprinkler pen wastewater volume: 12,980 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

Description	Source	Throughput (gallons per day)	Discharge Destination
Drop hoses and misc	Fresh Water	1,000	Sent to pond

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 40,000 gallons/day

Recycled water reused: 19,980 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 20,020 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 5,172,000 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	113	40.0	50%	2,813
			Total:	2,813

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 20 %

Description of all solids separation equipment used in flushed lane manure management systems:

Separator and processing pit

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	4,179.14	501,496	31,262.11	3,751,453
Manure generated by the herd sent to pond(s):	2,503.64	300,437	18,728.56	2,247,427
Manure generated by the herd sent to dry lot(s):	1,499.20	179,904	11,214.78	1,345,774
Manure solids (herd) removed by separation:	85.34	10,241	638.41	76,609
Liquid component in separated solids not send to pond(s):	90.95	10,914	680.35	81,642
Imported and facility generated bedding sent to pond(s):	23.44	2,813	175.32	21,039
Total manure and bedding sent to pond(s):	2,527.08	303,250	18,903.89	2,268,466
Residual manure solids and bedding sent to pond(s) w/factor:	182.40	21,888	1,364.48	163,737
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:		66,577		498,034

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Hanford

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.10 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 5.88 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
apron	920	4	0.97	0.50	Drains into pond(s).
apron	510	2	0.97	0.50	Drains into pond(s).
apron	350	1	0.97	0.50	Drains into pond(s).
cistern pad	384	1	0.97	0.50	yard
corral pad	5,180	1	0.97	0.50	Drains into pond(s).
drain	70	1	0.97	0.50	Drains into pond(s).
drain	20	1	0.97	0.50	Drains into pond(s).

drivelane	290	1	0.97	0.50	Drains into pond(s).
drivelane	520	1	0.97	0.50	Drains into pond(s).
exposed concrete	360	1	0.97	0.50	Drains into pond(s).
exposed concrete	1,300	1	0.97	0.50	Drains into pond(s).
exposed feedlane	416	1	0.97	0.50	Drains into pond(s).
extra lane	1,215	1	0.97	0.50	Drains into pond(s).
feed area	60,982	1	0.97	0.50	Drains into pond(s).
feedlane	6,960	1	0.97	0.50	Drains into pond(s).
feedlane	40,400	1	0.97	0.50	Drains into pond(s).
feedlane	4,290	1	0.97	0.50	Drains into pond(s).
feedlane	1,640	1	0.97	0.50	Drains into pond(s).
feedlane	17,986	1	0.97	0.50	Drains into pond(s).
feedlane	18,170	1	0.97	0.50	Drains into pond(s).
flush apron	144	1	0.97	0.50	Drains into pond(s).
lane	900	1	0.97	0.50	Drains into pond(s).
main transfer	8,040	1	0.97	0.50	Drains into pond(s).
milkbarn area	4,700	1	0.97	0.50	Drains into pond(s).
milkbarn pad	646	1	0.97	0.50	Drains into pond(s).
milktruck pad	1,260	1	0.97	0.50	Drains into pond(s).
old lane	1,425	1	0.97	0.50	Drains into pond(s).
pad	1,190	1	0.97	0.50	yard
parking	1,488	1	0.97	0.50	Drains into pond(s).
reminant concrete	2,678	1	0.97	0.50	Drains into pond(s).
road	396	1	0.97	0.50	Drains into pond(s).
separator area	30,210	1	0.99	0.99	Drains into pond(s).
separator pad	300	1	0.97	0.50	Drains into pond(s).
silage pad	14,500	1	0.97	0.50	Drains into pond(s).
transfer lane	2,920	1	0.97	0.50	Drains into pond(s).
transfer lane	3,168	1	0.97	0.50	Drains into pond(s).
transfer lane	4,800	1	0.97	0.50	Drains into pond(s).
transfer lane	1,300	1	0.97	0.50	Drains into pond(s).
transfer lane	3,900	1	0.97	0.50	Drains into pond(s).
transfer lane	624	1	0.97	0.50	Drains into pond(s).
transfer lane	2,448	1	0.97	0.50	Drains into pond(s).
transfer lane	360	1	0.97	0.50	Drains into pond(s).
transfer lane exposed	200	1	0.97	0.50	Drains into pond(s).

washpen	1,360	1	0.97	0.50	Drains into pond(s).

Surface area that does not run off into pond(s):	1,574	sq. ft.
Surface area that runs off into pond(s):	252,616	sq. ft.
Total surface area:	254,190	sq. ft.
Runoff from normal storage period rainfall:	517,236	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	775,853	gallons/storage period
25 year/24 hour storm event runoff:	321,567	gallons/storage period
Total surface area runoff:	838,803	gallons/storage period
Total surface area runoff with 1.5 factor:	1,097,421	gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	yard
commodity barn	1,170	1	yard
commodity barn	3,848	1	yard
fsb's	32,500	4	Wastewater pond
haybarn	7,950	1	yard
milkbarn	7,728	1	Wastewater pond
milkhouse	2,860	1	yard
old equipment shade	72	1	yard
old milkbarn	1,792	1	Wastewater pond
old shade	1,170	1	Wastewater pond
old shade	1,260	1	Wastewater pond
old shade	1,320	1	yard
old shade	2,640	1	yard
old shade	360	1	yard
old shade	3,120	1	yard
old shade	660	1	yard
old washpen	4,536	1	Wastewater pond
shade	1,280	1	Wastewater pond
shade	1,344	1	Wastewater pond
shade	2,310	1	yard
shade	2,499	1	yard
shade	2,560	1	yard

shade	3,276	1	yard
shade	2,400	1	corral
shade	52,976	1	Wastewater pond
shade	8,700	1	Wastewater pond
shade	12,800	1	Wastewater pond
shade	6,200	1	Wastewater pond
shade	4,840	1	yard
shop	630	1	Wastewater pond
shop	1,900	1	yard
shop attachment	216	1	yard

Surface area that does not run off into pond(s): 44,649 sq. ft.

Surface area that runs off into pond(s): 231,712 sq. ft.

Total surface area: 276,361 sq. ft.

Runoff from normal storage period rainfall: 849,330 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,273,995 gallons/storage period

25 year/24 hour storm event runoff: 303,332 gallons/storage period

Total surface area runoff: 1,152,662 gallons/storage period

Total surface area runoff with 1.5 factor: 1,577,327 gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
dairy facility	1,697,957	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 1,697,957 sq. ft.

Total surface area: 1,697,957 sq. ft.

Runoff from normal storage period rainfall: 1,244,757 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,867,135 gallons/storage period

25 year/24 hour storm event runoff: 777,973 gallons/storage period

Total surface area runoff: 2,022,730 gallons/storage period

Total surface area runoff with 1.5 factor: 2,645,108 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: SSB

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	630 ft.	Earthen Depth (ED):	7 ft.
Earthen Width (EW):	168 ft.	Side Slope (S):	1.4 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	0.0 ft.
Calculations			
Liquid Length (LL):	627 ft.	Storage Volume Adjusted for Dead Storage Loss:	582,308 cu. ft.
Liquid Width (LW):	165 ft.		
Pond Surface Area:	105,840 sq. ft.	Pond Marker Elevation:	5.1 ft.
Storage Volume:	582,308 cu. ft.	Evaporation Volume:	667,762 gals/period
		Adjusted Surface Area:	102,605 sq. ft.

POND OR BASIN DESCRIPTION: WWS

Pond is rectangular in shape: [X] Yes [ ] No

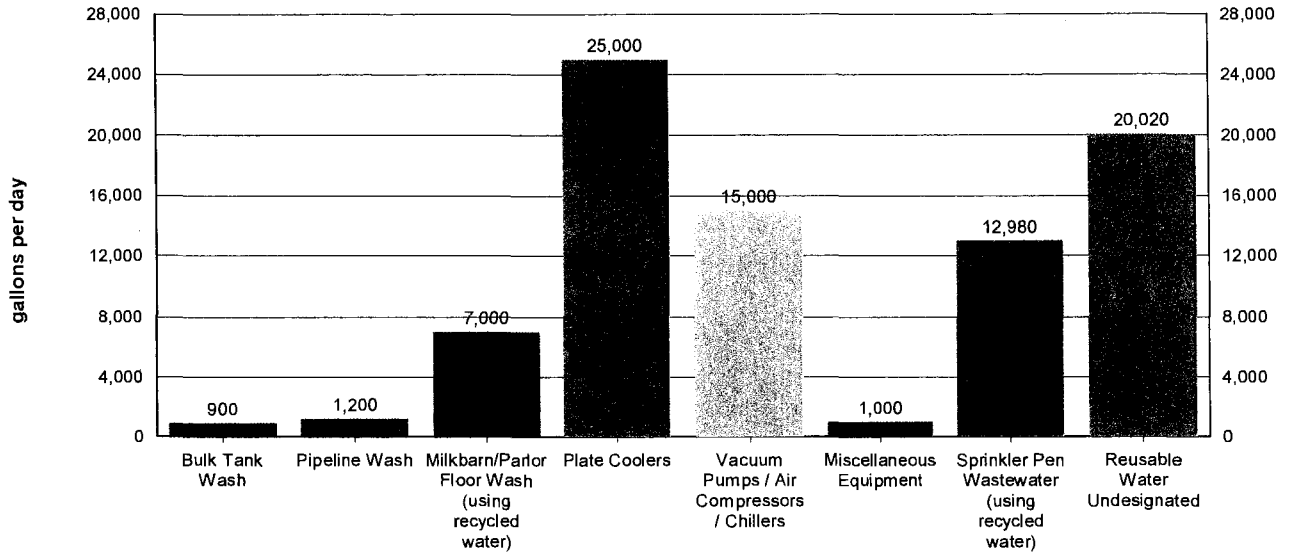
Dimensions			
Earthen Length (EL):	1,165 ft.	Earthen Depth (ED):	18 ft.
Earthen Width (EW):	134 ft.	Side Slope (S):	0.7 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	2.0 ft.
Calculations			
Liquid Length (LL):	1,164 ft.	Storage Volume Adjusted for Dead Storage Loss:	2,112,454 cu. ft.
Liquid Width (LW):	133 ft.		
Pond Surface Area:	156,110 sq. ft.	Pond Marker Elevation:	16.1 ft.
Storage Volume:	2,363,976 cu. ft.	Evaporation Volume:	998,829 gals/period
		Adjusted Surface Area:	153,476 sq. ft.

Potential storage losses (due to dead storage):	251,522.0 cubic feet - or - 1,881,515.2 gallons
Liquid storage surface area:	257,907 sq. ft.
Rainfall onto retention pond(s):	960,166 gallons/storage period
Rainfall runoff into retention pond(s):	2,611,322 gallons/storage period
Normal rainfall onto retention pond(s) with 1.5 factor:	1,440,249 gallons/storage period
Normal rainfall runoff into retention pond(s) with 1.5 factor:	3,916,983 gallons/storage period
Storage period evaporation (default):	13.92 inches/storage period
Storage period evaporation (user-override):	inches/storage period

Storage period evaporation volume:	1,666,591	gallons/storage period
Manure and bedding sent to pond(s):	2,268,466	gallons/storage period
Milkbarn water sent to pond(s):	5,172,000	gallons/storage period
Fresh flush water for storage period:	0	gallons/storage period

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

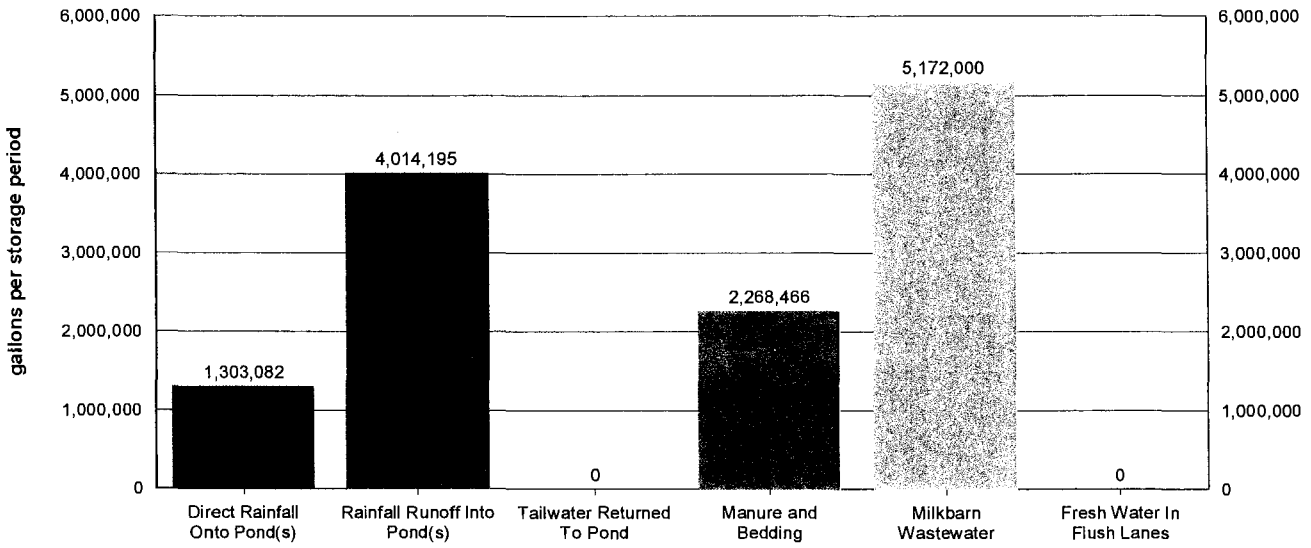


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 43,100 gallons/day

Total milkbarn wastewater generated per period: 5,172,000 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

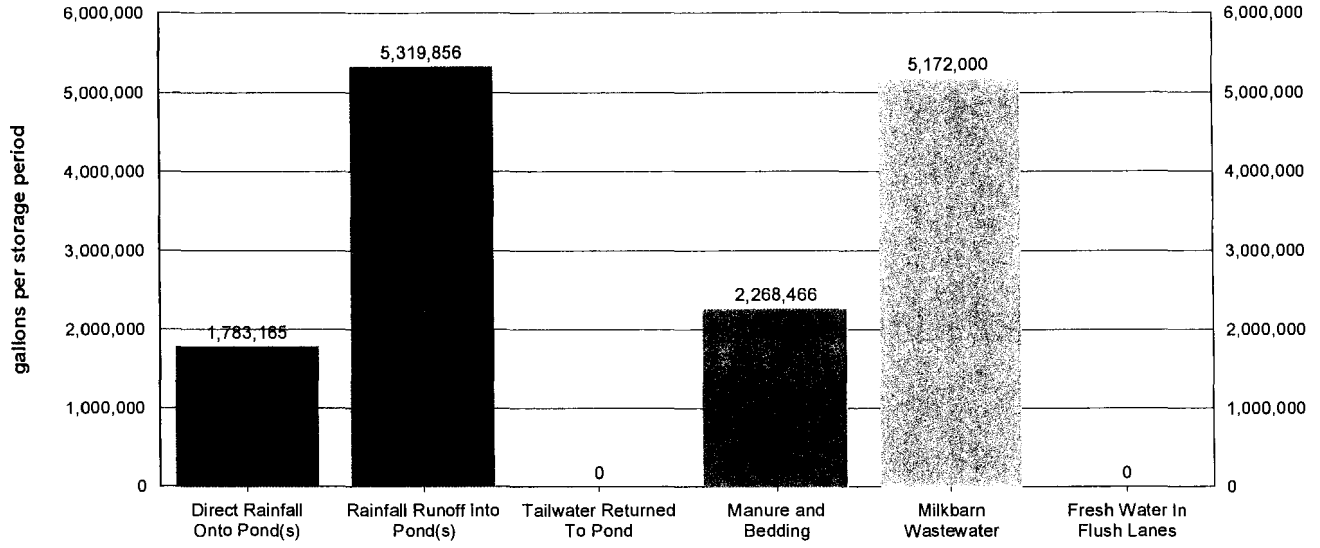


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	106,315	gallons/day
Total process wastewater generated per period:	12,757,743	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	11,091,152	gallons
	1,482,671	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	121,196	gallons/day
Total process wastewater generated per period:	14,543,487	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	12,876,896	gallons
	1,721,391	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy 's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: SSB

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 0 feet above the pond invert beginning in May of each year.

Sludge accumulation will be measured monthly.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are removed using a loader.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2 feet above the pond invert beginning in April of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 6.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are pumped out during irrigations.
Solids are pumped into slurry trucks.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
1/2 old milkhouse	1	648
commodity barn	1	3,848
fsb's	4	130,000
milkbarn	1	7,728
old milkbarn	1	1,792
old shade	1	1,170
old shade	1	1,260
old shade	1	360
old shade	1	3,120
old shade	1	660
old washpen	1	4,536
shade	1	1,280
shade	1	1,344

shade	1	2,310
shade	1	2,499
shade	1	2,560
shade	1	3,276
shade	1	2,400
shade	1	52,976
shade	1	8,700
shade	1	12,800
shade	1	6,200
shade	1	4,840
shop	1	630
Buildings without rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
commodity barn	1	1,170
haybarn	1	7,950
milkhouse	1	2,860
old equipment shade	1	72
old shade	1	1,320
old shade	1	2,640
shop	1	1,900
shop attachment	1	216

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 5th of October

Assessment for other rainfall collections systems will occur on or before: 5th of November

Description of how rainfall collection systems will be assessed:

Gutters and downspouts will be cleaned and repaired as needed.
Roofwater that comes in contact with manured areas will be collected and conveyed to the wastewater system.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 5th of October

Conditions requiring manure removal and/or regrading:

Solid manure is removed twice a year, in the Spring and Fall, usually after harvest.

Solid manure removal and/or regrading will occur on or before: 5th of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 5th of October

Animal housing drainage system maintenance will occur on or before: 5th of November

Animal housing area drainage system assessment and maintenance methods:

Debris is removed from flush lanes, drains and corral drains as needed.
Pumps are monitored daily.
Scrape lanes are cleaned as needed.
Corrals are regraded and fill dirt is added as needed to prevent ponding.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Baker Commodities, Inc.

Rendering company or landfill telephone number: (559) 237-4310

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Semiannually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
Roundup	8	gallons	year	fencelines, ponds, and roadways	triple-rinsed and recycled			
Goal	4	gallons	year	fencelines, ponds, roadways	triple-rinsed and recycled			

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Figure 2

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Figure 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: none

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Figure 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Figure 3

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Figure 2

E. FLOOD PROTECTION / INUNDATION REPORT

Provide a published flood zone map that shows the facility is outside the relevant flood zones.

Flood zone map and/or document reference number: 06019C2100H

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: Backflow form

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

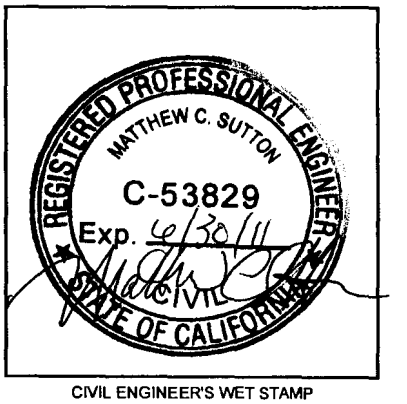
Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☒ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)



CIVIL ENGINEER'S WET STAMP

SIGNATURE OF CIVIL ENGINEER — DATE: 6/21/10

Matt Sutton
PRINT OR TYPE NAME

3451-C Vincent RD; Pleasant Hill, CA 94523
MAILING ADDRESS

(925) 944-2856
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6-25-10	6-28-10
DATE	DATE



LEGEND

☐ Facility Boundary

SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:

0 4000 8000

APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

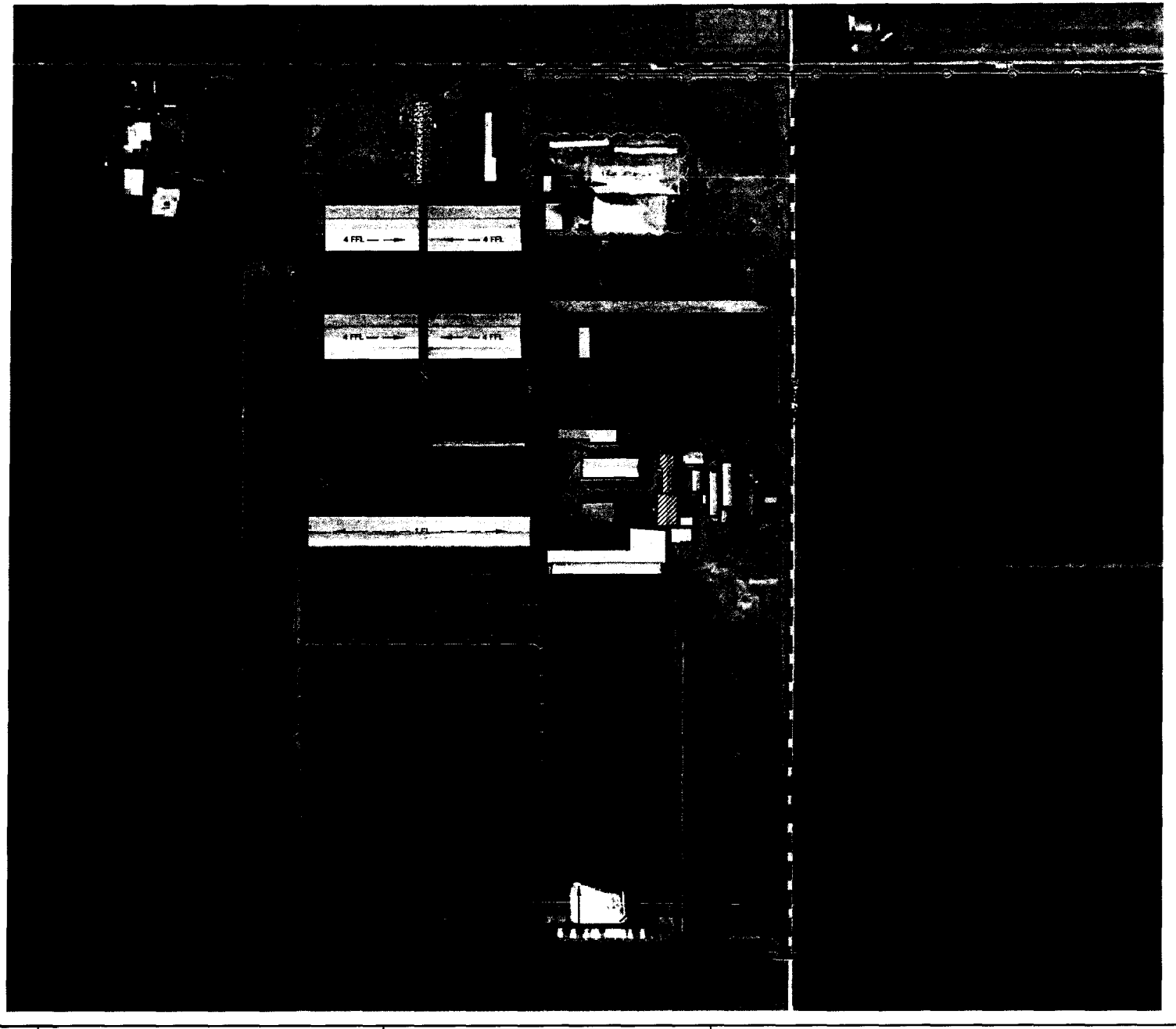
FIGURE 1
TOPOGRAPHIC MAP

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Milk Barn
- Old Milk Barn
- Animal Housing/Shade
- Waste Water Storage
- Corral
- Shop
- Solids Settling Basin
- Commodity/Hay Barn
- Separator Area
- Soild Stacking Area
- Scraped Lane
- Mechanical Separator
- Feed Storage
- Drain
- Pump Point
- Irrigation Well
- Domestic Well
- Stormwater Flow
- Wastewater Pipeline
- Facility Boundary



THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 400 600
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

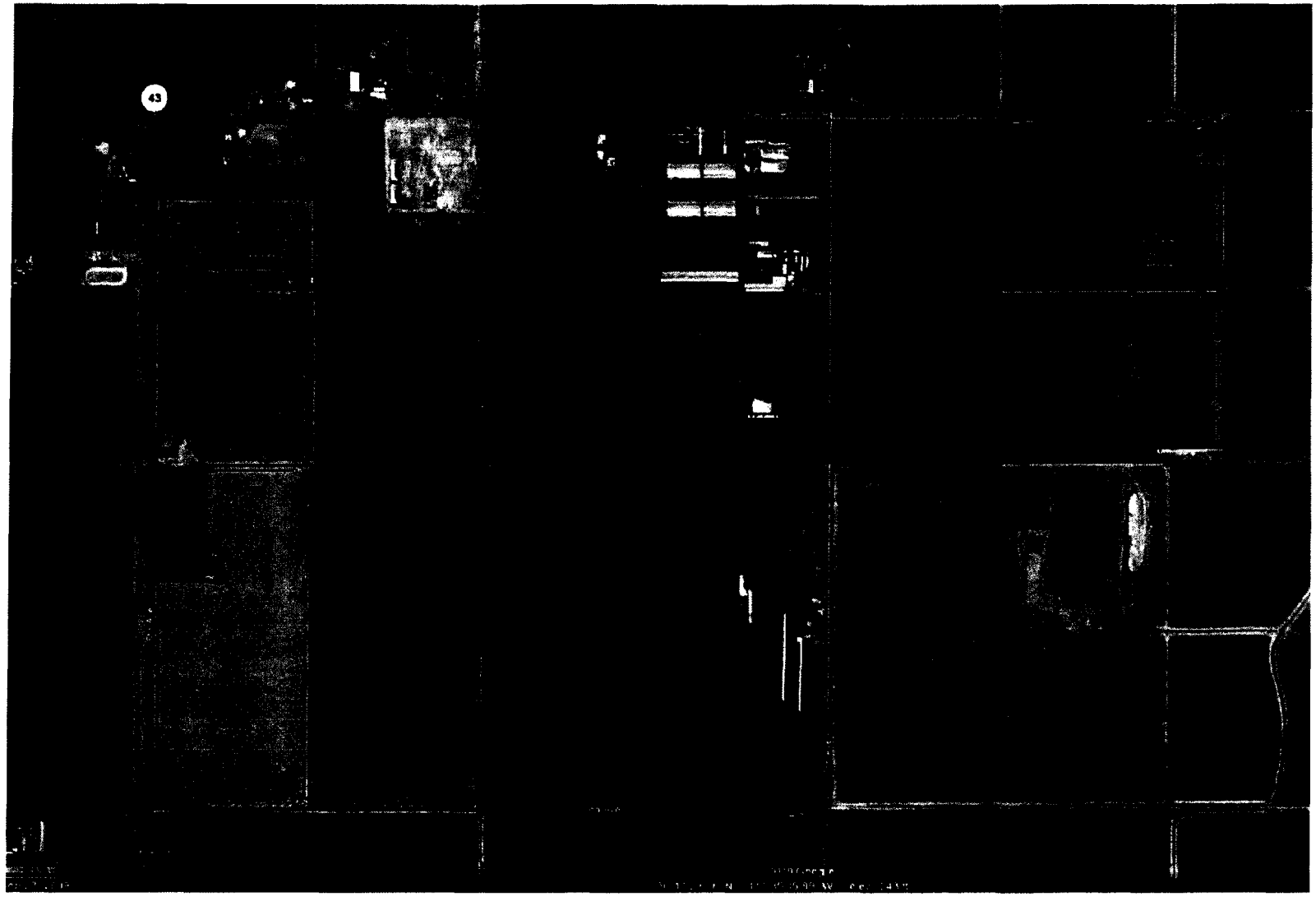
FIGURE 2
DAIRY FACILITY

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Fields
- Tail Water Pond
- Domestic Well
- Irrigation Well
- Stand Pipe
- Tail Water
- Irrigation Pipeline
- Tail Water Pipeline
- Irrigation Flow
- B — Berms
- C — Canal
- SM Solid Manure
- WW Wastewater



SGI environmental THE SOURCE GROUP, INC. 3451-C VINCENT ROAD PLEASANT HILL, CA 94523	SCALE: 0 1200 2400 APPROXIMATE SCALE IN FEET	VACA VIEW DAIRY TULARE COUNTY, CA		**FIGURE 3** DAIRY FIELDS
	PROJECT NO. 011-WDR-002 - TASK 300	DATE: 6/27/10	DRAWN BY: SB	APP. BY: TP

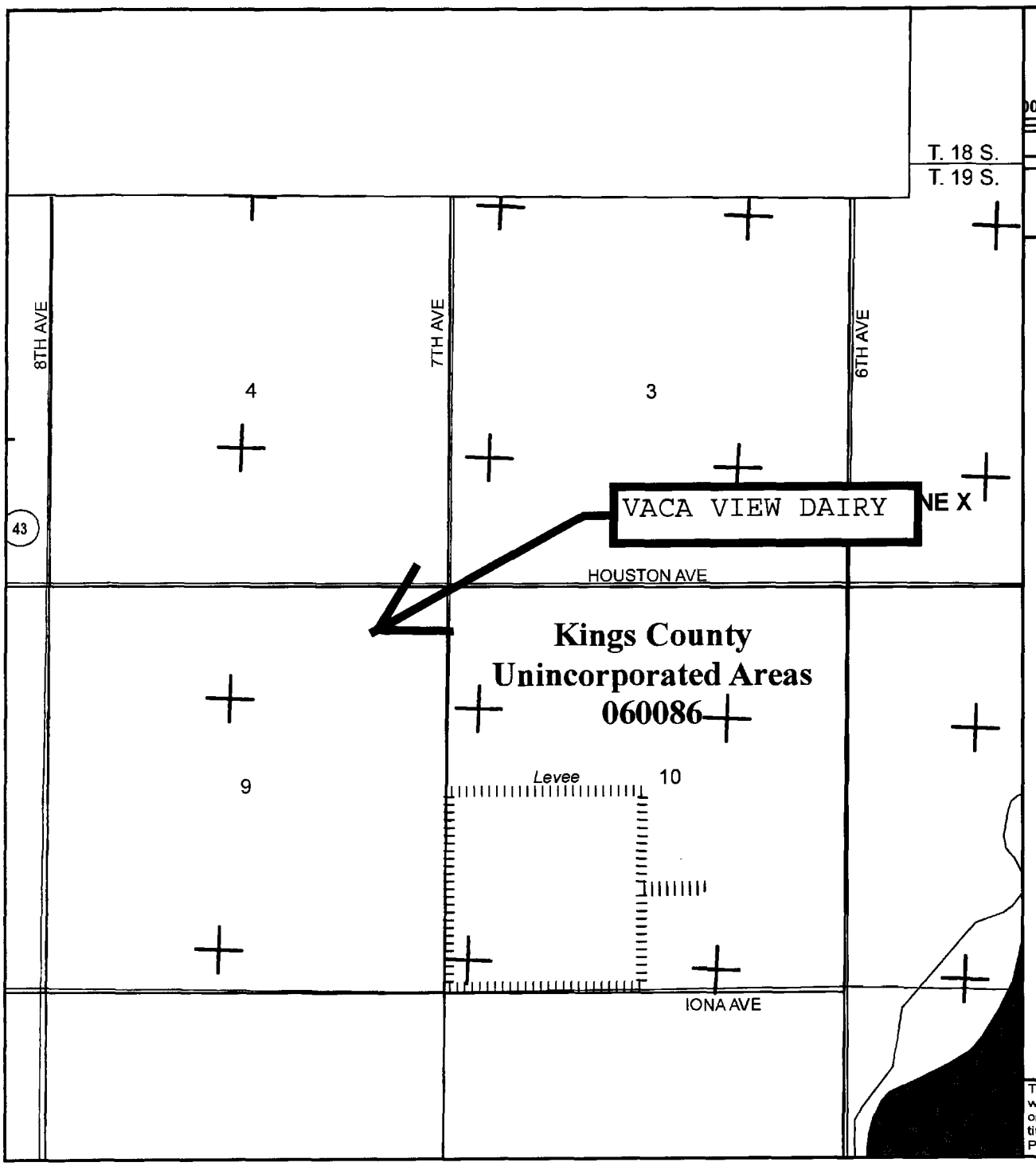
300-WDR

SGI Ag Services THE SOURCE GROUP, INC.

LAND APPLICATION AREA FIELD INFORMATION ATTACHMENT

DAIRY NAME: Vaca View Dairy
DAIRY ADDRESS: 7205 Houston Ave, Hanford, CA 93230

APN	FIELD ID	ACRES	CROPS GROWN	OPERATED BY DAIRY OWNER	LEASED BY DAIRY OPERATOR	LEASED BY OTHER	NUTRIENTS APPLIED
0016-0200-0028-0000	1	20	corn/wheat	X			wastewater/solid manure
0016-0200-0035-0000	2	58	alfalfa	X			wastewater/solid manure
0016-0200-0035-0000	3	10	corn/wheat	X			wastewater/solid manure
0016-0200-0011-0000	4	80	strevia			X	wastewater/solid manure
0016-0200-0019-0000	5	38	tomato			X	wastewater/solid manure
0016-0200-0011-0000	6	58	tomato			X	wastewater/solid manure
0016-0200-0019-0000	7	37	tomato			X	wastewater/solid manure
0016-0200-0033-0000	8	19	tomato			X	wastewater/solid manure
0016-0200-0041-0000	9	47	corn/wheat	X			wastewater/solid manure
0016-0200-0041-0000	10	49	corn/wheat	X			wastewater/solid manure



MAP SCALE 1" = 2000'

0 2000 4000 FEET

0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0225C

FIRM

FLOOD INSURANCE RATE MAP

KINGS COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 225 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HANFORD, CITY OF	060088	0225	C
KINGS COUNTY	060086	0225	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06031C0225C

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

This form consists of six parts and can be used to document compliance with the requirements in Waste Discharge Requirements General Order No. R5-2007-0035 for owners/operators of existing milk cow dairies (Dischargers) to:

1. Identify cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map;

2. Propose and schedule corrective action to prevent backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map; and/or

3. Document there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map.

The Discharger must complete this form except for Parts IV and V, which are to be completed by a trained professional[1]. Both the owner and the operator of the dairy must sign the certification statement in Part VI. Additional sheets may be attached as necessary to complete Parts I, II, and III.

A Site Map must be attached to this form that shows all water supply wells, irrigation wells, and surface water bodies in the dairy's Production Area and all Land Application Areas that are under the Discharger's control. The Site Map must also show all wastewater conveyance structures, wastewater discharge points to surface water, and where wastewater is mixed/blended with fresh irrigation water in these areas. Each of these locations must be identified by a name or number and listed in Part II below. Completion of Part II will identify how backflow can or does occur at each location and any current backflow preventive measures.

PART I: DAIRY FACILITY INFORMATION

A. Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical address of Dairy:

7205 Houston Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

B. Operator Name: Joe Mendes Telephone No: 559-582-4906

Operator mailing address:

3790 Lacey Blvd	Hanford	Kings	93230
Number and Street	City	County	Zip Code

C. Owner Name: Robin Martella Telephone No: 559-752-1019

Owner Mailing Address:

12051 8th Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

[1] A trained professional could be a person certified by the American Backflow Prevention Association, an inspector for a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART II: IDENTIFICATION OF EXISTING BACKFLOW CONDITIONS (due by 1 July 2008)
The attached Site Map identifies all of the locations in the Production Area and all Land Application Areas under the control of the Discharger at the dairy identified in Part I above where there are cross-connections that could, or do, allow the backflow of wastewater into a water supply well, irrigation well, or surface water. For each location shown on the map, the table below describes:

a. How and where wastewater can potentially, or does, backflow to a groundwater supply and/or surface water supply (if there are no current or potential backflow problems, indicate so with "none"), and

b. How backflow of process wastewater into the groundwater or surface water supply is currently prevented (if there is no current prevention method, indicate so with "none").

Location Where Backflow can Occur	How Backflow Can or Does Occur	Current Backflow Preventive Measure
Ag 1	Mixing of freshwater and wastewater in pipeline	none
Ag 2	Mixing of freshwater and wastewater in pipeline	none
Ag 3	Mixing of freshwater and wastewater in pipeline	none
Ag 4	Mixing of freshwater and wastewater in pipeline	none

Potential for backflow of wastewater into surface water was not inspected. Self certification form will be completed by producer.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART III: PROPOSED BACKFLOW CORRECTIVE ACTIONS AND SCHEDULE (due by 1 July 2008)

For each location identified in Part II above where there is currently no backflow prevention, the table below identifies:

a. The method proposed to be implemented that will prevent backflow, and

b. A schedule to install the preventive measure.

If there are no current or potential backflow problems identified in Part II above, this Part does not need to be completed.

Location With No Current Backflow Prevention	Proposed Backflow Prevention Method	Schedule to Install Proposed Backflow Prevention Method
Ag 1	air gap	July 2009
Ag 2	air gap	July 2009
Ag 3	air gap	July 2009
Ag 4	air gap	July 2009

PART IV: DOCUMENTATION OF EXISTING BACKFLOW CONDITIONS AND PROPOSED BACKFLOW PREVENTION METHODS (due by 1 July 2008)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named above and my personal examination of the wastewater system, the above information in Part II above is true, accurate, and complete and the proposed backflow prevention method in Part III above will be effective to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE 6/17/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART V: DOCUMENTATION THAT THERE ARE NO CROSS-CONNENCTIONS THAT WOULD ALLOW THE BACKFLOW OF WASTEWATER INTO A WATER SUPPLY WELL, IRRIGATION WELL, OR SURFACE WATER (due by 1 July 2009)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named in Part I above and my personal examination of the wastewater system, that the backflow prevention methods proposed in Part III above (if any) have been completed, and/or there are currently no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

Kristy Rocha Cordeiro — 6/28/10

SIGNATURE OF TRAINED PROFESSIONAL — DATE

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

PART VI: OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6-23-10	6-28-10
DATE	DATE

JUL 0 2 2010

WASTE MANAGEMENT PLAN

Vaca View Dairy
7205 Houston Ave
Hanford, CA 93230
011-WDR-300

Prepared For:

Joe Mendes
3790 Lacey Blvd
Hanford, CA 93230

Prepared By:

SGI Ag Services THE SOURCE GROUP, INC.

3213 Liberty Square Parkway
Turlock CA 95382

July 1, 2009

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

19S	22E	9	Mt. Diablo	36° 17' 53.57" N	119° 35' 11.21" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1970

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:

0016-0020-0006-0000 0016-0020-0028-0000 0016-0020-0035-0000

B. OPERATOR NAME: Mendes, Joe Telephone no.: (559) 582-4906 (Landline) (Cellular)

3790 Lacey BLVD	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Martella, Robin Telephone no.: (559) 752-1019 (Landline) (Cellular)

12051 8th AVE	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sutton, Matt Telephone no.: (925) 944-2856 (Landline) (Cellular)

Title: Professional Engineer

3451-C Vincent RD	Pleasant Hill	CA	94523
Mailing Address Number and Street	City	State	Zip Code

CONTACT NAME: Cordeiro, Kristy Rocha Telephone no.: (209) 669-1800 (Landline) (209) 277-5596 (Cellular)

Title: Technical Service Provider

3213 Liberty Square PKWY	Turlock	CA	95382
Mailing Address Number and Street	City	State	Zip Code

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,300 milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)

1,495 milk and dry cows combined + 15% (pre-expansion limit)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	1,250	1,300	22	1,400
Dry Cows	195	195	0	1,450
Bred Heifers (15-24 mo.)	80	82	0	900
Heifers (7-14 mo.)	1,000	1,020	0	750
Calves (4-6 mo.)	200	205	0	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Holstein

Average milk production: 70 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 125 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 4.0 per day

Number of hours spent milking each day: 20.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 3.0 run cycles/wash

Bulk tank wash vat volume: 75 gallons/cycle

Bulk tank wash wastewater: 900.0 gallons/day

Pipeline wash and sanitizing: 3.0 run cycles/wash

Pipeline wash vat volume: 200 gallons/cycle

Pipeline wash wastewater: 1,200.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 7,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 25,000 gallons/day

Vacuum pumps / air compressors / chillers type: Well Water Cooled (Water Reused/Recycled)

Vacuum pumps / air compressors / chillers volume: 15,000 gallons/day

Milkbarn and equipment wastewater volume generated daily: 43,100 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0	0	0	0	0	0
	of 1,250	*of 195*	*of 80*	*of 1,000*	*of 200*	*of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 78 sprinklers

Duration of each sprinkler cycle: 2.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 4.0 gallons/minute

Total sprinkler pen wastewater volume: 12,980 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

Description	Source	Throughput (gallons per day)	Discharge Destination
Drop hoses and misc	Fresh Water	1,000	Sent to pond

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 40,000 gallons/day

Recycled water reused: 19,980 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 20,020 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 5,172,000 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	113	40.0	50%	2,813
			Total:	2,813

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 20 %

Description of all solids separation equipment used in flushed lane manure management systems:

Separator and processing pit

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	4,179.14	501,496	31,262.11	3,751,453
Manure generated by the herd sent to pond(s):	2,503.64	300,437	18,728.56	2,247,427
Manure generated by the herd sent to dry lot(s):	1,499.20	179,904	11,214.78	1,345,774
Manure solids (herd) removed by separation:	85.34	10,241	638.41	76,609
Liquid component in separated solids not send to pond(s):	90.95	10,914	680.35	81,642
Imported and facility generated bedding sent to pond(s):	23.44	2,813	175.32	21,039
Total manure and bedding sent to pond(s):	2,527.08	303,250	18,903.89	2,268,466
Residual manure solids and bedding sent to pond(s) w/factor:	182.40	21,888	1,364.48	163,737
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:		66,577		498,034

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Hanford

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.10 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 5.88 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
apron	920	4	0.97	0.50	Drains into pond(s).
apron	510	2	0.97	0.50	Drains into pond(s).
apron	350	1	0.97	0.50	Drains into pond(s).
cistern pad	384	1	0.97	0.50	yard
corral pad	5,180	1	0.97	0.50	Drains into pond(s).
drain	70	1	0.97	0.50	Drains into pond(s).
drain	20	1	0.97	0.50	Drains into pond(s).

drivelane	290	1	0.97	0.50	Drains into pond(s).
drivelane	520	1	0.97	0.50	Drains into pond(s).
exposed concrete	360	1	0.97	0.50	Drains into pond(s).
exposed concrete	1,300	1	0.97	0.50	Drains into pond(s).
exposed feedlane	416	1	0.97	0.50	Drains into pond(s).
extra lane	1,215	1	0.97	0.50	Drains into pond(s).
feed area	60,982	1	0.97	0.50	Drains into pond(s).
feedlane	6,960	1	0.97	0.50	Drains into pond(s).
feedlane	40,400	1	0.97	0.50	Drains into pond(s).
feedlane	4,290	1	0.97	0.50	Drains into pond(s).
feedlane	1,640	1	0.97	0.50	Drains into pond(s).
feedlane	17,986	1	0.97	0.50	Drains into pond(s).
feedlane	18,170	1	0.97	0.50	Drains into pond(s).
flush apron	144	1	0.97	0.50	Drains into pond(s).
lane	900	1	0.97	0.50	Drains into pond(s).
main transfer	8,040	1	0.97	0.50	Drains into pond(s).
milkbarn area	4,700	1	0.97	0.50	Drains into pond(s).
milkbarn pad	646	1	0.97	0.50	Drains into pond(s).
milktruck pad	1,260	1	0.97	0.50	Drains into pond(s).
old lane	1,425	1	0.97	0.50	Drains into pond(s).
pad	1,190	1	0.97	0.50	yard
parking	1,488	1	0.97	0.50	Drains into pond(s).
reminant concrete	2,678	1	0.97	0.50	Drains into pond(s).
road	396	1	0.97	0.50	Drains into pond(s).
separator area	30,210	1	0.99	0.99	Drains into pond(s).
separator pad	300	1	0.97	0.50	Drains into pond(s).
silage pad	14,500	1	0.97	0.50	Drains into pond(s).
transfer lane	2,920	1	0.97	0.50	Drains into pond(s).
transfer lane	3,168	1	0.97	0.50	Drains into pond(s).
transfer lane	4,800	1	0.97	0.50	Drains into pond(s).
transfer lane	1,300	1	0.97	0.50	Drains into pond(s).
transfer lane	3,900	1	0.97	0.50	Drains into pond(s).
transfer lane	624	1	0.97	0.50	Drains into pond(s).
transfer lane	2,448	1	0.97	0.50	Drains into pond(s).
transfer lane	360	1	0.97	0.50	Drains into pond(s).
transfer lane exposed	200	1	0.97	0.50	Drains into pond(s).

washpen	1,360	1	0.97	0.50	Drains into pond(s).

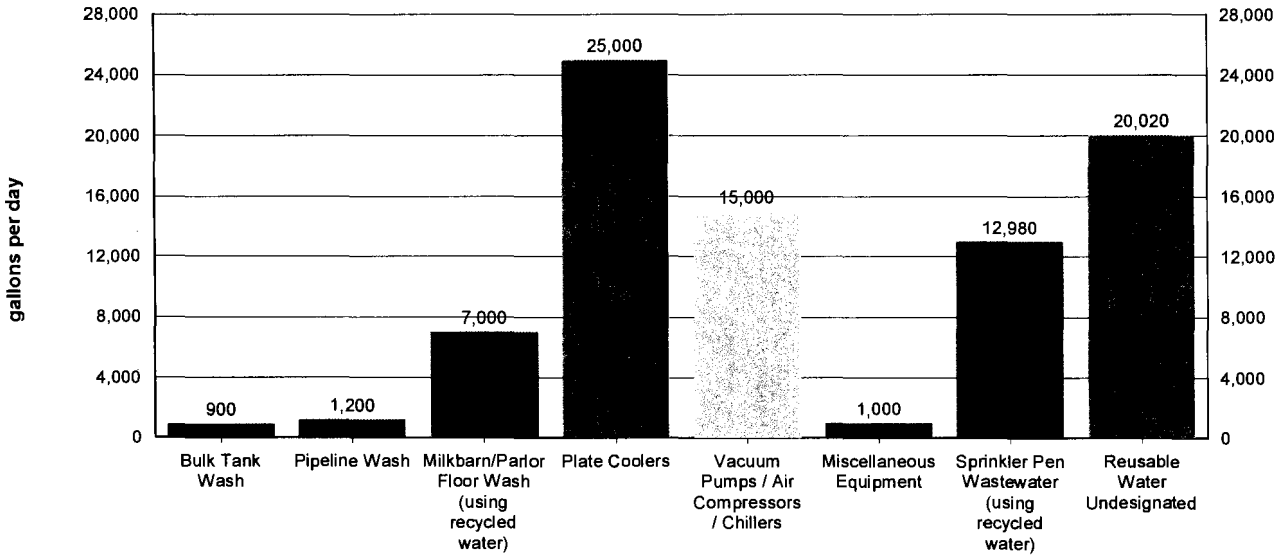
Surface area that does not run off into pond(s):	1,574 sq. ft.
Surface area that runs off into pond(s):	252,616 sq. ft.
Total surface area:	254,190 sq. ft.
Runoff from normal storage period rainfall:	517,236 gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	775,853 gallons/storage period
25 year/24 hour storm event runoff:	321,567 gallons/storage period
Total surface area runoff:	838,803 gallons/storage period
Total surface area runoff with 1.5 factor:	1,097,421 gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	yard
commodity barn	1,170	1	yard
commodity barn	3,848	1	yard
fsb's	32,500	4	Wastewater pond
haybarn	7,950	1	yard
milkbarn	7,728	1	Wastewater pond
milkhouse	2,860	1	yard
old equipment shade	72	1	yard
old milkbarn	1,792	1	Wastewater pond
old shade	1,170	1	Wastewater pond
old shade	1,260	1	Wastewater pond
old shade	1,320	1	yard
old shade	2,640	1	yard
old shade	360	1	yard
old shade	3,120	1	yard
old shade	660	1	yard
old washpen	4,536	1	Wastewater pond
shade	1,280	1	Wastewater pond
shade	1,344	1	Wastewater pond
shade	2,310	1	yard
shade	2,499	1	yard
shade	2,560	1	yard

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

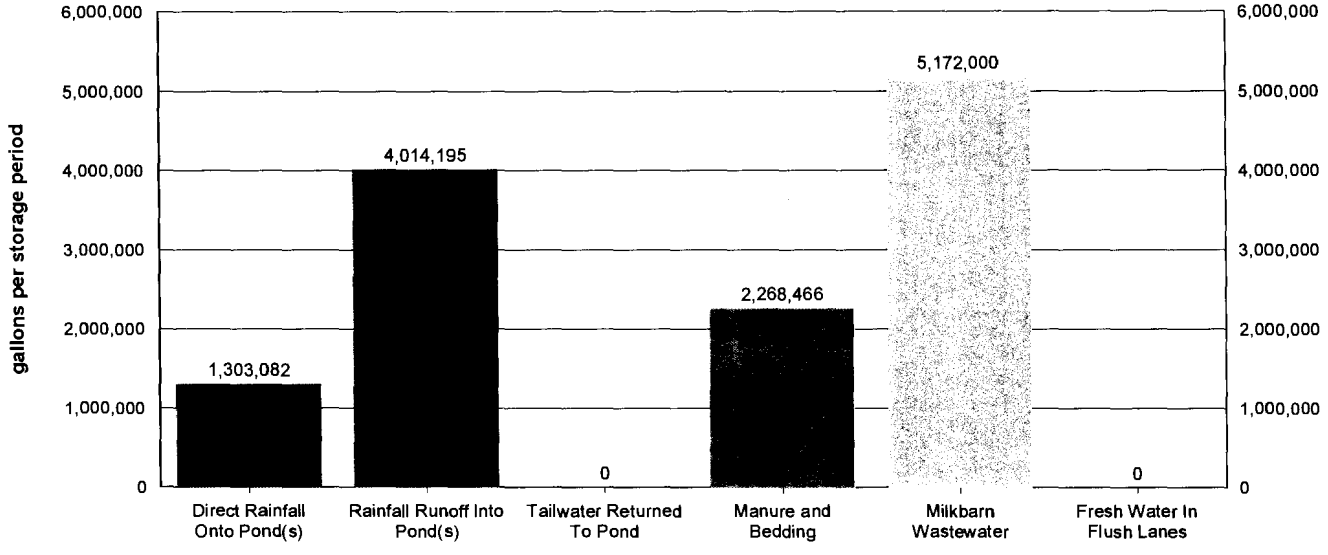


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 43,100 gallons/day

Total milkbarn wastewater generated per period: 5,172,000 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

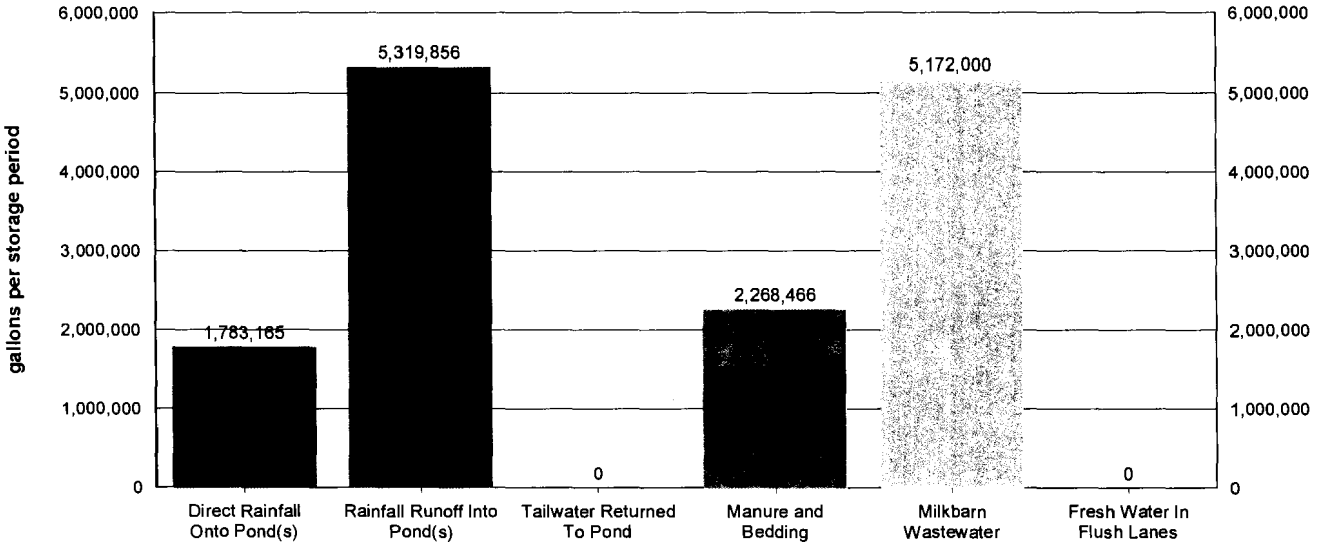


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	106,315	gallons/day
Total process wastewater generated per period:	12,757,743	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	11,091,152	gallons
	1,482,671	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)

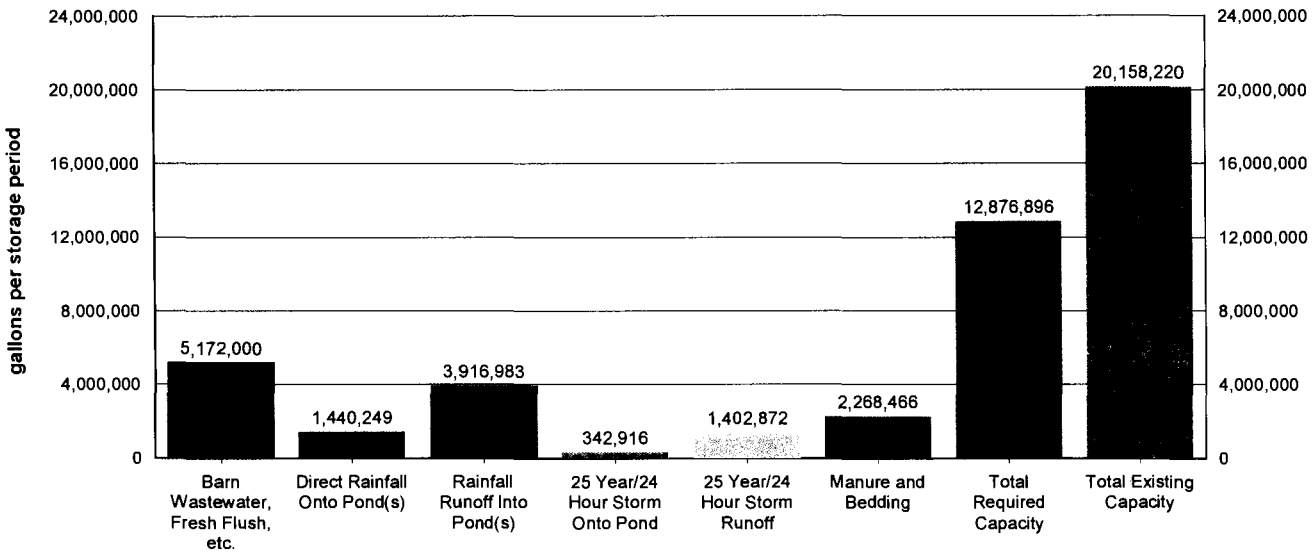


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	121,196	gallons/day
Total process wastewater generated per period:	14,543,487	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	12,876,896	gallons
	1,721,391	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

D. STORAGE VOLUME ASSESSMENT (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Barn wastewater, fresh flush water, and tailwater:	5,172,000	gallons/storage period
Manure and bedding sent to pond:	2,268,466	gallons/storage period
Precipitation onto pond:	1,440,249	gallons/storage period
Precipitation runoff:	3,916,983	gallons/storage period
25 year/24 hour storm onto pond:	342,916	gallons/storage period
25 year/24 hour storm runoff:	1,402,872	gallons/storage period
Residual solids after liquids have been removed (liquid equivalent):	163,737	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total required capacity:	12,876,896	gallons/storage period
Total existing capacity:	20,158,220	gallons/storage period
Existing capacity meets estimated storage needs:	[X] Yes [ ] No	

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy 's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: SSB

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 0 feet above the pond invert beginning in May of each year.

Sludge accumulation will be measured monthly.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are removed using a loader.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2 feet above the pond invert beginning in April of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 6.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are pumped out during irrigations.
Solids are pumped into slurry trucks.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
1/2 old milkhouse	1	648
commodity barn	1	3,848
fsb's	4	130,000
milkbarn	1	7,728
old milkbarn	1	1,792
old shade	1	1,170
old shade	1	1,260
old shade	1	360
old shade	1	3,120
old shade	1	660
old washpen	1	4,536
shade	1	1,280
shade	1	1,344

shade	1	2,310
shade	1	2,499
shade	1	2,560
shade	1	3,276
shade	1	2,400
shade	1	52,976
shade	1	8,700
shade	1	12,800
shade	1	6,200
shade	1	4,840
shop	1	630
Buildings without rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
commodity barn	1	1,170
haybarn	1	7,950
milkhouse	1	2,860
old equipment shade	1	72
old shade	1	1,320
old shade	1	2,640
shop	1	1,900
shop attachment	1	216

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 5th of October

Assessment for other rainfall collections systems will occur on or before: 5th of November

Description of how rainfall collection systems will be assessed:

Gutters and downspouts will be cleaned and repaired as needed.
Roofwater that comes in contact with manured areas will be collected and conveyed to the wastewater system.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 5th of October

Conditions requiring manure removal and/or regrading:

Solid manure is removed twice a year, in the Spring and Fall, usually after harvest.

Solid manure removal and/or regrading will occur on or before: 5th of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

COPY

SGI Ag Services THE SOURCE GROUP, INC.

FACILITY ASSESSMENT

DAIRY FACILITY INFORMATION:

Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical Address of Dairy: 7205 Houston Ave, Hanford, CA 93230

Operator Name: Joe Mendes

Operator Mailing Address: 3790 Lacey Blvd, Hanford, CA 93230

Operator Telephone No.: 559-582-4906

Owner Name: Robin Martella

Owner Mailing Address: 12051 8th Ave, Hanford, CA 93230

Owner Telephone No.: 559-752-1019

Production Area Design & Construction:

Corral and/or Pens:
Are corrals and/or pens designed and constructed to collect and divert all process wastewater to the retention pond?

- ☐ Yes, with no exceptions
- ☒ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Front Corral by milkbarn	Collect & convey drain to WWS	July 2011
Back Heifer Corrals by road	Improve Conveyance	July 2011

Animal Housing Area:

Are all animal housing areas (barn, shed, milk parlor, etc.) designed and constructed to divert all water that has contacted animal wastes to the retention pond?

- ☒ Yes, with no exceptions
- ☐ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:

Manure and Feed Storage Areas:

Are all manure and/or feed storage areas designed and constructed to collect and divert runoff and leachate from these areas to the retention pond?

- ☐ Yes, with no exceptions
- ☒ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Feed Areas	Improve Conveyance to WWS	July 2011

OWNER AND/OR OPERATOR CERTIFICATION:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am

aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I also certify that any and all modifications or improvements needed and stated above will be implemented by July 1, 2011 in order to meet the criteria mandated under Schedule of Tasks J.1 of waste Discharge Requirements General Order No. R5-2007-0035.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
PRINT OR TYPE NAME	PRINT OR TYPE NAME

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 5th of October

Animal housing drainage system maintenance will occur on or before: 5th of November

Animal housing area drainage system assessment and maintenance methods:

Debris is removed from flush lanes, drains and corral drains as needed.
Pumps are monitored daily.
Scrape lanes are cleaned as needed.
Corrals are regraded and fill dirt is added as needed to prevent ponding.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Baker Commodities, Inc.

Rendering company or landfill telephone number: (559) 237-4310

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Semiannually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
Roundup	8	gallons	year	fencelines, ponds, and roadways	triple-rinsed and recycled			
Goal	4	gallons	year	fencelines, ponds, roadways	triple-rinsed and recycled			

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Figure 2

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Figure 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: none

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Figure 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Figure 3

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Figure 2

E. FLOOD PROTECTION / INUNDATION REPORT

Provide a published flood zone map that shows the facility is outside the relevant flood zones.

Flood zone map and/or document reference number: 06019C2100H

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: Backflow form

SGI Ag Services THE SOURCE GROUP, INC.

FACILITY ASSESSMENT

DAIRY FACILITY INFORMATION:

Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical Address of Dairy: 7205 Houston Ave, Hanford, CA 93230

Operator Name: Joe Mendes

Operator Mailing Address: 3790 Lacey Blvd, Hanford, CA 93230

Operator Telephone No.: 559-582-4906

Owner Name: Robin Martella

Owner Mailing Address: 12051 8th Ave, Hanford, CA 93230

Owner Telephone No.: 559-752-1019

Production Area Design & Construction:

Corral and/or Pens:
Are corrals and/or pens designed and constructed to collect and divert all process wastewater to the retention pond?

☐ Yes, with no exceptions

☐ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Front Corral by milkbarn	Collect & Convey drain to WWS	July 2011
Back Heifer Corrals by road	Improve Conveyance to WWS	July 2011

Animal Housing Area:

Are all animal housing areas (barn, shed, milk parlor, etc.) designed and constructed to divert all water that has contacted animal wastes to the retention pond?

☒ Yes, with no exceptions

☐ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:

Manure and Feed Storage Areas:

Are all manure and/or feed storage areas designed and constructed to collect and divert runoff and leachate from these areas to the retention pond?

☐ Yes, with no exceptions

☒ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Feed Areas	Improve conveyance to WWS	July 2011

OWNER AND/OR OPERATOR CERTIFICATION:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am

aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I also certify that any and all modifications or improvements needed and stated above will be implemented by July 1, 2011 in order to meet the criteria mandated under Schedule of Tasks J.1 of waste Discharge Requirements General Order No. R5-2007-0035.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address): _____

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

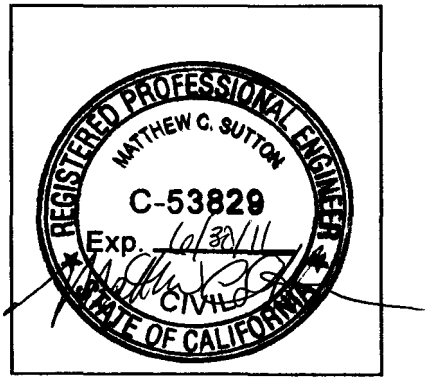
Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☒ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)



CIVIL ENGINEER'S WET STAMP

Matthew C Sutton — 6/21/10

SIGNATURE OF CIVIL ENGINEER — DATE

Matt Sutton
PRINT OR TYPE NAME

3451-C Vincent RD; Pleasant Hill, CA 94523
MAILING ADDRESS

(925) 944-2856
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6/23/10	6-28-10
DATE	DATE



LEGEND

☐ Facility Boundary

SGI environmental — THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 4000 8000
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

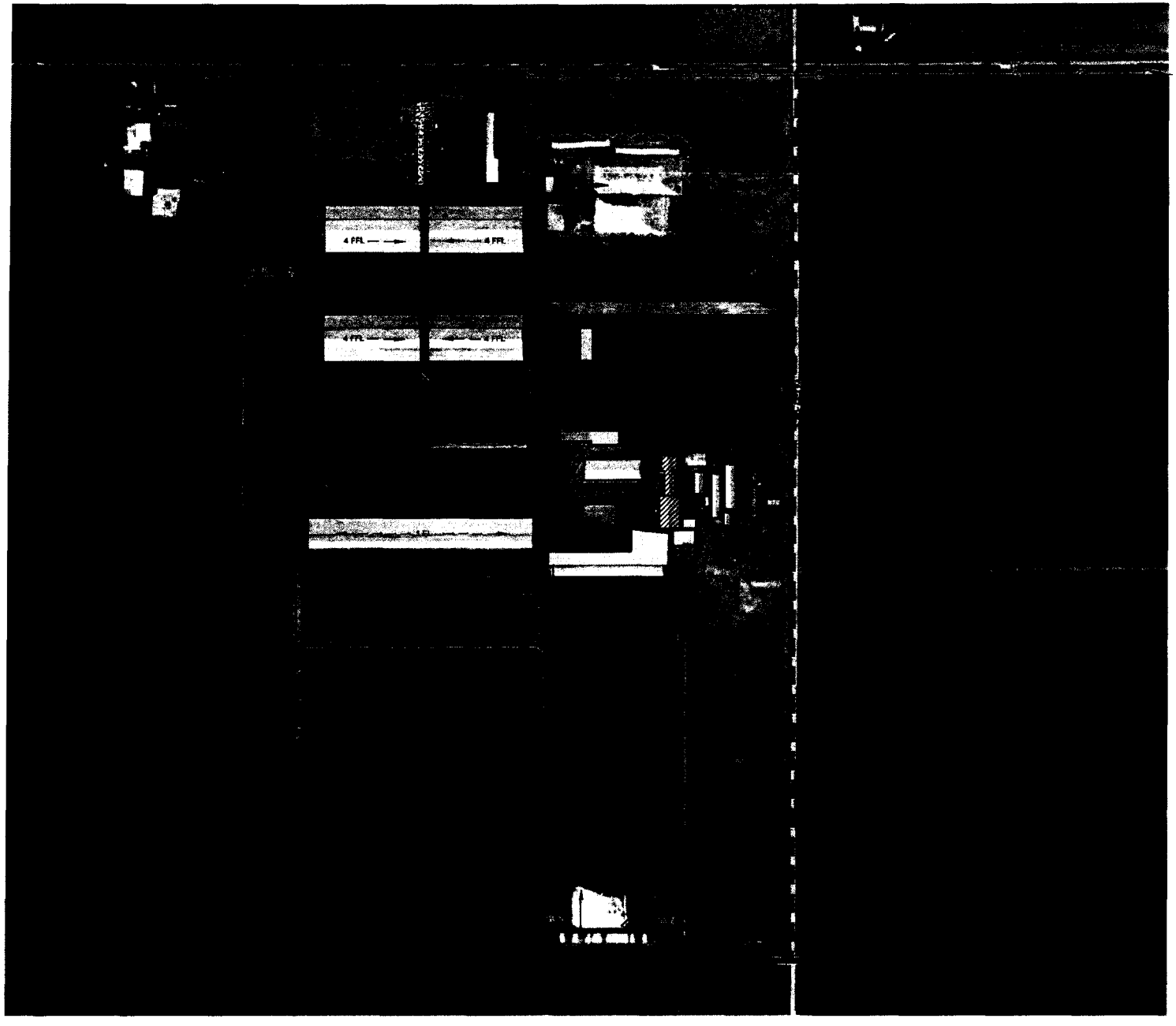
PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

FIGURE 1
TOPOGRAPHIC MAP

300-WDR

LEGEND

- Milk Barn
- Old Milk Barn
- Animal Housing/Shade
- Waste Water Storage
- Corral
- Shop
- Solids Settling Basin
- Commodity/Hay Barn
- Separator Area
- Solid Stacking Area
- Scraped Lane
- Mechanical Separator
- Feed Storage
- Drain
- Pump Point
- Irrigation Well
- Domestic Well
- Stormwater Flow
- Wastewater Pipeline
- Facility Boundary



SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 400 600
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

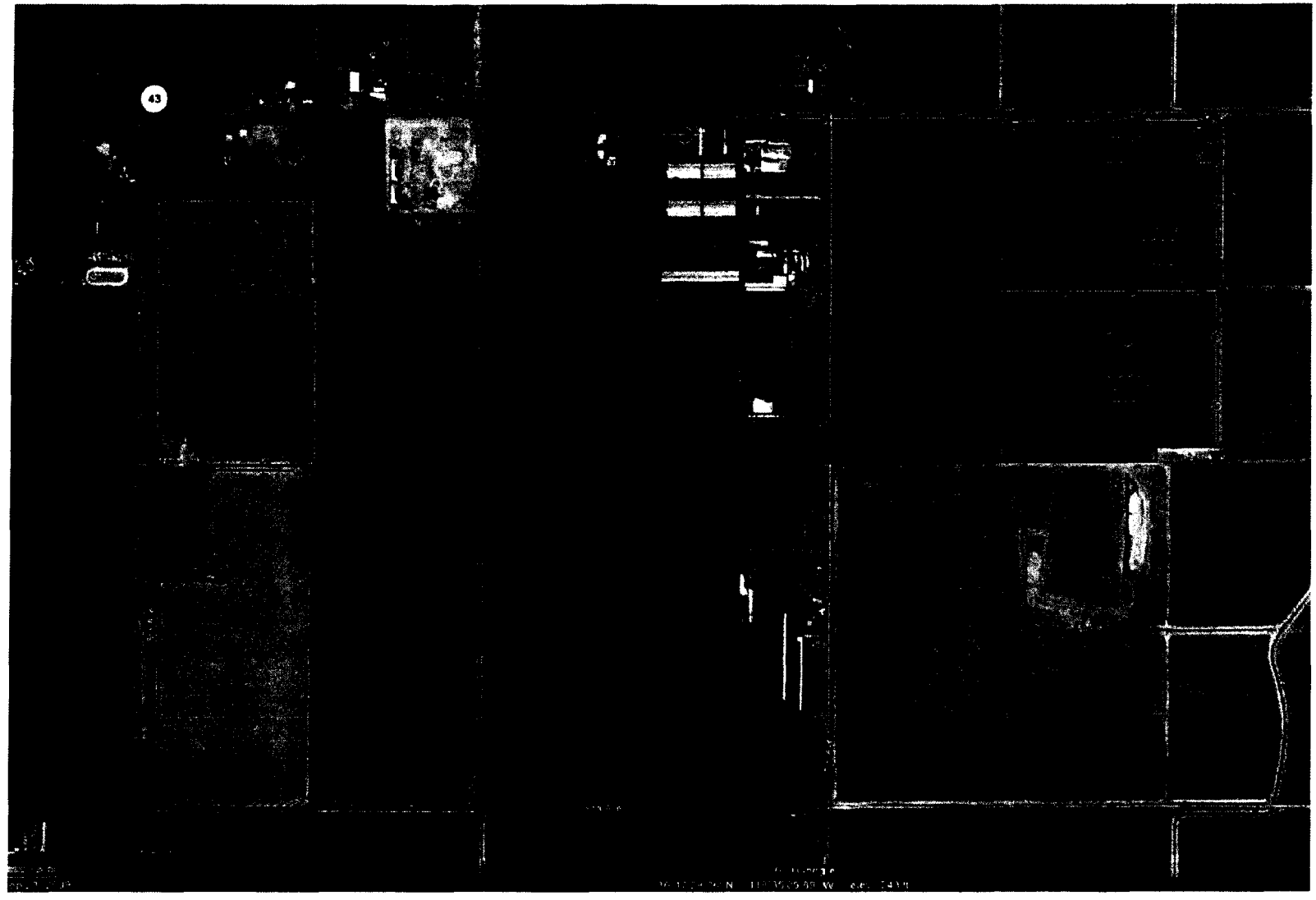
FIGURE 2
DAIRY FACILITY

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Fields
- Tail Water Pond
- Domestic Well
- Irrigation Well
- Stand Pipe
- Tail Water
- Irrigation Pipeline
- Tail Water Pipeline
- Irrigation Flow
- B — Berms
- C — Canal
- SM Solid Manure
- WW Wastewater



SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 1200 2400
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

FIGURE 3
DAIRY FIELDS

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/27/10	SB	TP

300-WDR

shade	3,276	1	yard
shade	2,400	1	corral
shade	52,976	1	Wastewater pond
shade	8,700	1	Wastewater pond
shade	12,800	1	Wastewater pond
shade	6,200	1	Wastewater pond
shade	4,840	1	yard
shop	630	1	Wastewater pond
shop	1,900	1	yard
shop attachment	216	1	yard

Surface area that does not run off into pond(s): 44,649 sq. ft.

Surface area that runs off into pond(s): 231,712 sq. ft.

Total surface area: 276,361 sq. ft.

Runoff from normal storage period rainfall: 849,330 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,273,995 gallons/storage period

25 year/24 hour storm event runoff: 303,332 gallons/storage period

Total surface area runoff: 1,152,662 gallons/storage period

Total surface area runoff with 1.5 factor: 1,577,327 gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
dairy facility	1,697,957	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 1,697,957 sq. ft.

Total surface area: 1,697,957 sq. ft.

Runoff from normal storage period rainfall: 1,244,757 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,867,135 gallons/storage period

25 year/24 hour storm event runoff: 777,973 gallons/storage period

Total surface area runoff: 2,022,730 gallons/storage period

Total surface area runoff with 1.5 factor: 2,645,108 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: SSB

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	630 ft.	Earthen Depth (ED):	7 ft.
Earthen Width (EW):	168 ft.	Side Slope (S):	1.4 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	0.0 ft.
Calculations			
Liquid Length (LL):	627 ft.	Storage Volume Adjusted for Dead Storage Loss:	582,308 cu. ft.
Liquid Width (LW):	165 ft.		
Pond Surface Area:	105,840 sq. ft.	Pond Marker Elevation:	5.1 ft.
Storage Volume:	582,308 cu. ft.	Evaporation Volume:	667,762 gals/period
		Adjusted Surface Area:	102,605 sq. ft.

POND OR BASIN DESCRIPTION: WWS

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	1,165 ft.	Earthen Depth (ED):	18 ft.
Earthen Width (EW):	134 ft.	Side Slope (S):	0.7 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	2.0 ft.
Calculations			
Liquid Length (LL):	1,164 ft.	Storage Volume Adjusted for Dead Storage Loss:	2,112,454 cu. ft.
Liquid Width (LW):	133 ft.		
Pond Surface Area:	156,110 sq. ft.	Pond Marker Elevation:	16.1 ft.
Storage Volume:	2,363,976 cu. ft.	Evaporation Volume:	998,829 gals/period
		Adjusted Surface Area:	153,476 sq. ft.

Potential storage losses (due to dead storage):	251,522.0 cubic feet - or -	1,881,515.2 gallons
Liquid storage surface area:	257,907 sq. ft.	
Rainfall onto retention pond(s):	960,166 gallons/storage period	
Rainfall runoff into retention pond(s):	2,611,322 gallons/storage period	
Normal rainfall onto retention pond(s) with 1.5 factor:	1,440,249 gallons/storage period	
Normal rainfall runoff into retention pond(s) with 1.5 factor:	3,916,983 gallons/storage period	
Storage period evaporation (default):	13.92 inches/storage period	
Storage period evaporation (user-override):	inches/storage period	

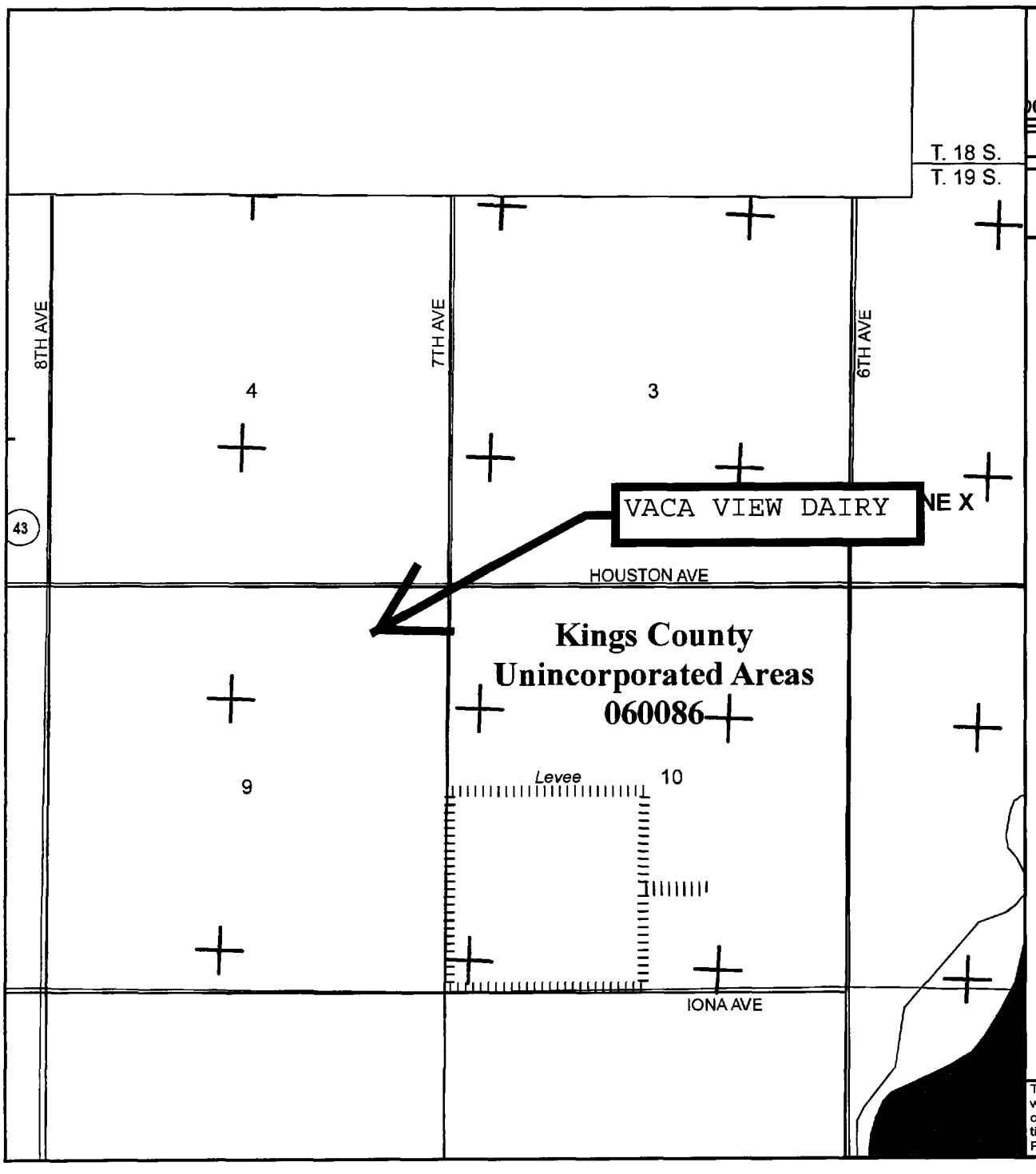
Storage period evaporation volume:	1,666,591	gallons/storage period
Manure and bedding sent to pond(s):	2,268,466	gallons/storage period
Milkbarn water sent to pond(s):	5,172,000	gallons/storage period
Fresh flush water for storage period:	0	gallons/storage period

SGI Ag Services **THE SOURCE GROUP, INC.**

LAND APPLICATION AREA FIELD INFORMATION ATTACHMENT

DAIRY NAME: Vaca View Dairy
DAIRY ADDRESS: 7205 Houston Ave, Hanford, CA 93230

APN	FIELD ID	ACRES	CROPS GROWN	OPERATED BY DAIRY OWNER	LEASED BY DAIRY OPERATOR	LEASED BY OTHER	NUTRIENTS APPLIED
0016-0200-0028-0000	1	20	corn/wheat	X			wastewater/solid manure
0016-0200-0035-0000	2	58	alfalfa	X			wastewater/solid manure
0016-0200-0035-0000	3	10	corn/wheat	X			wastewater/solid manure
0016-0200-0011-0000	4	80	strevia			X	wastewater/solid manure
0016-0200-0019-0000	5	38	tomato			X	wastewater/solid manure
0016-0200-0011-0000	6	58	tomato			X	wastewater/solid manure
0016-0200-0019-0000	7	37	tomato			X	wastewater/solid manure
0016-0200-0033-0000	8	19	tomato			X	wastewater/solid manure
0016-0200-0041-0000	9	47	corn/wheat	X			wastewater/solid manure
0016-0200-0041-0000	10	49	corn/wheat	X			wastewater/solid manure



MAP SCALE 1" = 2000'

0 2000 4000 FEET

0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0225C

FIRM

FLOOD INSURANCE RATE MAP

KINGS COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 225 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HANFORD, CITY OF	060088	0225	C
KINGS COUNTY	060086	0225	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06031C0225C

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

This form consists of six parts and can be used to document compliance with the requirements in Waste Discharge Requirements General Order No. R5-2007-0035 for owners/operators of existing milk cow dairies (Dischargers) to:

1. Identify cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map;

2. Propose and schedule corrective action to prevent backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map; and/or

3. Document there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map.

The Discharger must complete this form except for Parts IV and V, which are to be completed by a trained professional[1]. Both the owner and the operator of the dairy must sign the certification statement in Part VI. Additional sheets may be attached as necessary to complete Parts I, II, and III.

A Site Map must be attached to this form that shows all water supply wells, irrigation wells, and surface water bodies in the dairy's Production Area and all Land Application Areas that are under the Discharger's control. The Site Map must also show all wastewater conveyance structures, wastewater discharge points to surface water, and where wastewater is mixed/blended with fresh irrigation water in these areas. Each of these locations must be identified by a name or number and listed in Part II below. Completion of Part II will identify how backflow can or does occur at each location and any current backflow preventive measures.

PART I: DAIRY FACILITY INFORMATION

A. Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical address of Dairy:

7205 Houston Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

B. Operator Name: Joe Mendes Telephone No: 559-582-4906

Operator mailing address:

3790 Lacey Blvd	Hanford	Kings	93230
Number and Street	City	County	Zip Code

C. Owner Name: Robin Martella Telephone No: 559-752-1019

Owner Mailing Address:

12051 8th Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

[1] A trained professional could be a person certified by the American Backflow Prevention Association, an inspector for a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART II: IDENTIFICATION OF EXISTING BACKFLOW CONDITIONS (due by 1 July 2008)
The attached Site Map identifies all of the locations in the Production Area and all Land Application Areas under the control of the Discharger at the dairy identified in Part I above where there are cross-connections that could, or do, allow the backflow of wastewater into a water supply well, irrigation well, or surface water. For each location shown on the map, the table below describes:

a. How and where wastewater can potentially, or does, backflow to a groundwater supply and/or surface water supply (if there are no current or potential backflow problems, indicate so with "none"), and

b. How backflow of process wastewater into the groundwater or surface water supply is currently prevented (if there is no current prevention method, indicate so with "none").

Location Where Backflow can Occur	How Backflow Can or Does Occur	Current Backflow Preventive Measure
Ag 1	Mixing of freshwater and wastewater in pipeline	none
Ag 2	Mixing of freshwater and wastewater in pipeline	none
Ag 3	Mixing of freshwater and wastewater in pipeline	none
Ag 4	Mixing of freshwater and wastewater in pipeline	none

Potential for backflow of wastewater into surface water was not inspected. Self certification form will be completed by producer.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART III: PROPOSED BACKFLOW CORRECTIVE ACTIONS AND SCHEDULE (due by 1 July 2008)

For each location identified in Part II above where there is currently no backflow prevention, the table below identifies:

a. The method proposed to be implemented that will prevent backflow, and

b. A schedule to install the preventive measure.

If there are no current or potential backflow problems identified in Part II above, this Part does not need to be completed.

Location With No Current Backflow Prevention	Proposed Backflow Prevention Method	Schedule to Install Proposed Backflow Prevention Method
Ag 1	air gap	July 2009
Ag 2	air gap	July 2009
Ag 3	air gap	July 2009
Ag 4	air gap	July 2009

PART IV: DOCUMENTATION OF EXISTING BACKFLOW CONDITIONS AND PROPOSED BACKFLOW PREVENTION METHODS (due by 1 July 2008)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named above and my personal examination of the wastewater system, the above information in Part II above is true, accurate, and complete and the proposed backflow prevention method in Part III above will be effective to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE 6/17/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART V: DOCUMENTATION THAT THERE ARE NO CROSS-CONNENCTIONS THAT WOULD ALLOW THE BACKFLOW OF WASTEWATER INTO A WATER SUPPLY WELL, IRRIGATION WELL, OR SURFACE WATER (due by 1 July 2009)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named in Part I above and my personal examination of the wastewater system, that the backflow prevention methods proposed in Part III above (if any) have been completed, and/or there are currently no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 6/28/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

PART VI: OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6/23/10	6-28-10
DATE	DATE

Appendix G

Geotechnical Engineering Report

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
PROPOSED BIDA SYSTEM – SOZINHO NO. 5 DAIRY
12252 7TH AVENUE
HANFORD, CALIFORNIA 93230

BSK PROJECT G24000678

PREPARED FOR:

4-CREEKS, INC.
324 S. SANTA FE STREET, SUITE A
VISALIA, CALIFORNIA 93292

JUNE 21, 2024

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
PROPOSED BIDA SYSTEM – SOZINHO NO. 5 DAIRY
12252 7TH AVENUE
HANFORD, CALIFORNIA 93230

Prepared for:

4-Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, California 93292

BSK Project: G24000678

June 21, 2024

Prepared by:

Adrian Sizemore, EIT
Staff Professional II



Neva M. Popenoe, PE, GE
Fresno Branch Manager

BSK Associates
691 N Laverne Avenue, Suite 101
Fresno, California 93727
(559) 497-2880
www.bskassociates.com

Distribution: Madison Caesar, 4-Creeks, Inc. (madisonc@4-creeks.com)

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Appendix A: Field Exploration
Appendix B: Laboratory Testing

1 INTRODUCTION

1.1 General

This report presents the results of our geotechnical engineering investigation for the proposed BIDA water treatment system to be constructed at Sozinho No. 5 Dairy in Hanford, California as shown on the Site Vicinity Map, Figure 1. The geotechnical engineering investigation was conducted in general accordance with the scope of services outlined in BSK Proposal G24000678, dated April 5, 2024. The proposed improvements and exploratory borings and tests are shown on Figure 2, Boring Location Map.

In the event that significant changes occur in the design or location of the proposed improvements, the conclusions and recommendations presented in this report will not be considered valid unless the changes are reviewed by BSK, and the conclusions and recommendations are modified or verified in writing as necessary.

1.2 Project Description

BSK understands that the project consists of the completion of a geotechnical analysis for the proposed BIDA water treatment system at Sozinho No. 5 Dairy, located at 12252 7th Avenue, in Hanford, California. The proposed system consists of two (2) 60 foot by 1000-foot beds. The beds are anticipated to be raised lengthwise in the center with a three percent (3%) cross slope to the edge on either side. The BIDA beds are anticipated to be constructed entirely above ground, and the anticipated maximum height of the beds is approximately one (1) foot above ground surface. Concrete drainage channels and barrier curbs will also be constructed lengthwise along the outside edges of the beds. The base of the beds will contain layers of materials consisting of a liner, plastic pallets, and shade mesh. The beds will be constructed side by side lengthwise with 20 feet of separation.

Other improvements are anticipated to include underground utilities and other miscellaneous structures supported on mat footings. Maximum loading on structures is anticipated to be less than 1,000 psf.

If the project description differs significantly from that anticipated above, we should be notified so that we can review our scope of work for applicability.

1.3 Purpose and Scope of Services

The purpose of the geotechnical investigation is to assess soil conditions at the project site and provide geotechnical engineering recommendations for use by the project designers. The scope of the investigation included a field exploration, laboratory testing, engineering analysis, and preparation of this report.

2 FIELD INVESTIGATION AND LABORATORY TESTING

2.1 General

The field exploration, conducted on May 31, 2024, consisted of a site reconnaissance and drilling three (3) exploratory test borings. The borings were drilled to depths of approximately 21.5 feet below ground surface (bgs) within the proposed improvement locations. The test borings were drilled with a truck-mounted drill rig, equipped with 8-inch augers. The approximate boring locations are presented on Figure 2. Details of the field exploration and the boring logs are provided in Appendix A.

2.2 Laboratory Testing

Laboratory testing of selected soil samples were performed to evaluate certain physical, chemical, and engineering characteristics and properties. The testing program included: in-situ moisture and density, gradation, direct shear, collapse potential, and corrosion potential. The in-situ moisture and dry density test results are presented on the boring logs in Appendix A. Descriptions of the laboratory test methods, and test results are provided in Appendix B.

3 SITE CONDITIONS

3.1 Site Description

The proposed improvements will be situated within the Sozinho No. 5 Dairy facility, which generally contains agricultural fields, access roads, lagoons, and other dairy improvements including shade structures. The existing corrals contain manure at the surface and miscellaneous improvements such as fences and feed troughs. The area containing the proposed BIDA beds included an agricultural field and was bound to the north by the existing Sozinho No. 5 Dairy facility with Houston Avenue and agricultural fields beyond, to the east by the existing Sozinho No. 5 Dairy facility with 7th Avenue and agricultural fields beyond, to south and west by unpaved access roads with agricultural fields beyond. The depths of the existing lagoons were not provided. The site also contained pumps and other dairy infrastructure.

3.2 Subsurface Conditions

The near surface soil consisted of silty sand and clayey sand underlain by layers of silty sand, clay with varying sand content, and poorly graded sand with silt to the maximum depth explored (21.5 feet bgs). The boring logs in Appendix A provide a more detailed description of the soils encountered in each boring, including the applicable Unified Soil Classification System symbols. The approximate locations of the soil borings are shown on the Boring Location Map (Figure 2).

3.3 Groundwater

Groundwater was not encountered at the completion of our field exploration, March 20, 2024. The California Department of Water Resources indicates the depth to regional groundwater at the project

site is greater than 50 feet bgs. However, fluctuations in the groundwater level or the presence of perched groundwater may occur due to variations in rainfall, irrigation, seasonal factors, pumping from wells, and other factors that were not evident at the time of our investigation.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 General

Based upon the data collected during this investigation and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed improvements, provided the recommendations presented in this report are incorporated into the project design and construction. The planned improvements may be supported on shallow isolated/continuous reinforced concrete spread footings, thickened mat foundations, and/or pole footings provided the structural engineer evaluate if the structure can tolerate the estimated settlement shown in Section 4.6.

4.2 Soil Corrosivity

One (1) surface soil sample obtained from the site was tested to provide a preliminary screening of the potential for concrete deterioration or steel corrosion due to attack by soil-borne soluble salts. The test results are presented in Appendix B. The soil was evaluated for minimum resistivity and pH (CT 643), soluble sulfate (CT 417), and chlorides (CT 422).

The water-soluble sulfate is considered Exposure Category S0 per Table 19.3.1.1 of ACI 318-19. The water-soluble chloride content severity class depends on the ability to protect the soils from moisture. The chloride content with moisture would be considered Exposure Category C0 per Table 19.3.1.1 of ACI 318-19. Type I/Type II cement is recommended for use in the formulation of concrete. Other recommendations for concrete by exposure type should reference Table 19.3.2.1 in ACI 318-19.

The site soils minimum resistivity is high and is considered potentially mildly corrosive to buried metal. Buried reinforcing steel protection be provided with the minimum concrete cover required by the American Concrete Institute (ACI) Building Code for Structural Concrete, ACI 318, Chapter 7.7 and 20.5.1. Buried metal conduits, ferrous metal pipes, and exposed steel must have protective coatings in accordance with the manufacturer's specifications. Based on the anticipated groundwater, and exposure category, there are no restrictions for cement type and maximum water-cement ratio. If detailed recommendations for corrosion protection are desired, a corrosion specialist should be consulted.

4.3 Seismic Design Criteria

There are no known active fault zones within the vicinity of the project site. In accordance with Section 1613.2.2 of the 2022 California Building Code (CBC) and Table 20.3-1 of ASCE 7-16, the site can be classified as Site Class D (stiff soil profile).

Use of the 2022 California Building Code (CBC) seismic design criteria is considered appropriate and the following parameters are considered applicable for the structural design of foundations.

Table 1: 2022 California Building Code (CBC) Seismic Design Parameters

Seismic Design Parameter	2022 CBC Value		Reference
MCE Mapped Spectral Acceleration (g)	S_S = 0.705	S_1 = 0.259	USGS Mapped Value
Amplification Factors (Site Class D)	F_a = 1.236	F_v = null[1](2.082)[2]	ASCE Table 11.4
Site Adjusted MCE Spectral Acceleration (g)	S_{MS} = 0.872	S_{M1} = null[1](0.539)[2]	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.581	S_{D1} = null[1] (0.359)[2]	ASCE Equations 11.4.1-4
Geometric Mean PGA (g)	PGA_M = 0.397		Section 11.8.3, ASCE 7-16
Site Short Period – T_s (seconds)	T_s = 0.619		$T_s = S_{D1}/ S_{DS}$
Site Long Period – T_L (seconds)	T_L = 12		USGS Mapped Value

Notes: [1] Requires site-specific ground motion procedure or exception as per ASCE 7-16 Section 11.4.8.

[2] Values from ASCE 7-16 supplement shall only be used to calculate T_s. Values provided based on use of exception, as provided in Section 11.4.8.2 to Site-Specific Ground Motion Procedures and assumes the value of the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. 12.8-3 for $T_L \geq T > 1.5T_s$ or Eq. 12.8-4 for $T > T_L$. The 1.5 increase has not been applied to the values presented.

As shown above, the short period design spectral response acceleration coefficient, S_{DS}, is greater than 0.5, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. The long period design spectral response acceleration coefficient, S_{D1}, is greater than 0.2, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. In accordance with the 2022 CBC, each structure shall be assigned to the more severe seismic design category in accordance with Table 1613.2.5(1) or 1613.2.5(2), irrespective of the fundamental period of vibration of the structure.

4.4 Slope Stability

Based upon the provided plan sheet dated March 28, 2024, the maximum height and gradient of the slopes of the proposed BIDA beds were assumed to be two (2) feet and three percent (3%), respectively.

Due to the relatively flat slope of the beds, general slope stability analysis was performed using Janbu indicated slopes have a factor of safety greater than 1.5. Based upon the provided plan sheet dated February 27, 2024, the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed beds provided that the recommendations presented in the references report are incorporated into the project design and construction. The proposed beds may be designed/constructed with a maximum height of 2 feet above ground surface with slopes of 3 percent.

4.5 Site Preparation and Earthwork Construction

The following procedures must be implemented during site preparation for the proposed improvements. It should be noted that references to maximum dry density, optimum moisture content, and relative compaction are based on ASTM D1557 (latest test revision) laboratory test procedures.

1. Prior to any site grading, all miscellaneous surface obstructions must be removed from the improvement area. Near surface soils containing vegetation, roots, organics, compost, or other objectionable material must be stripped to a depth of at least 3-inches to expose a clean soil surface. Surface strippings must not be incorporated into engineered fill unless the organic content is less than 3 percent by weight (ASTM D2974).
2. Existing utilities or irrigation pipes must be removed to a point at least 5-feet horizontally outside the proposed improvement area. Resultant cavities must be backfilled with engineered fill. Abandoned pipelines to remain that are less than 2 inches in diameter must be capped at the cutoff point, while pipelines greater than 2 inches in diameter must be filled with a 1-sack sand-cement slurry.
3. Soil disturbed as a result of undocumented fill, debris, and abandoned underground structures must be excavated to expose undisturbed native soil.
4. Following the required stripping, and/or removal of underground structures, the exposed soil surface in proposed at-grade improvement areas including foundations or lightly loaded concrete structures must be over-excavated uniformly to a depth of 24 inches below existing site grade or 12 inches below the bottom of the proposed foundation, whichever is deeper. The over-excavation must extend at least 5 feet laterally beyond the outside edge of the proposed foundation or areas to receive fill, whichever distance is greater. The exposed subgrade must be proof-rolled under the observation of a BSK field representative to detect soft or pliant areas. Soft or pliant areas must be over-excavated to firm native soil. The exposed surface must be scarified at minimum of 8 inches, uniformly moisture conditioned to within 2 percent of optimum moisture, and compacted to 90 percent relative compaction.
5. Engineered fill in areas of at-grade structures must consist of non-expansive soil (EI < 20), moisture conditioned to at or above optimum moisture, and compacted to 90 percent relative compaction. Excavated soils, free of deleterious substances (organic matter, demolition debris,

tree roots, etc.), meeting requirements for engineering fill below, and with less than 3 percent organic content by weight, may be reused as engineered fill for the backfill.

6. Engineered fill must be placed in uniform layers not exceeding 8-inches in loose thickness, moisture-conditioned and compacted as recommended above. Acceptance of engineered fill placement must be based on both moisture content at time of compaction and relative compaction.

7. Imported fill materials must be free of deleterious substances and have less than 3 percent organic content by weight. The project specifications must require the contractor to contact BSK for review of the proposed import fill materials for conformance with these recommendations at least two weeks prior to importing to the site, whether from on-site or off-site borrow areas. Imported fill soils must be non-hazardous and be derived from a single, consistent soil type source conforming to the following criteria:

Maximum Particle Size:	3-inches
Percent Passing #4 Sieve:	65 – 100
Percent Passing #200 Sieve:	20 – 45
Plasticity Index:	less than 12
Expansion Index:	< 20
Low Corrosion Potential:	
Soluble Sulfates:	< 1,500 mg/kg
Soluble Chlorides:	< 300 mg/kg
Soil Resistivity:	> 2,000 ohm-cm

Grading operations must be scheduled as to avoid working during periods of inclement weather. Should these operations be performed during or shortly following periods of inclement weather, unstable soil conditions may result in the soils exhibiting a "pumping" condition. This condition is caused by excess moisture, in combination with compaction, resulting in saturation and near zero air voids in the soils. If this condition occurs, the affected soils must be over-excavated to the depth at which stable soils are encountered and replaced with suitable soils compacted as engineered fill. Alternatively, the Contractor may proceed with grading operations after utilizing a method to stabilize the soil subgrade, which must be subject to review by BSK prior to implementation.

4.6 Shallow, Mat, and Pole-Type Foundations

Provided the recommendations contained in this report are implemented during design and construction, it is our opinion that the proposed structures can be supported on shallow, mat, or pole-type foundations. A structural engineer must evaluate reinforcement and embedment depth based on the requirements for the structural loadings.

4.6.1 Shallow Foundations

The proposed at-grade structures may be supported on reinforced concrete spread footings bearing on engineered fill. Footing design must follow the criteria listed below:

The allowable bearing pressure applies to the dead load plus live load (DL + LL) condition. Footing design must follow the criteria listed in Table 2.

Table 2: Allowable Bearing Pressure

Footing Embedment[(1)] (inches)	Minimum Footing Width (inches)		Allowable Bearing Capacity[(2)] (psf)	
	Continuous Footing	Isolated Spread Footing	Continuous Footing	Isolated Spread Footing
12	12	24	1,100	3,000

Note: (1) – Measure with respect to the lowest adjacent subgrade surface.
(2) – The bearing pressure can be increased one-third for transient loading such as wind or seismic.

The estimated total and differential settlement for the recommended spread footings is shown below:

Table 3: Anticipated Post-Construction Settlement

Footing Type	Post-Construction Settlement (inches)	Differential Settlement (inches)	Angular Distortion
Continuous	1.0	--	0.005
Isolated	1.0	0.5	--

Isolated footing differential settlement is based on adjacent similarly loaded footings spaced at 30-feet. The settlement values given above are applicable to the maximum loading conditions. For loads, other than the design maximum loads, the settlements can be decreased proportionally.

4.6.2 Mat Foundations

The proposed miscellaneous structures may be supported on a thickened mat/slab foundation. The foundation may be designed for a maximum allowable bearing pressure of 600 psf (DL + LL), which may be increased by 1/3 for transient loading, such as wind or seismic. Estimated total settlement for mat/slabs is approximately 1.0 inch. Differential settlement across mat/slab foundations is anticipated to be on the order of about half of the total settlement over the length of the mat foundation. The weight of the concrete should be included in evaluating the contact pressure at the base of mat/slab

foundations. The weight of embedded concrete can be reduced by the unit weight of soil times the depth of embedded concrete.

Mat foundations must be a minimum of 4-inches thick and must be supported on a compacted subgrade prepared in accordance with the "Site Preparation and Earthwork Construction" section of this report. In order to regulate cracking of the slabs, construction joints and/or saw-cut control joints must be provided in each direction at a maximum spacing of 10 feet on centers along with steel reinforcement as recommended by the project's Structural Engineer. Control joints must have a minimum depth of one-quarter of the slab thickness. It is recommended that steel reinforcement used in concrete slabs-on-grade consist of steel rebar. Structural concrete slabs-on-grade may be designed using an unadjusted long-term Modulus of Subgrade Reaction (Ks) of 150 pounds per cubic inch (pci) constructed on a properly compacted subgrade or engineered fill. This value is based on the correlations to soil strength using one foot by one-foot plate-load tests and should therefore be scaled (adjusted) to the actual slab width. The adjusted Ks value can be obtained by multiplying the value provided above by $[(B+B_1)/(2B)]^2$, where B is the slab width in feet and B_1 is 1 foot (width of a one foot by one foot plate-load test apparatus).

4.6.3 Pole Type Foundations

Structures such as stadium lighting, signs, etc. may be supported on pole type foundations. This type of foundation must be designed in accordance with Section 1807.3 of the 2022 CBC. However, it is recommended that an allowable lateral soil bearing pressure of 220 psf per foot of embedment be used to develop parameters S_1 and S_3 rather than one of the values given in Table 1806.2. This value includes a factor of safety of 2 and may be increased as indicated by 1806.3 and the footnotes to Table 1806.2. Unless the area surrounding the pole, foundation is paved or covered with concrete flatwork, the upper 24 inches of soil should be ignored when calculating the minimum depth of embedment.

The following table provides expressions for the allowable and ultimate axial capacity using friction to resist axial loads. The skin friction within the upper two feet of embedded length must be ignored in unpaved areas. The total settlement of pier foundations designed in accordance with these recommendations should not exceed one-half inch.

Table 4: Friction Resistance for Vertical Loads	
Allowable (lbs)	**Ultimate (lbs)**
$50\ DL^2$	$125\ DL^2$

Note (1) – D is pile diameter (feet), and L is the total embedment length (feet).

Prior to placing concrete, loose or disturbed soils must be removed from the bottom of the drilled pier excavations using a flat bottom clean-out bucket or other pre-approved method. A representative of BSK must observe the drilling and clean-out associated with the construction of pier foundations in

order to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report.

Pier deflection may govern the design lateral resistance. If provided with pier geometry, lateral load, and loading eccentricity, the estimated pier head deflection can be provided.

4.7 Lateral Earth Pressures and Frictional Resistance

Lateral loads applied against foundations may be resisted by a combination of passive resistance against the vertical faces of the foundations and friction between the foundation bottom and the supporting subgrade. An unfactored coefficient of friction of 0.36 may be used between soil subgrade and precast foundation bottoms, or 0.73 between soil subgrade and cast-in-place foundation bottom. The unfactored passive pressure is presented in Table 5. The coefficient of friction and passive earth pressure values given above represent ultimate soil strength values. BSK recommends that a safety factor consistent with the design conditions be included in their usage. For resistance against lateral sliding that is countered solely by the passive earth pressure against footings or friction along the bottom of footings, a minimum safety factor of 1.5 is recommended. For stability against lateral sliding that is resisted by combined passive pressure and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral resistance against seismic loading conditions, a minimum safety factor of 1.2 is recommended. We based these lateral resistance values on the assumption that the concrete for the foundations is either placed directly against undisturbed soils or that the voids created from the use of forms are backfilled with engineered fill or other approved materials, such as lean concrete. Passive resistance in the upper foot of soil cover below finished grades should be neglected unless the ground surface is confined by concrete slabs, pavements, or other such positive protection.

The following earth pressure parameters may be used for designing earth-retaining structures and foundations.

Table 5: Lateral Earth Pressures

Lateral Pressure Conditions	Equivalent Fluid Pressure (pcf)
Active Pressure	35
At-Rest Pressure	55
Passive Pressure	435

Parameters are shown in the above table for drained conditions of select engineered fill or prepared native soil. In addition, the drained condition assumes that positive drainage will be provided away from the structure improvements and that water does not accumulate around the structure and cause a build-up of hydrostatic pressure.

4.8 Excavation Stability

Soils encountered within the upper 10 feet are generally Type C soil in accordance with OSHA (Occupational Safety and Health Administration). The slopes surrounding or along temporary excavations must be no steeper than 2.5H:1V to a maximum depth of 10 feet. As stated above, relatively cohesionless soils were encountered within the test borings, as such, it may be necessary to lay back slopes flatter to facilitate construction. Temporary excavations for the project construction must be left open for as short a time as possible, must be protected from water runoff, and must be scheduled as to avoid working during periods of inclement weather (e.g., rain). No equipment should be operated within 8 feet of the top of the slope. Slope height, slope inclination, and excavation depths (including utility trench excavations) must in no case exceed those specified in local, state, or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations 29 CFR Part 1926, or successor regulations). These excavation recommendations are based on soil characteristics derived from the borings. Variations in soil conditions will likely be encountered during excavation. At the time of construction, BSK must be afforded the opportunity to observe and document sloping and shoring conditions, and the opportunity to provide review of actual field conditions to account for condition variations not otherwise anticipated in the preparation of these recommendations.

4.9 Utility Trench Excavation and Backfill

Pipes and conduits must be bedded and shaded in accordance with the requirements of the pipe manufacturer. Where no specific requirements exist, we recommend a minimum of 6-inches of sand bedding material for pipe installations 12 to 24-inches in diameter. For pipe diameters smaller than 12-inches, the bedding thickness may be reduced to 4-inches. For HDPE pipe installations/construction, sand bedding is not required, and the on-site soil can be used as backfill. The bedding material and envelope (up to 6-inches above the pipe) must consist of sand (Sand Equivalent greater than 30), be placed in loose lifts not exceeding 8-inches in thickness, compacted to at least 90 percent of the maximum dry density, and moisture conditioned to within 2 percent of optimum moisture content. Water jetting to attain compaction must not be allowed.

Adequate excavation width must be provided to permit uniform compaction on both sides of utility lines installed within the trench. The trench backfill material may consist of engineered fill. Trench backfill outside the containment area must be placed in loose lifts not to exceed 8-inches in loose thickness, compacted to 90 percent of the maximum dry density, and moisture conditioned to 2 percent above optimum moisture content. Conduits extending through or below footings must be “sleeved” as determined by the Project Structural Engineer

4.10 Surface Drainage Control

Final grading around site improvements must provide for positive and enduring drainage. Ponding of water must not be allowed on or near the proposed structures. Saturation of the soils immediately

adjacent to or below structures must not be allowed. Although landscaping is not anticipated, irrigation water must be applied in amounts not exceeding those required to offset evaporation, sustain plant life, and maintain a relatively uniform moisture profile around and below site improvements. Fill elevations are anticipated to be less than 3 feet above natural grade to achieve positive site drainage.

5 PLANS AND SPECIFICATIONS REVIEW

BSK recommends that it be retained to review the draft plans and specifications for the project, with regard to foundations and earthwork, prior to there being finalized and issued for construction bidding.

6 CONSTRUCTION TESTING AND OBSERVATIONS

Geotechnical testing and observation during construction is a vital extension of this geotechnical investigation. BSK recommends that it be retained for those services. Field review during site preparation and grading allows for evaluation of the exposed soil conditions and confirmation or revision of the assumptions and extrapolations made in formulating the design parameters and recommendations. BSK's observations must be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. BSK must also be called to the site to observe foundation excavations, prior to placement of reinforcing steel or concrete, in order to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report. BSK must also be called to the site to observe placement of foundation and slab concrete.

If a firm other than BSK is retained for these services during construction, that firm must notify the owner, project designers, governmental building officials, and BSK that the firm has assumed the responsibility for all phases (i.e., both design and construction) of the project within the purview of the geotechnical engineer. Notification must indicate that the firm has reviewed this report and any subsequent addenda, and that it either agrees with BSK's conclusions and recommendations or that it will provide independent recommendations.

7 LIMITATIONS

The analyses and recommendations submitted in this report are based upon the data obtained from the test borings performed at the locations shown on Figure 2. The report does not reflect variations, which may occur between or beyond the borings. The nature and extent of such variations may not become evident until additional exploration and testing is performed, or construction is initiated. If variations then appear, a re-evaluation of the recommendations of this report will be necessary after performing on-site observations during the excavation period and noting the characteristics of the variations.

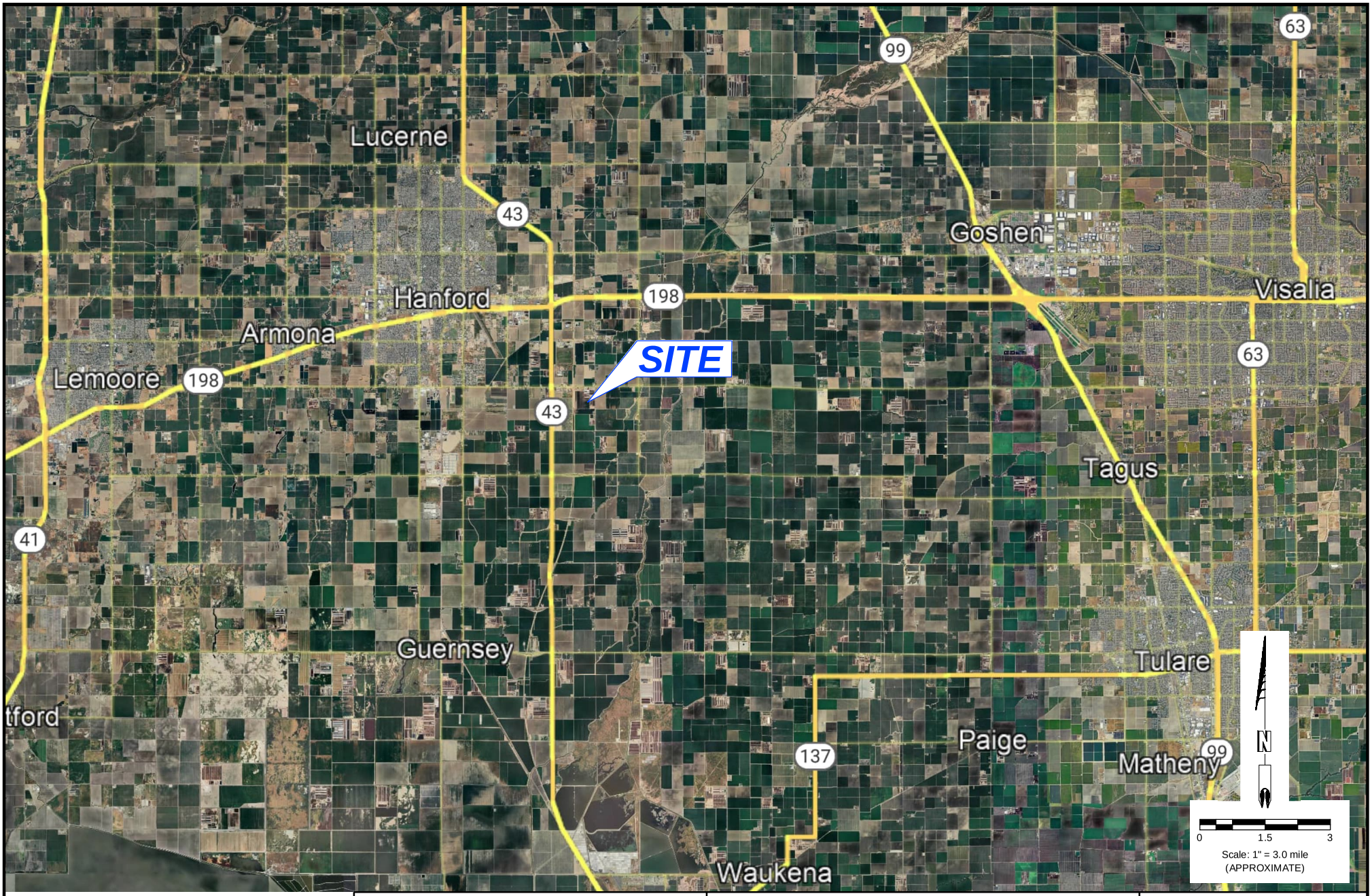
The validity of the recommendations contained in this report is also dependent upon an adequate testing and observation program during the construction phase. BSK assumes no responsibility for

construction compliance with the design concepts or recommendations unless it has been retained to perform the testing and observation services during construction as described above.

The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the work of man, on this property or adjacent property. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation, governmental policy, or the broadening of knowledge.

BSK has prepared this report for the exclusive use of the Client and members of the project design team. The report has been prepared in accordance with generally accepted geotechnical engineering practices, which existed in Kings County at the time the report was written. No other warranties, either express or implied, are made as to the professional advice provided under the terms of BSK's agreement with Client and included in this report.

FIGURES



C:\Users\tgonzalez\BSK Associates\BSK Documents - GEO\G24000678-Sozinho #5 Dairy - BIDA System\Graphics\G24000678.dwg User:tgonzalez Plotted:Jun 06, 2024 - 2:30pm Last Save:May 28, 2024 - 1:48pm

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
691 N. Laverne Avenue #101
Fresno, California 93727
Tel. (559) 497-2880

SITE VICINITY MAP

Sozinho #5 Dairy - BIDA System
12252 7th Avenue
Hanford, California

FIGURE 1

JOB NO. G24-000-678
DATE June 6, 2024
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

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LEGEND:

B-3 APPROXIMATE BORING LOCATIONS

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
691 N. Laverne Avenue #101
Fresno, California 93727
Tel. (559) 497-2880

BORING LOCATION MAP

Sozinho #5 Dairy - BIDA System
12252 7th Avenue
Hanford, California

FIGURE 2

JOB NO. G24-000-678
DATE June 6, 2024
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

APPENDIX A

FIELD EXPLORATION

APPENDIX A
Field Exploration

The field exploration, conducted on May 31, 2024, consisted of a site reconnaissance and drilling three (3) exploratory test borings. The borings were drilled to depths of approximately 21.5 feet below ground surface (bgs) within the proposed improvement locations. The test borings were drilled with a truck-mounted drill rig, equipped with 8-inch augers. The approximate boring locations are presented on Figure 2.

The soil materials encountered in the test borings were visually classified in the field, and logs were recorded during the excavation and sampling operations. Visual classification of the materials encountered in the test borings were made in general accordance with the Unified Soil Classification System (ASTM D2487). A soil classification chart is presented herein. Boring logs are presented herein and should be consulted for more details concerning subsurface conditions.

Subsurface samples were obtained at the various depths shown on the boring logs by driving samplers which consisted of a 2.5-inch inside diameter (I.D.) lined with stainless sleeves and 1.4-inch I.D. Standard Penetration Test (SPT) sampler. The samplers were driven 18 inches using a 140-pound, automatic hammer dropping 30 inches. The number of blows required to drive the last 12 inches was recorded as the blow count (blows/foot) on the log of borings. The relatively undisturbed soil core samples were capped at both ends to preserve the samples at their natural moisture content. Disturbed soil samples were obtained using the Split-Spoon Sampler (marked X in logs) and were placed and sealed in polyethylene bags. At the completion of the field exploration, the test borings were backfilled with the soil cuttings, as set forth in BSK's proposal.

It should be noted that the use of terms such as "soft", "medium stiff", "very stiff," or "hard" to describe the consistency of a soil is based on sampler blow count and is not necessarily reflective of the in-place density or unit weight of the soils being sampled. The relationship between sampler blow count and consistency is provided in Figure A-2.

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM	SILTY SANDS, POOORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

■	Modified California (2.5" ID)	RV	R-Value
⊠	Standard Penetration Test (SPT)	SA	Sieve Analysis
☒	Split Spoon	SW	Swell Test
◪	Pushed Shelby Tube	TC	Cyclic Triaxial
▯	Auger Cuttings	TX	Unconsolidated Undrained Triaxial
✋	Grab Sample	TV	Torvane Shear
⊘	Sample Attempt with No Recovery	UC	Unconfined Compression
CA	Chemical Analysis	(1.2)	(Shear Strength, ksf)
CN	Consolidation	WA	Wash Analysis
CP	Compaction	(20)	(with % Passing No. 200 Sieve)
DS	Direct Shear	▽	Water Level at Time of Drilling
PM	Permeability	▼	Water Level after Drilling(with date measured)
PP	Pocket Penetrometer		

BSK®

SOIL DESCRIPTION KEY

FIGURE

A-1

SOIL DESCRIPTION KEY

MOISTURE CONTENT

DESCRIPTION	ABBR	FIELD TEST
Dry	D	Absence of moisture, dusty, dry to the touch
Moist	M	Damp but no visible water
Wet	W	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4 in. thick, note thickness
Laminated	Alternating layers of varying material or color with the layer less than 1/4 in. thick, note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

PLASTICITY

DESCRIPTION	ABBR	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm) thread cannot be rolled at any water content.
Low (L)	LP	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	MP	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit
High (H)	HP	It takes considerable time rolling and kneeding to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit

CONSISTENCY - FINE-GRAINED SOIL

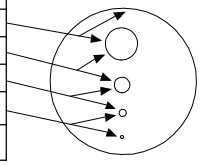
CONSISTENCY	ABBR	FIELD TEST
Very Soft	VS	Thumb will penetrate soil more than 1 in. (25 mm)
Soft	S	Thumb will penetrate soil about 1 in. (25 mm)
Firm	F	Thumb will indent soil about 1/4 in. (6 mm)
Hard	H	Thumb wil not indent soil but readily indented with thumbnail
Very Hard	VH	Thumbnail will not indent soil

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12"	>12"	Larger than basketball-sized
Cobbles		3 - 12'	3 - 12"	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3"	3/4 -3"	Thumb-sized to fist-sized
	fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19"	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock salt-sized
	fine	#200 - #10	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029	Flour-sized and smaller

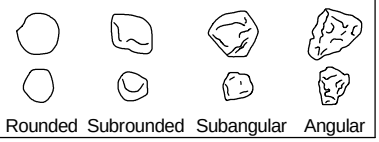
REACTION WITH HCL

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately



ANGULARITY

DESCRIPTION	ABBR	CRITERIA
Angular	A	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	SA	Particles are similar to angular description but have rounded edges
Subrounded	SR	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	R	Particles have smoothly curved sides and no edges



APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	ABBR	SPT (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
Very Loose	VL	<4	<4	<5	0 - 15	Easily penetrated with 1/2-inch reinforcing rod by hand
Loose	L	4 - 10	5 - 12	5 - 15	15 - 35	Difficult to penetrate with 1/2-inch reinforcing rod pushed by hand
Medium Dense	MD	10 - 30	12- 35	15 - 40	35 - 65	Easily penetrated a foot with 1/2-inch reinforcing rod driven with 5-lb. hammer
Dense	D	30 - 50	35 - 60	40 - 70	65 - 85	Difficult to penetrate a foot with 1/2-inch reinforcing rod driven with 5-lb. hammer
Very Dense	VD	>50	>60	>70	85 - 100	Penetrated only a few inches with 1/2-inch reinforcing rod driven with 5-lb. hammer

APPENDIX B

LABORATORY TESTING

BSK Associates
691 N. Laverne Avenue, #101
Fresno, CA 93727
Telephone: 559-497-2880

Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 1**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–10								SM	**Silty SAND (SM)** - yellowish brown, moist, fine to coarse grained sand	
3			16	102.9	9.6	45			... medium dense	
6			11						... loose	
10–11			17	118.5	12.4			CL	**Sandy CLAY (CL)** - hard, grayish brown, moist, fine to coarse grained sand	Pocket Penetrometer = 4.25
16			11							
21			15	91.7	30.4				... olive gray	Pocket Penetrometer = 3.25, very stiff
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

BSK Associates
691 N. Laverne Avenue, #101
Fresno, CA 93727
Telephone: 559-497-2880

Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 2**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–2								SP	**Poorly Graded SAND (SP)** - medium dense, olive, moist, fine to coarse grained sand, trace clay	
3			18	102.9	5.7	2				
4–5										
6			14	88.3	4.7				... olive gray, no trace clay	
7–9										
10								SP-SM	**Poorly Graded SAND with Silt (SP-SM)** - medium dense, light brown, dry, fine to coarse grained sand, subrounded	
11			14	86.0	1.6					
12–14										
15								CL	**Sandy CLAY (CL)** - very stiff, brown, moist, fine to coarse grained sand	
16			24	121.8	8.8					Pocket Penetrometer = 3.00
17–19										
20								SP-SM	**Poorly Graded SAND with Silt (SP-SM)** - medium dense, brown, moist, fine to coarse grained sand, subrounded	
21			21							
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

BSK Associates
691 N. Laverne Avenue, #101
Fresno, CA 93727
Telephone: 559-497-2880

Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–5			15	104.7	8.0	28		SC	**Clayey SAND (SC)** - yellowish brown, moist, fine to coarse grained sand, trace silt ... medium dense	
5–10			11	101.1	5.8			SM	**Silty SAND (SM)** - loose, olive brown, moist, fine to coarse grained sand, trace clay	
10–15			13	115.4	11.0			CL	**CLAY (CL)** - very stiff, brown, moist, trace silt	Pocket Penetrometer = 2.00
15–20			12					SM	**Silty SAND (SM)** - medium dense, light brownish, moist, fine to coarse grained sand	
20–21			33	96.4	25.4			CL	**CLAY (CL)** - hard, grayish brown, moist, fine grained sand	Pocket Penetrometer = 4.50
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

APPENDIX B
Laboratory Testing

The results of laboratory testing performed in conjunction with this project are contained in this Appendix. The following laboratory tests were performed on soil samples in general conformance with applicable standards.

In-Situ Moisture and Density

The field moisture content and in-place dry density determinations were performed on relatively undisturbed samples obtained from the test borings. The field moisture content, as a percentage of dry weight of the soils, was determined by weighing the samples before and after oven drying in accordance with ASTM D2216 test procedures. Dry densities, in pounds per cubic foot, were also determined for undisturbed core samples in accordance with ASTM D2937 test procedures. Test results are presented on the boring logs in Appendix A.

Gradation

Three (3) #200 Wash Tests were performed on selected soil samples obtained at the time of drilling in the area of planned construction. The tests were performed to determine the amount of fine material present in the subsurface material. The tests were performed in general accordance with ASTM Test Method D1140. The test results are presented in the boring logs in Appendix A.

Direct Shear Test

One (1) direct shear test was performed on test specimens trimmed from a selected soil sample. The three-point shear test was performed in general accordance with ASTM D3080, Direct Shear Test for Soils under Consolidated Drained Conditions. The test specimens, each 2.42 inches in diameter and 1 inch in height, were subjected to shear along a plane at mid-height after allowing for pore pressure dissipation. The results of the test are presented in Figure B-1.

Collapse Potential Test

Two (2) Collapse Potential tests were performed on relatively undisturbed soil samples to evaluate collapse potential characteristics. The tests were performed in general accordance with ASTM D5333. The samples were initially loaded under as-received moisture content to a selected stress level, loaded to a maximum load of 2000 psf, and then saturated. The test results are presented on Figures B-2 and B-3.

Soil Corrosivity

The results of chemical analyses performed on one (1) bulk soil sample using California Test Method 643 (for pH and minimum resistivity) and California Test Methods 417 and 422 (for soluble sulfate and chlorides, respectively), are presented below.

SUMMARY OF CHEMICAL TEST RESULTS

Sample Location	pH	Sulfate (mg/kg)	Chloride (mg/kg)	Minimum Resistivity (ohms-cm)
B-3 at 0-5´	7.7	22	32	24,640

Direct Shear Test

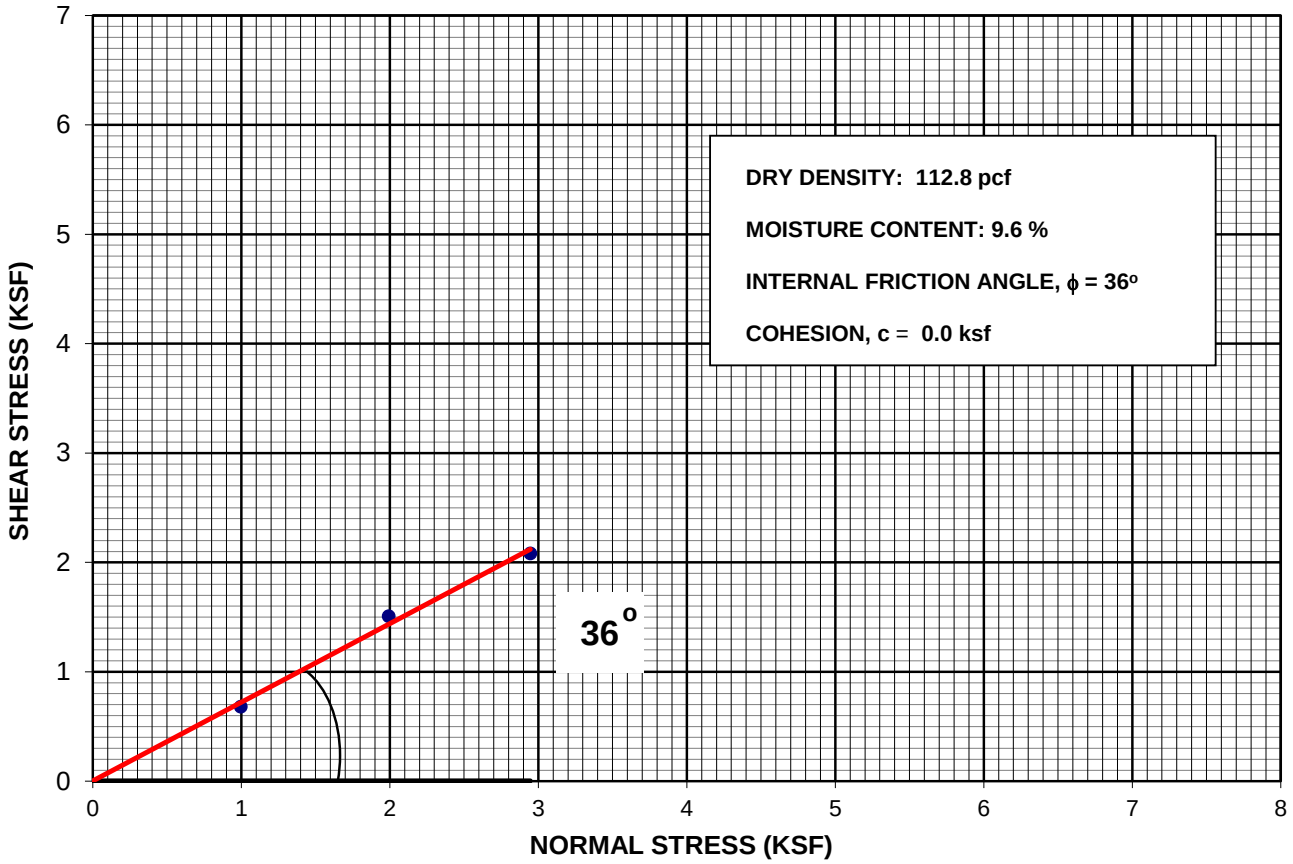
ASTM D-3080

FIGURE B-1

691 N Laverne Ave,
Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

Project Name:	Sozinho No. 5 Dairy BIDA System	**Sampled By:**	A. Bravo	**Sample Date:**	5/31/2024
		Tested By:	D. Messfin	**Test Date:**	6/10/2024
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/10/2024
Sample Location:	B-1 @ 3'	**Sample Description:**	Silty Sand (SM) - medium dense, yellowish brown, moist, fine to coarse grained sand		

SHEAR STRENGTH DIAGRAM

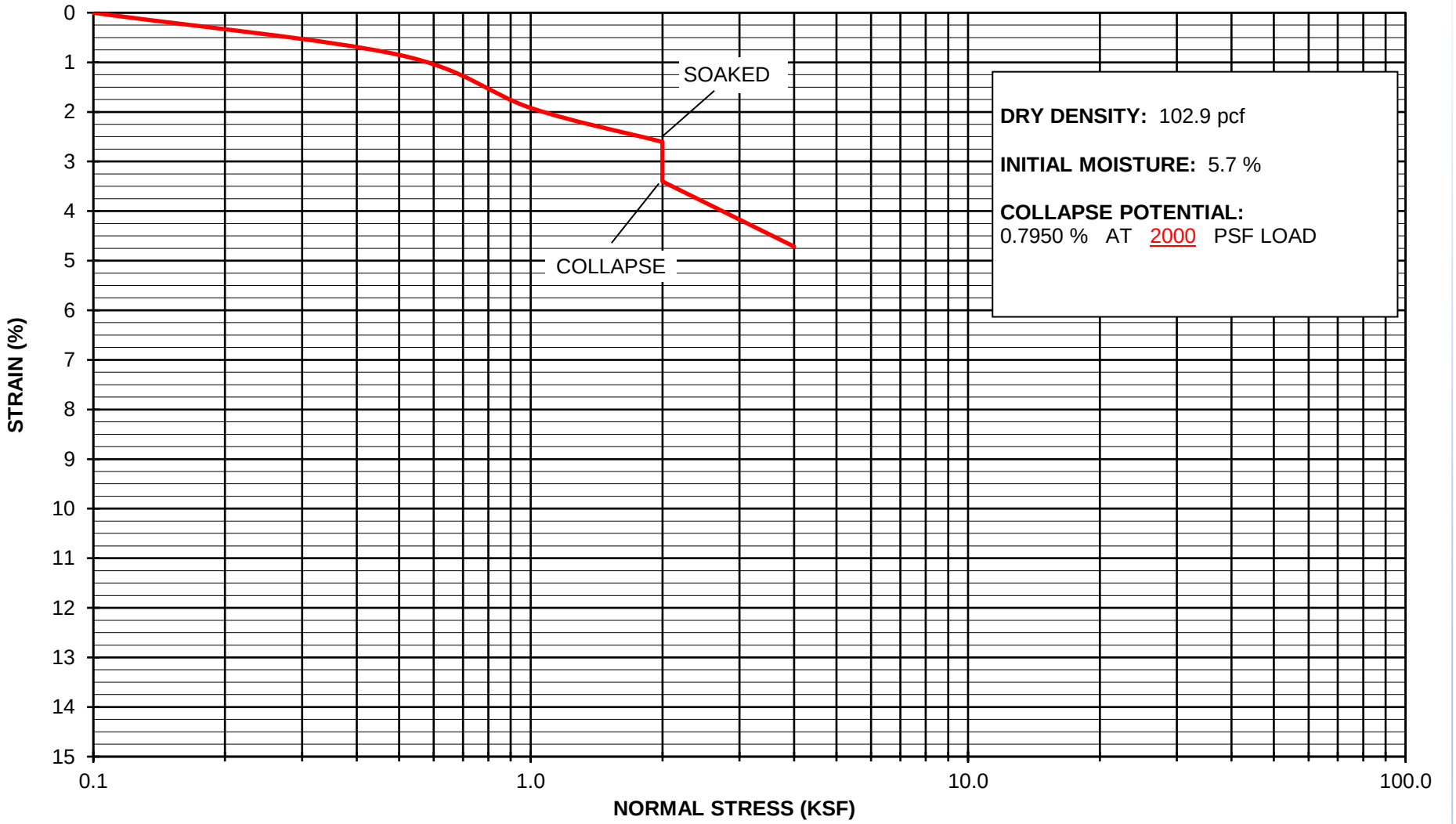


BSK ASSOCIATES
691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

COLLAPSE POTENTIAL
ASTM D-5333

FIGURE B-2

Project Name:	Sozinho No. 5 - BIDA System	**Sampled By:**	A.Bravo	**Sample Date:**	5/31/24
		Tested By:	D.Messfin	**Test Date:**	6/11/24
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/13/24
Sample Location:	B - 2 @ 3'	**Sample Description:**	Poorly Graded Sand (SP) - medium dense, olive, moist, fine to coarse grained sand, trace clay		

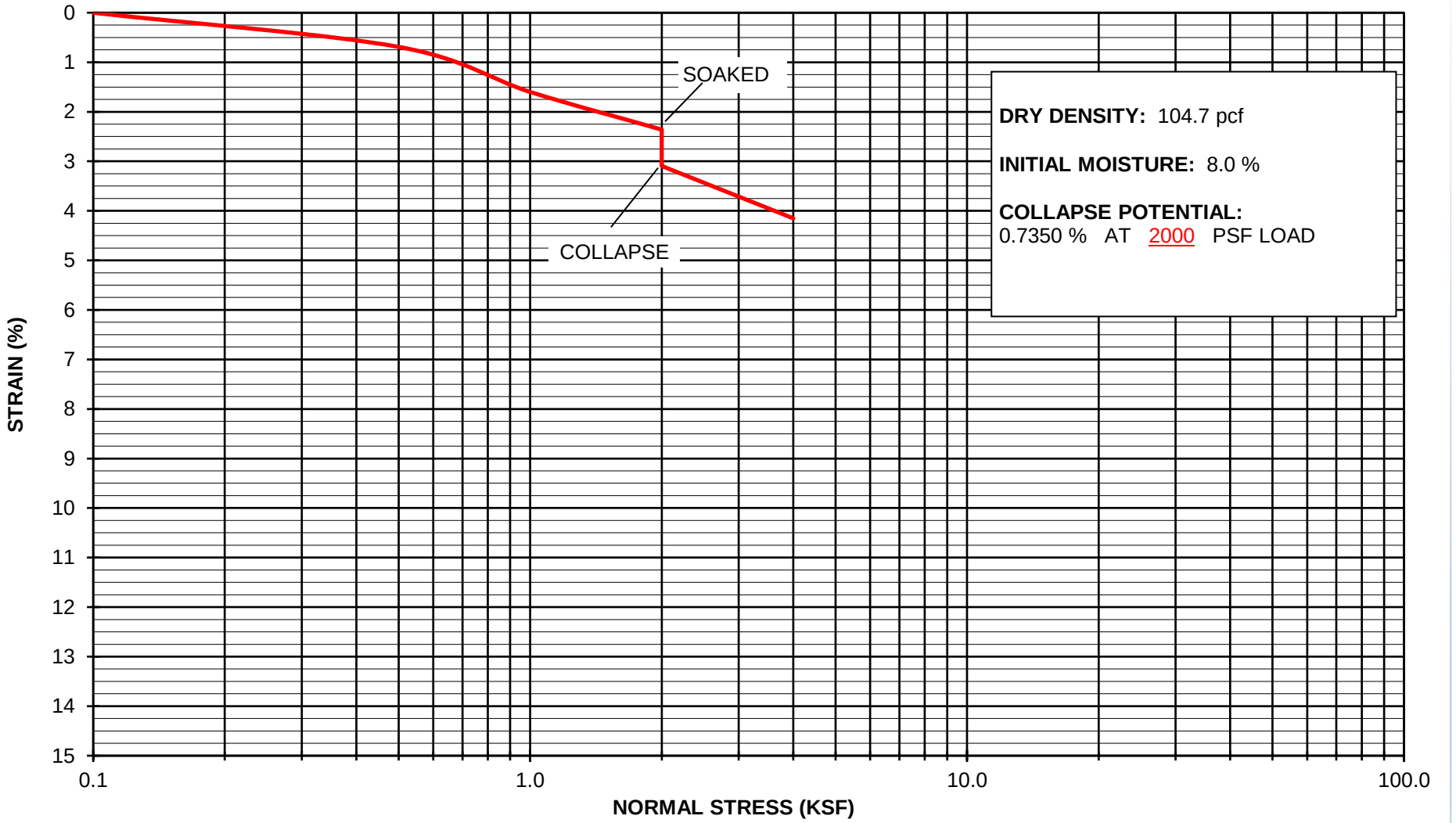


BSK ASSOCIATES
691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

COLLAPSE POTENTIAL
ASTM D-5333

FIGURE B-3

Project Name:	Sozinho No. 5 Dairy - BIDA System	**Sampled By:**	A.Bravo	**Sample Date:**	5/31/24
		Tested By:	D.Messfin	**Test Date:**	6/10/24
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/12/24
Sample Location:	B - 3 @ 3'	**Sample Description:**	Silty Sand (SM) - medium dense, yellowish brown, moist, fine to coarse grained sand, trace silt		



Appendix H

Fugitive Dust Emissions Control Plan



4CREEKS

DCP

Dust Control Plan

Sozinho Dairy #5 – BioFiltro Project

San Joaquin Valley Air Pollution Control District
Regulation VIII – Fugitive PM10 Prohibitions

Construction Notification

Pursuant to section 6.4 of **District Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator of a construction project of at least 1.0 acre in size shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities. Use the first two pages of this form to submit a written Construction Notification. There are no fees for filing a construction notification.

Larger construction projects, as outlined below, may be required to submit a full Dust Control Plan. If a Dust Control Plan is required the owner/operator does not need to submit a separate construction notification.

Dust Control Plan

Pursuant to section 6.3 of **Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator shall submit a Dust Control Plan to the District for a construction project that will involve any of the following:

- Residential developments that will include ten acres or more of disturbed surface area, or
- Non-residential developments that will include five acres or more of disturbed surface area, or
- Will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days of the project.

A Dust Control Plan identifies the fugitive dust sources at the construction site and describes all of the dust control measures to be implemented before, during, and after any dust generating activity for the duration of the project. The District will review and approve, conditionally approve, or disapprove the Dust Control Plan within 30 days of submittal. **Construction activities shall not commence until the Dust Control Plan has been approved or conditionally approved by the District.** A copy of the approved Dust Control Plan must be retained at the project site and made available upon request by a District inspector.

At least one key individual representing the owner or operator, or any person who prepares a Dust Control Plan must complete a Dust Control Training Course presented by the District. Please contact the District to find out when courses are being offered.

Pursuant to **District Rule 3135 – *Dust Control Plan Fee***, payment must accompany each Dust Control Plan submitted to the District. A separate fee is charged for any major modification made to an approved plan, such as modifying the size and scope of the project or making significant changes to the types of control or preventative measures. No fees are charged for administrative changes to an approved plan.

Regardless of whether a Construction Notification or Dust Control Plan is required, the owner or operator of any construction project shall comply with all other applicable requirements of Regulation VIII, and other District Rules.

Construction Notifications and Dust Control Plans should be submitted to the District's Compliance Division at:

San Joaquin, Stanislaus, Merced Counties	*Madera, Fresno, Kings Counties*	*Tulare, Kern Counties*
Northern Region Office 4800 Enterprise Way Modesto, CA 95356 (209)557-6400 Fax: (209)557-6475	**Central Region Office** 1990 East Gettysburg Avenue Fresno, CA 93726 (559)230-5950 Fax: (559) 230-6062	**Southern Region Office** 34946 Flyover Court Bakersfield, CA 93308 (661) 392-5500 Fax: (661) 392-5585

Section 1 – General Information – Page 1

☐ **Construction Notification** (Complete section 1) ☒ **Dust Control Plan** (Complete sections 1-7)	Date Received: *(For District Use)*

1-A Project Name and Location

Project Name: Sozinho Dairy #5

Project Address: 12252 7th Avenue

Major X-Streets: Houston Avenue & 7th Avenue

City: Hanford County: 93230

GPS Coordinate(s): 36°17'46.14"N & 119°35'03.99"W

Expected Construction Start Date: August 1, 2024 End Date: February 28, 2025

1-B Project Details

This project is: ☐ Residential ☒ Non-Residential (commercial, industrial, institutional, public, etc.)

Total project site area: 15.24 Acres

Total disturbed surface area: 15.24 Acres

Total disturbed areas that will be left inactive for more than seven days: 0.00 Acres

Maximum daily volume of earthmoving: 3,500 Cubic Yards

Average daily volume of earthmoving: 2,500 Cubic Yards

1-C Provide a brief description of the project's operations.

Project will include excavation, grading, concrete work, pipelaying, and all necessary subtrades for the construction of a manure separator.

1-D Indirect Source Review (ISR) (Rule 9510)

Final Land Use Approval: ☐ Discretionary ☐ Ministerial

☐ Approval is Pending ☐ Approval was granted on: _____

Air Impact Assessment (AIA) application submitted? ☐ No ☐ Yes Date: _____

ISR Project ID: _____ Type of space: _____ Project square ft: _____

☒ Exempt from ISR. Explain: Wastewater processing upgrades.

☐ I would like additional information about opportunities to reduce water usage on the project site.

Section 1 – General Information – Page 2

Project Name: Sozinho Dairy #5

1-E Contacts

Property Owner:	Joe Sozinho				
Address:	12252 7th Avenue				
City:	Hanford	State:	CA	Zip:	93230
Phone:	559-381-3920	Fax:			
Mobile:		Email:			

Developer:	BioFiltro, Inc.				
Address:	1949 5th Street, Suite 101				
City:	Davis	State:	CA	Zip:	95616
Contact Person:	Rafael Concha				
Phone:	530-746-1770	Fax:			
Mobile:		Email:	rconcha@biofiltro.com		

General Contractor:	4CG Construction				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Contact Person:	Alec Grassel				
Phone:	559-372-0215	Fax:			
Mobile:	559-786-3694	Email:	alecg@4cgconstruction.com		

Other Contact:	Tyler Esteves, EIT				
Company:	4Creeks, Inc.				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Phone:	509-802-3052	Fax:			
Mobile:	559-805-3306	Email:			

STOP HERE FOR CONSTRUCTION NOTIFICATION ONLY

Section 2 – Dust Control Plan Implementation – Page 1

Project Name: Sozinho Dairy #5

2-A This Dust Control Plan was prepared by:

Name: Josh Thomas Title: Environmental QSD/QSP

Company Name: 4Creeks Engineering

Address: 324 S. Santa Fe St. Suite A

City: Visalia State: CA Zip: 93292

Phone: 559-802-3052 Fax:

Mobile: 661-343-3611 Email: josht@4-creeks.com

Date training completed: May 7, 2024 ☒ Copy of course certificate attached.

2-B Contractors

Provide the names, addresses, and phone numbers of the contractors involved in dust generating activities **or** performing dust control as part of this project (Rule 8021 Sec. 6.3.6.1). A supplemental list may be attached.

1. 4CG Construction, 324 S. Santa Fe St. Suite B, Visalia, CA 93292
   Alec Grassel, 559-786-3694, alec@4cgconstruction.com
2.
3.
4.

2-C Who will have the primary responsibility for implementing this Dust Control Plan?

(Rule 8021 Sec 6.3.6.1)

☐ Property Owner ☐ Developer ☒ General / Prime Contractor

☐ Sub-Contractor(s) ☐ Other:

Primary Project Contact: Alec Grassel

Title: Construction Manager

Company Name: 4CG Construction

Address: 324 S. Santa Fe St. Suite B

City: Visalia State: CA Zip: 93292

On-Site Phone: 559-372-0215 Fax:

Mobile: 559-786-3694 Email: alecg@4cgconstruction.com

Date training completed: ☐ Attach a copy of the course certificate

San Joaquin Valley
Air Pollution Control District
Compliance Division

Presents this
Certificate of Completion
to

Josh Thomas

On May 7, 2024, at Fresno, California for

Regulation VIII — Dust Control Training

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Signature

5/7/2024
Date

Section 2 – Dust Control Plan Implementation – Page 2

Project Name: Sozinho Dairy #5

2-D Dust Generating Activity Dates

The expected start and completion dates of **dust generating activities and soil disturbance activities** to be performed on site. For phased projects, it may be necessary to report expected start and completion dates separately. (Rule 8021 Sec. 6.3.6.4)

Expected start date:	August 1, 2024	Completion Date:	February 28, 2025
Phase Project Start – A:		Completion – A:	
Phase Project Start – B:		Completion – B:	
Phase Project Start – C:		Completion – C:	

2-E Other Locations

Identify whether any other locations should be included with this plan that are involved with this project. An example may include listing any site where bulk materials will be imported from or exported to. This does not need to include quarries or retailers of building materials. (Rule 8021 Sec. 6.3.2)

☒ No other locations are included with this project.

Location 1:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 2:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 3:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Section 3 – Fugitive PM10 Sources – Page 1

Project Name: Sozinho Dairy #5

3-A Sources of Fugitive Dust

This section describes the minimum requirements for limiting visible dust emissions from activities that cause fugitive dust emissions. (Rule 8021 Sec. 6.3.6.5) **Check at least one box under each category**.

Structural Demolition. (Rule 8021 Sec. 5.1, 6.3.3, & 6.3.6.5)

- ☒ No demolitions are planned for this project.
- ☐ Asbestos NESHAP notification and fees will be submitted to the District. (Rule 3050 and Rule 4002)
  Water will be applied to the following areas for the duration of the demolition activities:
  - Building exterior surfaces;
  - Unpaved surface areas where equipment will operate;
  - Razed building materials; and
  - Water or dust suppressants will be applied to unpaved surface areas within 100 feet of structure during demolition.

Pre-Activity (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-C).
- ☒ The site will be pre-watered and work will be phased to reduce the amount of disturbed surface area at any one time (Complete Section 4-A).

Active Operations (Rule 8021 Sec. 5.2)

- ☒ Water will be applied to dry areas during leveling, grading, trenching, and earthmoving activities (Complete Section 4-A).
- ☐ Wind barriers will be constructed and maintained, and water or dust suppressants will be applied to the disturbed surface areas (Complete Sections 4-A or 4-B, and 4-C).

Inactive Operations, Including After Work Hours, Weekends, and Holidays (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C).
- ☐ Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust. (Complete Section 4-A or 4-B, and 4-C)

Temporary stabilization of areas that remain unused for seven or more days (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C)
- ☐ Vehicular access will be restricted and water or dust suppressants will be applied and maintained at all un-vegetated areas (Complete Section 4-A or 4-B, and 4-C).
- ☐ Vegetation will be established on all previously disturbed areas (Complete Section 4-C).
- ☐ Gravel will be applied and maintained at all previously disturbed areas (Complete Section 4-C).
- ☐ Previously disturbed areas will be paved (Complete Section 4-C).

Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas (Rule 8021 Sec. 5.2 and 5.3)

- ☐ Not applicable for this project (Please explain why in Section 3-C)
- ☒ Apply water or dust suppressants to unpaved haul and access roads (Complete Section 4-A or 4-B)
- ☐ Post speed limit signs of not more than 15 miles per hour at each entrance, and again every 500 feet. (Complete Section 4-C)
- ☐ Water or dust suppressants will be applied to vehicle traffic and equipment storage areas (Complete Section 4-A or 4-B).

Wind Events (Rule 8021 Sec. 5.4)

- ☒ Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so. Outdoor construction activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.

Section 3 – Fugitive PM10 Sources – Page 2

Project Name: Sozinho Dairy #5

3-B Bulk Materials (Rule 8021 Sec. 6.3.6.6 and Rule 8031)

Outdoor Handling of Bulk Materials (Rule 8031 Sec. 5.0 A)

- ☐ No bulk materials will be handled during this project.
- ☒ Water or dust suppressants will be applied when handling bulk materials.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.

Outdoor Storage of Bulk Materials (Rule 8031 Sec. 5.0 B)

- ☐ No bulk materials will be stored during this project.
- ☒ Water or dust suppressants will be applied to storage piles.
- ☐ Storage piles will be covered with tarps, plastic, or other suitable material and anchored in such a manner that prevents the cover from being removed by wind action.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles, and water or dust suppressants will be applied.
- ☐ A three-sided structure (< 50% porosity) will be used that is at least as high as the storage piles.

On-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 C)

- ☐ No bulk materials will be transported on the project site.
- ☐ Vehicle speed will be limited on the work site.
- ☒ All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.
- ☒ A sufficient amount of water will be applied to the top of the load to limit visible dust emissions.
- ☐ Haul trucks will be covered with a tarp or other suitable cover.

Off-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 D)

- ☒ No bulk materials will be transported to or from the project site.
- ☐ Measures in section 5-B will be implemented to prevent haul trucks from becoming a source of visible emissions or carryout onto public roads. (complete Section 5-B)

Outdoor Transport using a Chute or Conveyor (Rule 8031 Sec. 5.0 E)

- ☒ No chutes or conveyors will be used.
- ☐ Chute or conveyor will be fully enclosed.
- ☐ Water spray equipment will be used to sufficiently wet the materials.
- ☐ Transported materials will be washed or screened to remove fines (PM10 or smaller).

3-C Comments

The Dairy is currently implementing its own set of Dust Control regulations, watering the site as needed, and is active 7 days a week.

Section 4 – Dust Control Methods – Page 1

Project Name: Sozinho Dairy #5

4-A Water Application

Complete this section if water application will be used as a control method for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies to this project.
(Rule 8021 Sec. 6.3.6.6)

Water Application Equipment:

☐ Sprinklers: Describe the activities that will utilize sprinklers:

Minimum treated area: _____ ☐ Square Feet ☐ Acres

Maximum treated area: _____ ☐ Square Feet ☐ Acres

Minimum water flow rate: _____ Gallons/minute Duration: _____

☒ Water Truck, ☐ Water Trailer, ☐ Water Wagon, ☐ Other: _____

Describe the activities that will utilize this equipment:

Grading and excavation

Number of application equipment available: 1

Application equipment capacity: 2,500

Application frequency (on a typical dry day): Minimum 2 times a day

Application rate: ☒ 650 gallons per acre ☐ _____ gallons per acre (Greater than 650)

Hours of operation: 6AM to 4PM ☐ Daily ☒ Mon-Fri ☐ Other: _____

Water application equipment is available to operate after normal working hours, on weekends, and holidays.

After-hours contact: Alec Grassel Phone No.: 559-786-3694

After-hours contact: Rafael Concha Phone No.: 530-746-1770

Water Supply: *Include the relative locations of these sources on the plot plan in Section 6.*

☐ Fire hydrants Number of hydrants available On-Site: _____ Off-Site: _____

☐ Storage tanks Number and capacity: _____

☒ Wells Number and flow rate: 7

☐ Canal, River, Pond, Lake, etc. Describe: _____

☐ Other: _____

Approval granted by the owner or public agency to use their water source for this project.

Owner or Agency: Owner

Contact: Joe Sozinho Phone No.: 559-381-3920

Section 4 – Dust Control Methods – Page 2

Project Name: Sozinho Dairy #5

4-B Dust Suppressant Products

Complete this section if a dust suppressant product will be used. These materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous materials (road oils). (Rule 8021 Sec. 6.3.6.6)

Copy this page if more than one dust suppressant product will be used.

☒ **Not Applicable.** No dust suppressant products will be used. **Skip to 4-C.**

Application Area: _____

Product Name: _____

Contractor's Name: _____ Phone No: _____

Application Rate: _____ Gallons of undiluted material per ☐ mile or ☐ acre treated.

Application Frequency: _____ Applications per ☐ week, ☐ month, ☐ year

Application Equipment: _____

Number of Application Equipment Available: _____

Application Equipment Capacity: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☐ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☐ Manufacturer's Usage Instructions (method, frequency, and intensity of application)
- ☐ Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

Section 4 – Dust Control Methods – Page 3

Project Name: Sozinho Dairy #5

4-C Other Dust Control Methods

Check below the other types of dust control methods that will be employed at the construction site.
(Rule 8021 Sec. 5.2)

☒ Restricting unauthorized vehicle access:

☐ Fences ☐ Gates ☐ Posts ☐ Berms ☐ Concrete Barriers ☐ Signs

☒ Other: "Authorized Vehicles Only" sign to be placed at main entrance

☐ Wind barriers Describe: _____

☐ Posted speed limit signs that meet State and Federal Department of Transportation standards.
(Rule 8021 Sec. 5.3)

☐ Posted at 15 miles per hour ☐ Posted at _____ miles per hour (less than 15 MPH)

☐ Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.

Explain: _____

☐ Apply and maintain gravel:

☐ On haul roads ☐ On access roads ☐ At equipment storage yards

☐ At vehicle traffic areas ☐ For temporarily stabilizing previously disturbed areas.

Explain: _____

☐ Apply pavement:

Explain: _____

☒ Other: See attached

4-D Contingencies

Contingencies to be implemented should the listed control measures fail to meet the stability and visible emission requirements. Examples include, but are not limited to: replacement equipment, additional equipment, increased water application, additional water resources, adding chemical/organic dust suppressants, restricting access, and additional staffing. Attach any additional information if needed.
(Rule 4102 and Rule 8021 Sec. 5.2)

See attached

4-E Record Keeping (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained, but only for those days when a control measure is implemented. The District has developed record keeping forms that may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the forms developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

4-C Other Dust Control Methods

The project site is set back on the dairy (private property), so there are existing measures to restrict access. Also, the site will be graded and excavated in phases as construction occurs to avoid having disturbed soil left exposed.

4-D Contingencies

Contractor will provide additional water trucks at their corporation yard, in case of breakdwon of primary water truck. If additional water trucks are unavailable at that time, then General Contractor will rent an additional water truck from a local equipment rental company. Additionally, if omissions from the construction site cannot be controlled by the Contractor all work on-site will cease until the Contractor is able to implement additional mitigation measures.

Section 5 – Carryout and Trackout – Page 1

Project Name: Sozinho Dairy #5

5-A Treatments for Preventing Trackout

Select the control devices that will be used for preventing trackout from occurring onto paved public roads. Trackout is any material that adheres to vehicle tires and is deposited onto a paved public road or the paved shoulder of a paved public road. Check one or a combination that will apply to this project.

☐ **Grizzly:** Rails, pipes, or grates used to dislodge debris off of vehicles before exiting the site. Extends from the intersection with the paved public road surface for the full width of the unpaved exit surface for a distance of at least 25 feet. (Rule 8041 Sec. 5.9.1)

Width: _____ Feet Length: _____ Feet

☒ **Gravel Pad:** A layer of washed gravel at least one (1) inch or larger in diameter, three (3) inches deep, and extends from the intersection with the public paved road surface for the full width of the unpaved exit surface for a distance of at least 50 feet. (Rule 8041 Sec. 5.9.2)

Width: **20** Feet Length: **50** Feet Depth: **3** Inches

Gravel Size: **1** Inches Clean-up Frequency: **as needed**

☐ **Paved Surface:** Extends from the intersection with the paved public road surface for the full width of the unpaved access road for at least 100 feet to allow mud and dirt to drop off of vehicles before exiting the site. (Rule 8041 Sec. 5.9.3)

Width: _____ Feet Length: _____ Feet

Mud and dirt deposits accumulating on paved interior roads used for trackout control will be removed with sufficient frequency, but not less frequently than once per workday. Cleanup will commence within ½ hour of generating any carryout and trackout onto public roads. (Rule 8041 Sec. 5.8.2 and 5.9.3)

Clean-up Frequency: _____

☐ **Wheel Washer:** Uses water to dislodge debris from tires and vehicle undercarriage. (Rule 8011 Sec. 3.73)

Describe: _____

☐ **Other:** (Rule 8041 Sec. 5.8.1.2) _____

5-B Treatments for Preventing Carryout

Report the required treatments that will be used for preventing carryout from occurring on paved public roads. Carryout occurs when materials from emptied or loaded haul trucks, vehicles, or trailers falls onto a paved public road or paved shoulder of a paved public road. (Rule 8031 Sec 5.0)

☒ No haul trucks will be routinely entering or leaving the project site.

☐ Spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates will be prevented when material is transported onto any paved public access road.

Emptied Haul Trucks:

- ☐ Interior cargo compartments will be cleaned before leaving the project site.
- ☐ Cargo compartment will be covered with a tarp or suitable cover before leaving the project site.

Loaded Haul Trucks:

- ☐ Haul trucks will be loaded such that the freeboard is not less than six inches with water applied to the top of the load before leaving the project site.
- ☐ Cargo compartment and load will be covered with a tarp or suitable cover before leaving the project site.

☐ **Other:** _____

Section 5 – Carryout and Trackout – Page 2

Project Name: Sozinho Dairy #5

5-C Cleaning up Carryout and Trackout

Check and report below the methods and frequency for cleaning up carryout and trackout from the surface and paved shoulders of paved public roads.

The use of blower devices, or dry rotary brushers or brooms, for removal of carryout and trackout from paved public roads is prohibited. (Rule 8041 Sec. 5.0)

Projects subject to a dust control plan are required to prevent and mitigate carryout and trackout beyond the minimum cleanup requirements. (Rule 8041 Sec. 5.3)

Cleanup Frequency:

☒ In the event the control device becomes insufficient to prevent carryout and trackout, removal of any carryout and trackout must be accomplished within one-half hour of the generation of such carryout and trackout. (Rule 8041 Sec. 5.8.2.)

Cleanup Method: Check the method below that will be used for cleaning carryout and trackout.

☒ Manually sweeping and picking up. (Rule 8041 Sec. 5.7.1)

☐ Mechanical sweeping with a rotary brush or broom accompanied or preceded by water. (Rule 8041 Sec. 5.7.2)

Describe the types of equipment that will used: _____

☐ Operating a PM10-efficient street sweeper. (Rule 8041 Sec. 5.7.3)

Make and Model: _____

☒ Flushing with water: allowed if: (Rule 8041 Sec. 5.7.4)

- No curbs or gutters are present.
- Using water will not result as a source of trackout and carryout.
- Using water will not result in adverse impacts on storm water drainage systems.
- Using water will not violate any National Pollutant Discharge Elimination System permit program.

5-D Record keeping for Cleanup of Carryout and Trackout (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained. The District has developed a record keeping form specific for cleaning carryout and trackout from paved public roads and may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the form developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

Section 6 – Plot Plan

Project Name: Sozinho Dairy #5

6-A Plot Plan

A plot plan identifies the type and location of each project. Attach appropriately sized maps with the project boundaries outlined or use the space in section 6-B to draw a plot plan. Attached maps may include tract maps, site maps, and topographic maps. Use the checklist below to make sure all areas have been identified on the plot plan. (Rule 8021 Sec. 6.3.6.2 & 6.3.6.5)

Identify the relative locations of actual and potential sources of fugitive dust emissions.

- ☒ Bulk material handling and storage areas.
- ☒ Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards.
- ☒ Exit points where carryout and trackout onto paved public roads may occur.
- ☒ Water supply locations if water application will be used for controlling visible dust emissions.

Identify the relative locations of sensitive receptors within ¼ mile of the project. (Rule 4102 Sec. 4.1)

- ☐ No sensitive receptors within ¼ mile of the project.
- ☒ Residential areas, schools, day care, churches, hospitals, nursing facilities, commercial, retail, etc.
- ☒ Freeways, roads, or traffic areas that may be affected by the dust generating activities.
- ☐ Other: _____

6-B Draw Plot Plan (if one is not attached)

May use the back of this form
Include a North Arrow

☒ Plot plan is attached (Skip to Section 7).

Section 7 – Certification

Project Name: Sozinho Dairy #5

7-A Certification

The owner, principle operator, or the individual implementing must certify the plan. (Rule 8021 Sec 6.3). For Title V sources, the responsible official must provide the certification. (Rule 2520 Sec. 3.28 and 10.0).

I certify that all information contained herein and information submitted in the attachments to this documents are true and correct.

Alec Grassel	**Project Manager**
Print Name	Title
Digitally signed by Alec Grassel DN: C=US, E=alecg@4cgconstruction.com, O=4Creeks, OU=Build, CN=Alec Grassel Date: 2024.06.13 16:03:35-07'00'	
Signature	Date

559-372-0215		**559-786-3694**
Phone Number	Fax Number	Cell Number

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Regulation VIII Record Keeping Forms

This matrix lists the suggested forms that may be used for Regulation VIII record keeping. The left column lists potentially applicable rules. The next column lists major industry groups affected by the various rules of Regulation VIII. The letters A, B, C, and D refer to the record keeping forms developed by the SJVUAPCD.

		Activity at site and corresponding record keeping forms					
Regulation VIII Rule Number	Type of Business or Commercial Activity	Bulk Materials	Unpaved Roads	Equip. & Vehicle Storage	Open Areas	Earth Moving	Trackout and Carryout
8021 8031 8041 8051 8061 8071	Construction	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8021 8031 8041 8051 8061 8071	Oilfields	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8081	Off-field Agricultural Operations	**A C**	**A C D**	**A C D**			
8031 8041 8551 8061	Agricultural Product Processing	**A C**	**A C D**	**A C D**			**B**
8031 8041 8071	Bulk Materials	**A C**	**A C D**	**A C D**			**B**
8041 8061 8071	Equipment and Vehicle Storage	**A C**	**A C D**	**A C D**	**A C**		**B**
8041 8051 8071	Truck Stops	**A C**	**A C D**	**A C D**	**A C**		**B**

Form A = Area Water Application
Form B = Sweeping/cleanup
Form C = Permanent control measure such as paving, gravel, a grizzly, chemical/organic dust suppressants
Form D = Water Application onto Unpaved Roads and Traffic Areas

(Rev. 06.01.09)

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 ♦ FAX (209) 557-6475

Central Region (Main Office)
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 ♦ FAX (559) 230-6062

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 ♦ FAX (661) 392-5585

www.valleyair.org

Regulation VIII Record Keeping Form

Month:

FORM A – Area Water Application

Project Location: 12252 7th Avenue City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM B – For Cleanup of Trackout and Carryout

Project Location: 12252 7th Avenue City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Sweeping / Cleanup Schedule

Use this form to document the cleanup schedule by entering the time of day cleanup is done.
Mornings =am; Afternoon = pm. Write "end of day" if cleanup is done at the end of the workday. In urban areas, preventing or cleaning-up trackout at construction sites is required immediately if it extends 50 feet or more. Record keeping is required for construction sites subject to Rule 8021, sites that store bulk materials subject to Rule 8031 and vehicle/equipment storage areas subject to Rule 8071.

Week		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	am							
	pm							
2		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
3		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
4		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
5		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM C: For Permanent / Long Term Dust Controls

Project Location: 12252 7th Avenuee City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Permanent Activities

Describe the types of permanent dust controls implemented, the date, the activity, such as applying an organic dust suppressant, gravel, paving or a trackout control device. Add comments such as the amount used, where used, brand name.

Date	Dust Control Activity Performed (Gravel, paving)	Comments: Type of material, application rate.

Comments:

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.

Regulation VIII Record Keeping Form

Month:

FORM D: Water Application onto Unpaved Roads & Equipment Areas

Project Location: 12252 7th Avenue Hanford, CA 93230 Size: 15.24 Miles or Acres (circle one)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

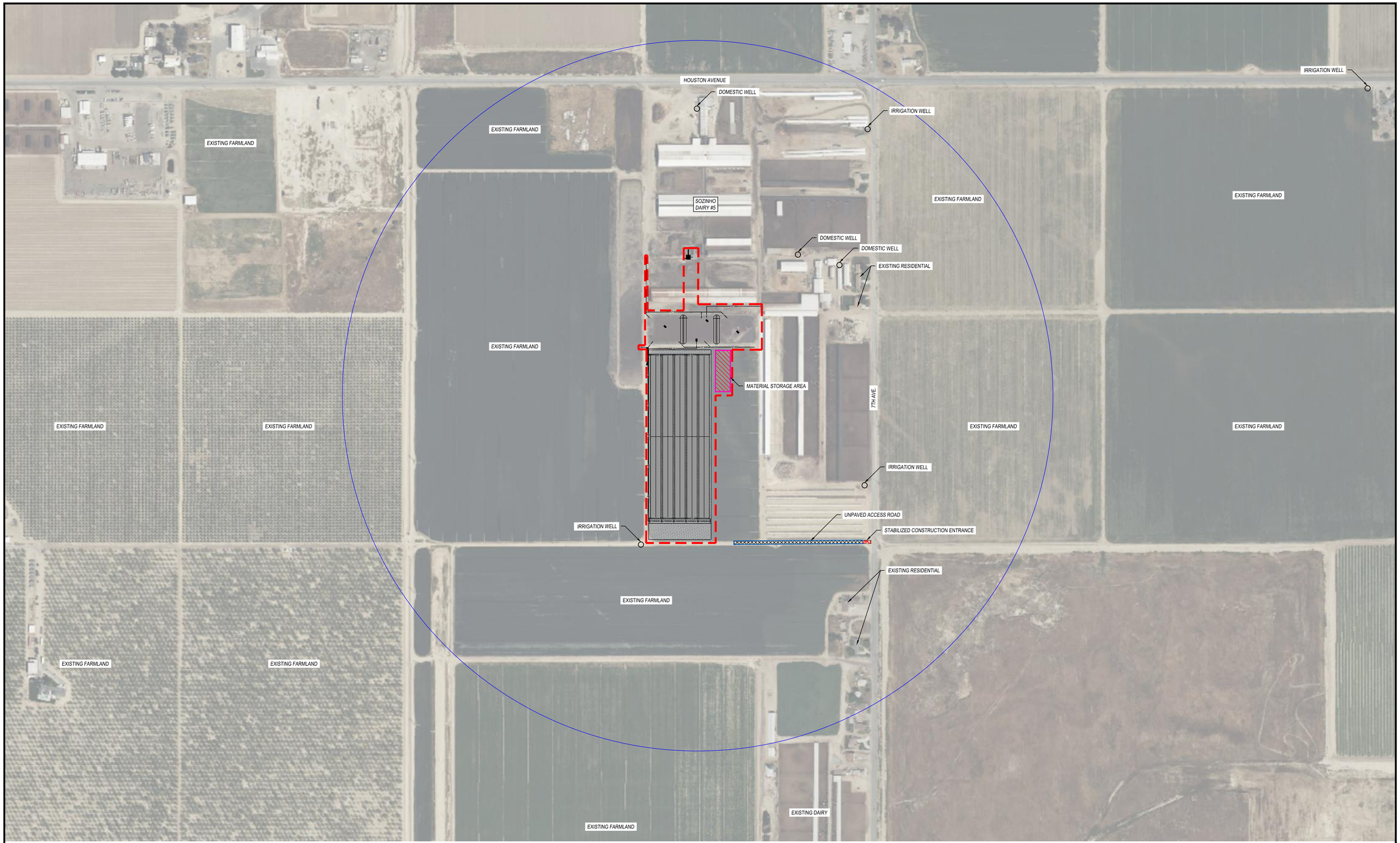
Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Use this form to document daily water applications at the same or different areas. Use additional forms, as necessary.

Date	Time	Area Treated	Distance, Area, or Gallons Applied

Comments:

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.



LEGEND

CONSTRUCTION BMPS:

BMPs SHOWN ON MAP

- LIMITS OF SURFACE DISTURBANCE = 15.24 ACRES
- ¼ MILE RADIUS
- WATER SOURCE
- ACCESS/HAUL ROAD
- MATERIAL STORAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE

BMPs NOT SHOWN ON MAP

VEHICLE AND EQUIPMENT FUELING (NS-9)
VEHICLE AND EQUIPMENT MAINTENANCE (NS-10)
CONCRETE FINISHING (NS-13)
SPILL PREVENTION AND CONTROL (WM-4)

811 Know what's **below.** **Call** before you dig.

NORTH

REVISIONS

DATE	BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3275
www.4-creeks.com
CHK BY: TE
DRW BY: AF

IMPROVEMENT PLANS FOR:
SOZINHO DAIRY #5
17232 7th Avenue
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING DUST CONTROL PLAN

PLOT DATE:	Jun 11, 2024
JOB NO.:	240504
FILE NAME:	240504 - DCP EXHIBIT
SCALE:	1" = 250'
SHEET NO.:	1 OF 1

Appendix I

Occurrence Report

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Laton (3611946) OR Burris Park (3611945) OR Traver (3611944) OR Hanford (3611936) OR Remnoy (3611935) OR Goshen (3611934) OR Guernsey (3611926) OR Waukena (3611925) OR Paige (3611924))

Map Index Number: 44980
EO Index: 44980
Key Quad: Burris Park (3611945)
Element Code: AAAAA01181
Occurrence Number: 431
Occurrence Last Updated: 2009-06-18

Scientific Name: *Ambystoma californiense pop. 1*
Common Name: California tiger salamander - central California DPS

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3T3
State: S3

General Habitat:

LIVES IN VACANT OR MAMMAL-OCCUPIED BURROWS THROUGHOUT MOST OF THE YEAR; IN GRASSLAND, SAVANNA, OR OPEN WOODLAND HABITATS.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, AND VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 1999-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-03-01
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, 1.3 MILES SOUTH OF SETTLERS DITCH, NW OF VSALIA.

Detailed Location:

Ecological:

1999: NON-NTIVE ANNUAL GRASSLAND W/VERNAL POOLS; GRASSLAND TO S & E, FARMLAND TO N & W. SCAPHIOPUS HAMMONDI, BRANCHINETA LYNCHI, LEPIDURUS PACKARDI, & ATHENE CUNICULARIA FOUND IN VICINITY. 2007 AERIAL PHOTO SHOWS AREAS TO S & E ARE NOW AG.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND.

General:

SEVERAL EGG MASSES OBSERVED ON 1 MAR 1999.

PLSS: T18S, R23E, Sec. 08, W (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4028791 E274936
Latitude/Longitude: 36.37793 / -119.50895
Elevation (feet): 260

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HAL99F0009 HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR AMBYSTOMA (TIGRINUM) CALIFORNIENSE 1999-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	46426	**EO Index:**	46426
Key Quad:	Burris Park (3611945)	**Element Code:**	AAAAA01181
Occurrence Number:	503	**Occurrence Last Updated:**	2017-11-15

Scientific Name: *Ambystoma californiense pop. 1*

Common Name: California tiger salamander - central California DPS

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3T3

State: S3

General Habitat:

LIVES IN VACANT OR MAMMAL-OCCUPIED BURROWS THROUGHOUT MOST OF THE YEAR; IN GRASSLAND, SAVANNA, OR OPEN WOODLAND HABITATS.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, AND VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	XXXX-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	XXXX-XX-XX	**Occurrence Rank:**	None
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Extirpated		

Location:

LOCATION GIVEN ONLY AS KINGS RIVER BELOW KINGSBURG IN KINGS COUNTY.

Detailed Location:

Ecological:

Threats:

General:

FOUND SOMETIME BEFORE 1925. JENNINGS CONSIDERS THIS SITE EXTIRPATED.

PLSS:	T17S, R22E, Sec. 11 (M)	**Accuracy:**	1 mile	**Area (acres):**	0
UTM:	Zone-11 N4039456 E271818	**Latitude/Longitude:**	36.47325 / -119.54682	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Kings	Burris Park (3611945)

Sources:

JEN01U0001	JENNINGS, M. (RANA RESOURCES) - LOCALITY RECORDS FOR AMBYSTOMA CALIFORNIENSE IN CALIFORNIA, 1992, JENNINGS & HAYES SPECIAL CONCERN HERP DATABASE WITH LOCATIONS MARKED AS PRESENT OR EXTIRPATED 2001-11-07
JEN94U0001	JENNINGS, M. & M. HAYES - TABLE OF DATA FOR TIGER SALAMANDER USED IN THE REPORT "REPTILE AND AMPHIBIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA" 1994-XX-XX
STO25A0001	STORER, T. (MUSEUM OF VERTEBRATE ZOOLOGY) - A SYNOPSIS OF THE AMPHIBIA OF CALIFORNIA. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN ZOOLOGY 27: 1-342. 1925-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44979
EO Index: 44979
Key Quad: Burris Park (3611945)
Element Code: AAABF02020
Occurrence Number: 195
Occurrence Last Updated: 2017-10-06

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, ABOUT 1 MILE SOUTH OF SETTLERS DITCH, NW OF VISALIA.

Detailed Location:

2016: DETECTED IN POOL 25 AT (36.38055, -119.50874). MAPPED TO INCLUDE GIVEN DETECTION LOCATIONS.

Ecological:

NON-NATIVE ANNUAL GRASSLAND W/ VERNAL POOLS (MAINLY ALKALINE POOLS); GRASSLAND TO THE S & E, FARMLAND TO THE N & W. AREA IS GRAZED. AMBYSTOMA CALIFORNIENSE, BRANCHINETA LYNCHI, LEPIDURUS PACKARDI, & ATHENE CUNICULARIA FOUND IN THE VICINITY.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (1999).

General:

MANY TADPOLES OBSERVED IN 3 SEPARATE POOLS ON 1 MAR 1999. PAIR IN AMPLEXUS OBSERVED ON 6 MAR 2016. TADPOLES FOUND IN 10 POOLS THROUGHOUT PROPERTY IN 2017; 1 MAPPED HERE.

PLSS: T18S, R23E, Sec. 8, W (M)
Accuracy: specific area
Area (acres): 37
UTM: Zone-11 N4029177 E274977
Latitude/Longitude: 36.38141 / -119.50862
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HAL99F0008	HALSTEAD, J. & P. HALSTEAD - FIELD SURVEY FORM FOR SPEA HAMMONDII 1999-03-01
HEL16F0006	HELM, B. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	55262	**EO Index:**	55262
Key Quad:	Goshen (3611934)	**Element Code:**	AAABF02020
Occurrence Number:	288	**Occurrence Last Updated:**	2020-02-20

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2004-04-22	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2004-04-22	**Occurrence Rank:**	Good
Owner/Manager:	PVT-JACUZZI PROPERTY	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.3 MILE NNW OF THE INTERSECTION OF ROAD J32 AND ROAD J19, ESE OF GOSHEN.

Detailed Location:

Ecological:

HABITAT CONSISTS OF VERNAL POOLS, WITH TYPICAL VERNAL POOL PLANTS, SURROUNDED BY NON-NATIVE ANNUAL GRASSLAND DOMINATED BY TARWEED, WILD RYE, RIP-GUT BROME, FIDDLENECK, AND STINGING NETTLE. OVERALL TOPOGRAPHY FLAT.

Threats:

THREATENED BY FUTURE DEVELOPMENT.

General:

12 JUVENILES OBSERVED ON 19 APR 2004. ADULT SPADEFOOT REMAINS FOUND AT NEARBY BURROWING OWL BURROWS BETWEEN 19 AND 22 APR 2004.

PLSS:	T18S, R24E, Sec. 20, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4025020 E285001	**Latitude/Longitude:**	36.34626 / -119.39580	**Elevation (feet):**	290

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

CLA04F0003	CLARK, H. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2004-04-19
CLA08A0001	CLARK, H, - NATURAL HISTORY NOTES: SPEA HAMMONDII (WESTERN SPADEFOOT). PREDATION AND USE AS BURROW DECORATIONS. HERPETOLOGICAL REVIEW 39(1):80-81. 2008-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86230	**EO Index:**	87272
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	428	**Occurrence Last Updated:**	2012-06-29

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2011-05-16	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-16	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST EAST OF HWY 99 ON THE NORTH SIDE OF CROSS CREEK, ABOUT 3 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 1, 3, 4, 10, AND 11. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS:	T17S, R23E, Sec. 35, NW (M)	**Accuracy:**	non-specific area	**Area (acres):**	83
UTM:	Zone-11 N4032576 E279833	**Latitude/Longitude:**	36.41315 / -119.45547	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86232
EO Index: 87274
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 429
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST EAST OF HWY 99 ON EITHER SIDE OF CROSS CREEK, ABOUT 3.7 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 6, 7, AND 8. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, SW (M)
Accuracy: non-specific area
Area (acres): 31
UTM: Zone-11 N4031856 E279790
Latitude/Longitude: 36.40665 / -119.45575
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86233
EO Index: 87275
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 430
Occurrence Last Updated: 2012-07-02

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST EAST OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, ABOUT 4 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #51. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, S (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4031646 E280508
Latitude/Longitude: 36.40493 / -119.44769
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86234
EO Index: 87276
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 431
Occurrence Last Updated: 2012-07-09

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1 MILE EAST OF HWY 99 ON THE NORTH SIDE OF CROSS CREEK, AND ABOUT 3.75 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 22 AND 23. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, NE (M)
Accuracy: non-specific area
Area (acres): 24
UTM: Zone-11 N4032513 E281022
Latitude/Longitude: 36.41285 / -119.44221
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86235
EO Index: 87277
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 432
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1 MILE EAST OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, AND ABOUT 4 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #34. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 36, NW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4032017 E281465
Latitude/Longitude: 36.40849 / -119.43713
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86236
EO Index: 87278
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 433
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 2.25 MILES UPSTREAM (NE) OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, AND ABOUT 4.4 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #41. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE & BUTEO SWAINSONI NEARBY.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R24E, Sec. 30, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4033309 E282985
Latitude/Longitude: 36.42047 / -119.42055
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86237
EO Index: 87279
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 434
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 3 MILES UPSTREAM (NE) OF HWY 99 ALONG CROSS CREEK, AND ABOUT 4.6 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 48 & 55. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R24E, Sec. 30, NE (M)
Accuracy: non-specific area
Area (acres): 37
UTM: Zone-11 N4034140 E283825
Latitude/Longitude: 36.42814 / -119.41143
Elevation (feet): 280

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86238	**EO Index:**	87280
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	435	**Occurrence Last Updated:**	2019-03-18

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2018-04-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2018-04-09	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 4 MILES UPSTREAM (NE) OF HWY 99 ALONG CROSS CREEK (COTTONWOOD CREEK), AND ABOUT 5.2 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). REFERENCE VERNAL POOLS A & F ON ADJACENT LAND NEXT TO 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THIS SITE ALSO APPEARS TO HAVE BEEN DISKED (JUN 2011 AERIAL). LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS BETWEEN THIS REFERENCE SITE AND THE NEIGHBORING 1090 ACRE SITE IN 2011. 14 JUVENILES OBSERVED ON 15 APR 2017. EGGS AND LARVAE OBSERVED IN 4 POOLS ON 27 MAR & 9 APR 2018.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	92
UTM:	Zone-11 N4034751 E284751	**Latitude/Longitude:**	36.43386 / -119.40128	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

ALV17D0001	ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20
HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX
OBR18F0008	O'BRIEN, S. (HELM BIOLOGICAL CONSULTING) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2018-04-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A6746
EO Index: 108515
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 472
Occurrence Last Updated: 2019-03-14

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF CROSS CREEK ABOUT 1.6 MI NW OF HWY 99 AT AVE 328 & 1.2-1.5 MI SSE OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

16 LARVAE DETECTED ON 30 JAN 2017. LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 3 MAPPED HERE.

PLSS: T17S, R23E, Sec. 34, S (M)
Accuracy: specific area
Area (acres): 23
UTM: Zone-11 N4031241 E278955
Latitude/Longitude: 36.40092 / -119.46489
Elevation (feet): 271

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

ALV17D0001 ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

OBR17F0006 O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6747	**EO Index:**	108517
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	473	**Occurrence Last Updated:**	2017-10-12

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NW SIDE OF CROSS CREEK, ABOUT 1.6 MILES NW OF HWY 99 AT AVE 328 & 1.9 MI SSE OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 3, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030271 E278276	**Latitude/Longitude:**	36.39203 / -119.47218	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6749	**EO Index:**	108518
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	474	**Occurrence Last Updated:**	2017-10-12

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

FROM 2.0-2.4 MI NW OF HWY 99 AT AVE 328, 1.3-1.4 MI SSW OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NE (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030926 E277801	**Latitude/Longitude:**	36.39782 / -119.47766	**Elevation (feet):**	269

County Summary:	**Quad Summary:**
Kings, Tulare	Traver (3611944)

Sources:

HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6750	**EO Index:**	108519
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	475	**Occurrence Last Updated:**	2019-02-21

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST N OF CROSS CREEK, FROM 2.5-2.6 MI NW OF HWY 99 AT AVE 328, 1.7 MI SW OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP AND COORDINATES.

Ecological:

ANNUAL GRASSLANDS WITH VERNAL POOLS. CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

APPROXIMATELY 81 LARVAE DETECTED ON 30 JAN 2017. LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030870 E276767	**Latitude/Longitude:**	36.39708 / -119.48916	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

ALV17D0001	ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	22682	**EO Index:**	8315
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	439	**Occurrence Last Updated:**	2012-10-24

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1994-06-13	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1994-06-13	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

CAMERON CREEK, E OF ROAD 20, ABOUT 1 MILE WSW OF WAUKENA.

Detailed Location:

DFG SWHA #TU004. 1991 NEST TREE WAS ON THE NORTH BANK OF THE CREEK NEAR AN IRRIGATION STORAGE RESERVOIR.

Ecological:

1991 NEST TREE WAS A LARGE EUCALYPTUS. SURROUNDING LAND USES INCLUDED ROW CROPS AND DAIRIES.

Threats:

General:

A PAIR OF BIRDS NESTED AT THIS SITE IN 1991. 2 ADULTS OBS, 2 YOUNG FLEDGED FROM THIS SITE 13 JUN 1994.

PLSS:	T21S, R23E, Sec. 06, NE (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4001801 E272656	**Latitude/Longitude:**	36.13430 / -119.52650	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX
HAN91F0001	HANSEN, R. & G. PRESLEY - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1991-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 22037
EO Index: 8313
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 440
Occurrence Last Updated: 1999-12-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1990-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1990-XX-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

EAST SIDE OF HWY 137, 0.6 MILE NORTH OF PAIGE ROAD, 3 MILES NE OF WAUKENA.

Detailed Location:

NEST TREE IS LOCATED JUST NORTH OF THE DRIVEWAY TO THE SOUSA DAIRY. SWHA'S OBSERVED (INCLUDING ONE DEAD ADULT) SOUTH OF THIS NEST SITE IN 1999, BUT NO NESTING WAS OBSERVED.

Ecological:

NEST TREE IS ONE OF TWO EUCALYPTUS TREES JUST EAST OF THE ROADWAY; SURROUNDING HABITAT CONSISTS ALMOST ENTIRELY OF ROW CROPS AND DAIRIES.

Threats:

General:

BIRDS NESTED HERE ANNUALLY FROM 1982-1990; NESTING SUCCESS UNKNOWN.

PLSS: T20S, R23E, Sec. 16, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4007834 E275868
Latitude/Longitude: 36.18939 / -119.49256
Elevation (feet): 240

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

HAN90F0001 HANSEN, R. & G. PRESLEY - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1990-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42284
EO Index: 42284
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 792
Occurrence Last Updated: 2000-01-27

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1994-06-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-06-27
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

0.5 MILE WEST OF COUNTY ROAD 60 (BUENA VISTA AVENUE) AND SOUTH OF PAIGE ROAD, 5 MILES SW OF TULARE.

Detailed Location:

NEST TREE IS LOCATED BEHIND SOME RANCH BUILDINGS.

Ecological:

NEST TREE IS A LARGE EUCALYPTUS.

Threats:

General:

DFG SWHA #TU006. 2 ADULTS OBSERVED AT THE NEST ON 27 JUN 1994.

PLSS: T20S, R23E, Sec. 23, NE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4006394 E279878
Latitude/Longitude: 36.17734 / -119.44760
Elevation (feet): 245

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DFG94U0003 DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42285
EO Index: 42285
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 793
Occurrence Last Updated: 2013-09-13

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-05-21
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-05-21
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

E SIDE OF HWY 137, ABOUT 0.2 MI S OF AVE 204, 1.5 MI NE OF WAUKENA, 4.4 MI WSW OF PAIGE.

Detailed Location:

DFG SWHA #TU008. SITE IS LOCATED AT THE ENTRANCE TO THE MACHADO DAIRY. SOUTHERNMOST OF THE 3 EUCALYPTUS TREES WAS THE NEST TREE IN 1994. SECOND TREE NORTH OF THE ENTRANCE WAS THE NEST TREE IN 2000 AND 2008.

Ecological:

NEST TREE WAS A EUCALYPTUS SURROUNDED BY DAIRIES AND AGRICULTURE.

Threats:

General:

2 ADULTS & 2 JUVENILES 14 JUL 1994. 2 AD, NO NEST OBS, 1999. 1 AD IN NEST 21 APR; 1 SOARING, 1 FEEDING YOUNG/EATING IN NEST 22 MAY; 1 YOUNG IN NEST, 1 AD NEARBY 20 JUN 2000. PAIR OBS, NESTING UNCONFIRMED 2003. INCUBATION ON 21 MAY 2008.

PLSS: T20S, R23E, Sec. 28, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4004168 E275769
Latitude/Longitude: 36.15634 / -119.49261
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

BRO00F0013	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-05-22
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX
BRO99F0009	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1999-04-18
CON08F0010	CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-05-21
DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42287
EO Index: 42287
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 795
Occurrence Last Updated: 2000-01-27

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1994-06-13
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-06-13
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG BATES SLOUGH, 0.3 MILE NORTH OF ROAD 184 (OCTOL AVENUE), 7 MILES SW OF TULARE.

Detailed Location:

Ecological:

NEST TREE IS A MEDIUM-SIZED VALLEY OAK.

Threats:

General:

DFG SWHA #TU007. 2 ADULTS AND 1 JUVENILE OBSERVED AT THE NEST ON 13 JUN 1994.

PLSS: T21S, R23E, Sec. 02, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4000821 E278598
Latitude/Longitude: 36.12685 / -119.46025
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DFG94U0003 DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43329	**EO Index:**	43329
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	827	**Occurrence Last Updated:**	2013-09-13

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2010-06-04	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2010-06-04	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF 10 1/2 AVE, UP TO 0.4 MI N OF NEVADA AVE, ABOUT 3 MI N OF HELM CORNER, 7.5 MI W OF WAUKENA.

Detailed Location:

MAPPED TO DESCRIPTION & COORDINATES GIVEN FOR 2000 NEST SITE, ALONG 10 1/2 AVE ABOUT 0.4 MI N OF NEVADA AVE; & 2010 NEST SITE NEAR THE INTERSECTION OF 10 1/2 AVE & NEVADA AVE. 2002-03 NEST IN VICINITY OF 2010 SITE.

Ecological:

NEST TREE WAS A EUCALYPTUS IN 2000 AND 2010. 2002-2003 NEST IN EUCALYPTUS IN FARMYARD. AREA SURROUNDED BY ROW CROP AGRICULTURE, INCLUDING SEVERAL ALFALFA FIELDS.

Threats:

General:

2 ADULTS OBSERVED AT SITE FOR 2 WEEKS IN JUL 2000 AT VARIOUS TIMES OF DAY; SENTINEL BEHAVIOR SUGGESTED, NESTING PRESUMED BUT NO NEST FOUND. ACTIVE NEST, 2002-2003. 1 ADULT BRINGING PREY TO NEST & ANOTHER SOARING NEARBY 4 JUN 2010.

PLSS:	T20S, R21E, Sec. 36, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4003083 E261907	**Latitude/Longitude:**	36.14327 / -119.64623	**Elevation (feet):**	200

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

BRO00F0014	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-07-09
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX
BRO03U0004	BROWN, N. - CORRESPONDENCE REGARDING SWAINSON'S HAWK NEST SITES, 2002-2003. 2003-06-09
SEA10F0008	SEAY, J. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2010-06-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 43330
EO Index: 43330
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 828
Occurrence Last Updated: 2000-07-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2000-07-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-07-10
Occurrence Rank: Poor
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF HOUSTON AVENUE AT THE INTERSECTION OF CROSS CREEK, 1.2 MILES EAST OF 6TH AVENUE, 4 MILES SE OF HAMBLIN.

Detailed Location:

Ecological:

NEST TREE IS SUSPECTED TO BE AN OAK.

Threats:

General:

THE PAIR (INCLUDING 1 LIGHT-PHASE ADULT) WAS OBSERVED AT THIS SITE IN MAY-JUN 2000. ON 17 JUL 2000, 2 FLEDGLINGS WERE OBSERVED ON THE WIRE ABOVE THE CREEK.

PLSS: T19S, R22E, Sec. 12 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4019951 E271441
Latitude/Longitude: 36.29749 / -119.54528
Elevation (feet): 245

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

BRO00F0011 BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-07-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43441	**EO Index:**	43441
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	831	**Occurrence Last Updated:**	2012-10-24

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1999-04-20	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1999-04-20	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTH SIDE OF HIGHWAY 137, 0.25 MI NE OF RD 24, SW OF WAUKENA.

Detailed Location:

NEST TREE WAS ON THE WEST SIDE OF A SMALL HOUSE, NORTH OF A LITTLE CURVE ON HWY 137, 0.25 MILE WEST OF THE WAUKENA CITY LIMITS SIGN.

Ecological:

NEST TREE IS THE SECOND LARGER TREE (WEST OF THE SMALL HOUSE); AGRICULTURE TO THE NORTH AND ORCHARD TO THE SOUTH.

Threats:

General:

1 BIRD OBSERVED ON 18 APR 1999 & 2 BIRDS (1 DARK) OBSERVED ON 20 APR 1999 - ONE ON NEST AND ONE PERCHED IN A SNAG SOUTH OF THE HOUSE.

PLSS:	T21S, R23E, Sec. 05, NW (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4001819 E273655	**Latitude/Longitude:**	36.13470 / -119.51541	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

BRO99F0008 BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1999-04-20

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	51633	**EO Index:**	51633
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	1210	**Occurrence Last Updated:**	2013-09-13

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2003-05-20	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2003-05-20	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTHEAST SIDE OF CROSS CREEK, ON THE W SIDE OF THE HWY 43 CROSSING, BETWEEN LANSING & NEVADA AVES, 14 MI W OF TULARE.

Detailed Location:

NEST IS LOCATED ON THE SE SIDE OF THE NEST TREE, WHICH IS VISIBLE FROM HWY 43.

Ecological:

NEST TREE IS A LONE COTTONWOOD ON THE SE SIDE OF CROSS CREEK; ALFALFA FIELD FOUND TO THE NORTH OF THE NEST TREE.

Threats:

General:

ADULTS OBSERVED GOING IN AND OUT OF NEST DURING LATE SPRING-EARLY SUMMER 2002. DARK-MORPH ADULT AGAIN OBSERVED NESTING ON 9 MAY 2003.

PLSS:	T20S, R22E, Sec. 20 (M)	**Accuracy:**	1/5 mile	**Area (acres):**	0
UTM:	Zone-11 N4006114 E265360	**Latitude/Longitude:**	36.17140 / -119.60880	**Elevation (feet):**	210

County Summary:	**Quad Summary:**
Kings	Waukena (3611925)

Sources:

BRO02U0001	BROWN, N. - MEMO DESCRIBING BURROWING OWL BURROW LOCATIONS AND ONE SWAINSON'S HAWK NEST SITE OBSERVED DURING 2000-2002 2002-XX-XX
BRO03U0001	BROWN, N. - EMAIL REGARDING 2003 NESTING OF BUTEO SWAINSONI, INCLUDING AN ATTACHED MAP 2003-XX-XX
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	69651	**EO Index:**	70431
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	1691	**Occurrence Last Updated:**	2013-09-11

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-07	**Occurrence Rank:**	Good
Owner/Manager:	CALTRANS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

S SIDE OF HWY 198, 0.3 MI E OF RD 52, 2.4 MI SW OF GOSHEN.

Detailed Location:

NEST TREE WAS LOCATED WITHIN THE CALTRANS RIGHT-OF-WAY FOR STATE ROUTE 198. MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A BLACK WALNUT; SURROUNDED BY AGRICULTURAL FIELDS PLANTED WITH ALFALFA, BARLEY, AND WALNUT TREES. 2012 SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES AND DANGER OF TRAFFIC.

Threats:

POTENTIAL FOR VEHICLE COLLISIONS.

General:

2 JUVENILES ON/NEAR NEST TREE, 2 ADULTS SOARING OVERHEAD OBSERVED 13 JUL 2007. 2 ADULTS OBS IN NEST TREE 18 MAR, 2 CHICKS IN NEST 11 JUN, 2 FLEDGLINGS NEAR NEST TREE 15 JUL 2008. INCUBATION OBS 30 APR, 1 BEGGING JUV AT NEST SITE 7 AUG 2012.

PLSS:	T18S, R23E, Sec. 35, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4023038 E279914	**Latitude/Longitude:**	36.32726 / -119.45187	**Elevation (feet):**	260

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0034	DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-30
NUN07F0001	NUNES, T. & R. KLEINFELTER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2007-07-13
NUN08F0003	NUNES, T. & H. BAKER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86224
EO Index: 87266
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 1782
Occurrence Last Updated: 2012-06-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2011-04-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-04-22
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF SAINT JOHNS RIVER ABOUT 1 MILE DOWNSTREAM (WEST) OF ROAD 80 (ALTA AVE), ABOUT 4.9 MILES SE OF TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES AND ISOLATED TREE VISIBLE IN AERIAL.

Ecological:

SURROUNDING LAND IS PRIMARILY AGRICULTURE FIELDS.

Threats:

General:

1 ADULT OBSERVED IN ADJACENT SEC 25 NEAR THE CONFLUENCE OF CROSS CREEK & ST. JOHNS RIVER IN 2008, BUT NESTING NOT DETERMINED. 2 ADULTS OBSERVED AT A NEST HERE ON 22 APR 2011.

PLSS: T17S, R24E, Sec. 31, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4032672 E283495
Latitude/Longitude: 36.41485 / -119.41469
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL08F0002 HALSTEAD, P. & J. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-07-16

HAL11F0003 HALSTEAD, J. ET AL. (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2011-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86225
EO Index: 87267
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 1783
Occurrence Last Updated: 2012-06-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST SOUTH OF COTTONWOOD CREEK, ABOUT 0.5 MILE UPSTREAM (EAST) OF ROAD 80 (ALTA AVE), ABOUT 5.9 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO PROVIDED MAPS AND ISOLATED TREE VISIBLE IN AERIALS.

Ecological:

NON-NATIVE GRASSLAND ALONG COTTONWOOD CREEK WITH MOST SURROUNDING LANDS USED FOR AGRICULTURE. NO OTHER TREES FOR NESTING WITHIN A 1/2 MILE.

Threats:

General:

A PAIR OF SWAINSON'S HAWKS WAS OBSERVED IN A WILLOW TREE ON 16 JUL 2008.

PLSS: T17S, R24E, Sec. 21, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4034838 E286289
Latitude/Longitude: 36.43498 / -119.38415
Elevation (feet): 290

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL08F0002 HALSTEAD, P. & J. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-07-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86226	**EO Index:**	87268
Key Quad:	Traver (3611944)	**Element Code:**	ABNKC19070
Occurrence Number:	1784	**Occurrence Last Updated:**	2019-09-09

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive, IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-06-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-06-01	**Occurrence Rank:**	Fair
Owner/Manager:	CALTRANS ROW	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF HWY 99 AT CROSS CREEK, ABOUT 3.8 MILES SSE OF TRAVER.

Detailed Location:

MIDDLE POLYGON INCLUDES 2008 DETECTION MAPPED TO PROVIDED AERIAL MAP, AND COORDINATES GIVEN FOR 2017 DETECTIONS. 2012 DETECTIONS MAPPED TO NORTH AND SOUTH POLYGONS, PER PROVIDED COORDINATES.

Ecological:

ADULT "SITTING IN CROW NEST" MAR 2008; MAY HAVE BEEN REPAIRING NEST OR REUSING NEST MATERIAL FOR NEW NEST NEARBY. 2012 NESTS IN EUCALYPTI MEDIAN JUST N & S OF CREEK. NON-NATIVE GRASSLAND ALONG CREEK USED FOR GRAZING, THEN AGRICULTURE.

Threats:

POTENTIAL FOR COLLISION WITH FAST-MOVING VEHICLES ON EIHER SIDE OF NEST.

General:

UNCONFIRMED NEST SITE IN 2008. N NEST FLEDGED 1 YOUNG IN 2012; S NEST PRODUCED 2 YOUNG; 1ST DIED WITHIN 2 WEEKS OF HATCHING, 2ND HIT BY VEHICLE WHILE BRANCHING/FLEDGING. 2 ACTIVE NESTS REPORTED IN 2017.

PLSS:	T17S, R23E, Sec. 35, SE (M)	**Accuracy:**	non-specific area	**Area (acres):**	41
UTM:	Zone-11 N4031657 E279699	**Latitude/Longitude:**	36.40485 / -119.45672	**Elevation (feet):**	277

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL08F0003	HALSTEAD, J. ET AL. (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-XX
OLE17F0010	O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-10
TEN17F0018	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-01
WAL12F0005	WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15
WAL12F0006	WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86229	**EO Index:**	87271
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	1786	**Occurrence Last Updated:**	2013-08-30

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1993-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1999-04-20	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NW OF ROAD 48 AT HWY 198 (E LACEY BLVD), ABOUT 9.4 MILES W OF VISALIA CITY HALL.

Detailed Location:

TERRITORY TU002 FROM CDFW DATABASE. MAPPED TO LIKELY HABITAT IN AERIALS PER GIVEN LOCS "SE1/4 S27 T18S R23E; JUST W OF ROAD 48 ON THE N SIDE OF STATE HWY 198" ('91-92) & "SE1/4 SW1/4 S27 T18S R23E; 0.4 MI E COUNTYLINE, NORTH 198" (1992-94).

Ecological:

NEST 60-70 FEET HIGH IN EUCALYPTUS TREE (1991 & 1992). DFG SWHA TERRITORY #TU002 IN LARGE EUCALYPTUS (1992-1994). SURROUNDING LAND USED FOR AGRICULTURE.

Threats:

General:

1 PAIR MATING IN PECAN TREE ON S EDGE OF HWY 198 ON 20 APR 1991, & 1 ADULT ON NEST 19 MAY 1991. 1 BROODING ADULT ON THE NEST WITH ITS MATE PERCHED NEARBY ON 20 JUN 1992. NESTING IN 1992-93. NEST OCCUPIED BY RED-TAILED HAWKS IN 1994 & 1999.

PLSS:	T18S, R23E, Sec. 27, SW (M)	**Accuracy:**	1/5 mile	**Area (acres):**	0
UTM:	Zone-11 N4023389 E278501	**Latitude/Longitude:**	36.33010 / -119.46770	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

BRO99U0004	BROWN, N. - 1999 SWAINSON'S HAWK SURVEY SUMMARY AND TABLE. 1999-11-09
DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX
HAN92R0001	HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86995
EO Index: 87964
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 1788
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-15
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198, 0.6 MI W OF 2ND AVE, ABOUT 3 MI ESE OF REMNOY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A LONE EUCALYPTUS TREE (40" DBH). SURROUNDING LAND USE FOR DAIRY, SILAGE FIELDS, AND RURAL RESIDENTIAL. AN OLD LOPSIDED NEST WAS ON THE N SIDE OF THE NEST TREE (2008).

Threats:

General:

NEST BUILDING OBSERVED 18 MAR; 1 ADULT PERCHED & ANOTHER COLLECTING NESTING MATERIAL AND ADDING TO NEST 17 APR; 1 CHICK OBSERVED IN NEST 26 JUN; 1 FLEDGLING OBSERVED ON THE NEST 15 JUL 2008.

PLSS: T18S, R23E, Sec. 32, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023246 E275246
Latitude/Longitude: 36.32806 / -119.50390
Elevation (feet): 260

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

CON08F0002 CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-04-17

NUN08F0004 NUNES, T. & R. KLEINFELTER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-04-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86998	**EO Index:**	87965
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	1789	**Occurrence Last Updated:**	2012-10-22

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-03	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-11	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST SW OF KANSAS AVE AT S 11TH AVE, 0.9 MI WSW OF GUERNSEY, 9.5 MI ENE OF STRATFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN A RED WILLOW AMONG NARROW STAND OF WILLOWS AT NE EDGE OF A 124-ACRE PERCOLATION BASIN SURROUNDED BY ALKALINE GRASSLAND. CATTLE GRAZING AROUND BASIN; ALFALFA, WHEAT AND OTHER SILAGE CROPS FARMED NEARBY.

Threats:

General:

SITE VISITED ONCE PER WEEK 15 MAR-11 AUG 2012: COURTSHIP FLIGHTS OBSERVED 6 APR; NEST BUILDING THROUGH 27 APR; INCUBATION 5 MAY; BROODING 1 JUN; 2 DOWNY CHICKS IN NEST 16 JUN; 1 CHICK OBS 22 JUN; 1 NESTLING FLEDGED 14 JUL; LAST OBS 3 AUG.

PLSS:	T20S, R21E, Sec. 11, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4010528 E261173	**Latitude/Longitude:**	36.21013 / -119.65664	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

DAV12F0001 DAVIS, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-08-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86999
EO Index: 87966
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 1790
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-15
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

E SIDE OF 1 1/2 AVE, ABOUT 0.25 MI N OF HWY 198 (E LACEY BLVD), 3.8 MI WSW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A VALLEY OAK (33" DBH) WITHIN A DIRT PULLOUT WHERE FARM EQUIPMENT WAS OFTEN STORED. SURROUNDING LAND USE INCLUDED CORN FIELDS AND ORCHARDS.

Threats:

General:

NEST BUILDING OBSERVED 27 MAR; 2 CHICKS IN NEST 11 JUN; 2 FLEDGLINGS NEAR NEST 15 JUL 2008.

PLSS: T18S, R23E, Sec. 28, SE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023600 E277052
Latitude/Longitude: 36.33166 / -119.48389
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Goshen (3611934)

Sources:

NUN08F0005 NUNES, T. & K. GOSHGARIAN - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87000
EO Index: 87967
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 1791
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2009-07-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2009-07-16
Occurrence Rank: Good
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198 (LACEY BLVD) JUST W OF CROSS CREEK, ABOUT 1.4 MI ESE OF REMNOY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A EUCALYPTUS SURROUNDED BY DAIRY FACILITIES AND CORN FIELDS.

Threats:

General:

1 ADULT AND 1 JUVENILE OBSERVED IN THE NEST TREE 16 JUL 2009.

PLSS: T18S, R22E, Sec. 36, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023325 E272593
Latitude/Longitude: 36.32814 / -119.53344
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

NUN09F0011 NUNES, T. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2009-07-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	87002	**EO Index:**	87968
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	1792	**Occurrence Last Updated:**	2012-10-22

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2009-06-29	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2009-06-29	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.6 MI SSE OF HWY 198 (LACEY BLVD) AT 6TH AVE, 1.5 MI SSW OF REMNOY, AND 5.3 MI E OF FORT ROOSEVELT.

Detailed Location:

USING AIR PHOTOS, MAPPED TO LOCATION DESCRIPTION: "APPROXIMATELY 0.5 MI S OF STATE ROUTE 198 ON 6TH AVENUE...ROW OF COTTOWNWOODS LOCATED BETWEEN THE 2Y'S RANCH AND THE LAKESIDE DITCH."

Ecological:

NEST WAS WITHIN A COTTONWOOD JUST N OF A TURKEY RANCH SURROUNDED BY CORN AND PISTACHIO FIELDS.

Threats:

General:

MATING ADULTS OBSERVED 25 MAR; NEST BUILDING 1 APR; 2 CHICKS IN NEST 27 MAY; 2 FLEDGLINGS IN AND ADJACENT TO NEST TREE 29 JUN 2009.

PLSS:	T18S, R22E, Sec. 35, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4022434 E269968	**Latitude/Longitude:**	36.31950 / -119.56240	**Elevation (feet):**	250

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

NUN09F0010 NUNES, T. & K. GOSHGARIAN (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2009-03-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87003
EO Index: 87969
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 1793
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-07-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-07-12
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198 (LACEY BLVD), ABOUT 0.3 MI E OF RD 56, 2 MI SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST WAS WITHIN A CALIFORNIA BLACK WALNUT ALONG HWY 198 AND SURROUNDED BY AGRICULTURAL OPERATIONS.

Threats:

General:

1 DOWNY CHICK WAS OBSERVED IN NEST AND 1 ADULT WAS PERCHED IN ADJACENT TREE.

PLSS: T18S, R23E, Sec. 35, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023014 E280680
Latitude/Longitude: 36.32722 / -119.44334
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

NUN12F0006 NUNES, T. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-07-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	87007	**EO Index:**	87972
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	1796	**Occurrence Last Updated:**	2012-10-23

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2007-05-10	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2007-05-10	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST SE OF KENT AVE AT 12TH AVE, ABOUT 2 MI WNW OF GUERNSEY, 8 MI SE OF LEMOORE PO.

Detailed Location:

MAPPED TO THE TREE IN AIR PHOTOS NEAR PROVIDED COORDINATES.

Ecological:

NEST WAS IN A EUCALYPTUS TREE SURROUNDED BY ROW CROP AGRICULTURE, INCLUDING SEVERAL ALFALFA FIELDS.

Threats:

General:

PAIR OBSERVED COPULATING AND BUILDING NEST ON 25 APR; AN ADULT OBSERVED INCUBATING ON 10 MAY 2007.

PLSS:	T20S, R21E, Sec. 02, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4012284 E259795	**Latitude/Longitude:**	36.22560 / -119.67250	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

SEA07F0003 SEAY, J. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2007-04-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87019
EO Index: 87984
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 1798
Occurrence Last Updated: 2012-10-24

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-05-21
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-05-21
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

N SIDE OF HWY 137, 0.5 MI NE OF RD 20, 0.8 MI SW OF WAUKENA.

Detailed Location:

NEST TREE IS ABOUT THIRD TREE IN FROM THE E EDGE OF AN L-SHAPED ROW OF EUCALYPTUS TREES ALONG A CANAL ON A RESIDENTIAL SITE. MAPPED TO PROVIDED DESCRIPTION AND MAPS.

Ecological:

NEST TREE WAS A EUCALYPTUS TREE SURROUNDED BY ALFALFA AND OTHER SILAGE, SMALL ORCHARD, RURAL RESIDENTIAL. CANALS AND CAMERON CREEK ALSO NEARBY.

Threats:

General:

1 ADULT SITTING LOW ON NEST, ASSUMED IN INCUBATION STAGE ON 21 MAY 2008; OTHER ADULT NOT SEEN.

PLSS: T21S, R23E, Sec. 06, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4001430 E273144
Latitude/Longitude: 36.13107 / -119.52097
Elevation (feet): 220

County Summary:	Quad Summary:
Tulare	Waukena (3611925)

Sources:

CON08F0011 CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-05-21

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90287
EO Index: 91320
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 2510
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-08-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-08-XX
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

STATE ROUTE 99 MEDIAN, ABOUT 1.5 MILES NW OF THE CROSS CREEK CROSSING AND 2.3 MILES SE OF THE TRAVER POST OFFICE.

Detailed Location:

MAPPED TO GIVEN COORDINATES.

Ecological:

NEST IN TRIMMED EUCALYPTUS IN MEDIAN, FOUND DURING ROAD CONSTRUCTION. SURROUNDING LAND USE WAS AGRICULTURAL, INCLUDING DAIRY IMMEDIATELY TO WEST.

Threats:

POTENTIAL FOR COLLISION WITH FAST-MOVING VEHICLES ON EITHER SIDE OF NEST.

General:

NESTING PAIR WITH 1 CHICK OBSERVED IN 2012; CHICK SUCCESSFULLY FLEDGED IN AUGUST.

PLSS: T17S, R23E, Sec. 27, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4033778 E278635
Latitude/Longitude: 36.42370 / -119.46917
Elevation (feet): 270

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

WAL12F0004 WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90293
EO Index: 91328
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 2511
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-04-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-04-16
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF COUNTY ROAD 60, ABOUT 0.25 MILE SSW OF ITS JUNCTION WITH AVE 290 AND 2.9 MILES SW OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES, ABOUT 275 FEET WEST OF ROAD 60.

Ecological:

NEST 20' UP IN A WALNUT TREE WITHIN A WALNUT ORCHARD. SURROUNDING AREA PLANTED IN ORCHARDS AND CROPS, PRIMARILY ALFALFA AND CORN, WITH CATTLE YARD TO NORTH. 2012 SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 16 APR 2012; AT LEAST 2 YOUNG WERE FLEDGED BY LATER, UNSPECIFIED DATE.

PLSS: T19S, R23E, Sec. 02, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4021367 E280902
Latitude/Longitude: 36.31243 / -119.44040
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Goshen (3611934)

Sources:

DAN12F0029 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90294	**EO Index:**	91329
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2512	**Occurrence Last Updated:**	2013-10-03

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-05-31	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-XX	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF COUNTY ROAD 68 (=J25) ABOUT 0.7 MILE N OF THE AVENUE 280 INTERSECTION AND 3 MILES SOUTH OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES. NEST TREE ABOUT 100 FEET WEST OF ROAD 68, OPPOSITE THE "VISALIA WATER CONSERVATION PLANT."

Ecological:

NEST 30' UP IN ISOLATED VALLEY OAK IN ALFALFA FIELD SURROUNDED BY MIX OF WALNUT ORCHARDS AND ROW CROPS DOMINATED BY ALFALFA. 2012 SURVEYOR NOTED DISTURBANCE FROM FARM ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 5 APR 2012; FEEDING UNKNOWN NUMBER OF CHICKS ON 31 MAY; BRANCH HOLDING NEST BROKE (POSSIBLY DURING STORM ON 4-5 JUN), NEST FAILED; TERRITORY UNOCCUPIED IN EARLY AUG.

PLSS:	T19S, R23E, Sec. 01, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4020771 E282552	**Latitude/Longitude:**	36.30744 / -119.42187	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0027 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90295	**EO Index:**	91330
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2513	**Occurrence Last Updated:**	2013-10-03

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status:
Federal: None
State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks:
Global: G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-07	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

EAST SIDE OF COUNTY ROAD 68 (=J25), ABOUT 0.1 MILE NNE OF THE AVENUE 280 INTERSECTION AND 3.5 MILES SOUTH OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES. NEST TREE ABOUT 250 FEET EAST OF ROAD 68, NORTH OF A SMALL ABANDONED SCHOOL HOUSE (PACKWOOD SCHOOL).

Ecological:

NEST 20' UP IN WALNUT TREE IN WALNUT ORCHARD. SURROUNDING AREA PLANTED IN ROW CROPS DOMINATED BY ALFALFA AND CORN. SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 17 APR 2012; 2 CHICKS IN NEST ON 19 JUN; 1 JUVENILE OBSERVED AT NEST SITE ON 7 AUG, INDICATING THAT AT LEAST 1 YOUNG SUCCESSFULLY FLEDGED.

PLSS:	T19S, R24E, Sec. 06, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4019890 E282662	**Latitude/Longitude:**	36.29953 / -119.42041	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0031 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90296	**EO Index:**	91334
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2514	**Occurrence Last Updated:**	2013-09-12

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-04-06	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-04-06	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF ROAD 76 (=ELKHORN ST), ABOUT 0.1 MILE NORTH OF THE AVENUE 272 INTERSECTION AND 4.5 MILES SSE OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST 60' UP IN 1 OF 3 CYPRESSES IN YARD OF PRIVATE RESIDENCE. SURROUNDING LAND USES WERE MAINLY WALNUT ORCHARDS AND ROW CROPS DOMINATED BY CORN, WITH A FEW OTHER RESIDENCES ON THE STREET.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 6 APR 2012; THE NEST WAS SUCCESSFUL AND AT LEAST ONE YOUNG WAS FLEDGED ON UNSPECIFIED DATE.

PLSS:	T19S, R24E, Sec. 07, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4018251 E284148	**Latitude/Longitude:**	36.28510 / -119.40341	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0028 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90297
EO Index: 91335
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 2515
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-06-19
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-08-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF AVE 280 (=HOUSTON/W CALDWELL AVE) ALMOST 0.5 MILE EAST OF RD 44 (1ST AVE) AND 4.5 MILES SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. NEST TREE LOCATED OPPOSITE DIKED HOLDING PONDS ON THE NORTH SIDE OF THE ROAD.

Ecological:

NEST 50' UP IN PINE AMONG ROW OF PINES AT A PRIVATE RESIDENCE. SURROUNDING LAND USES WERE CATTLE YARDS AND ROW CROPS, WITH ALFALFA FIELDS NEARBY. SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES AND TRAFFIC.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 16 APR 2012; ADULT SEEN ON NEST ON 1 & 19 JUN; NEST INTACT BUT NO SWAINSON'S HAWKS PRESENT ON SUCCESSIVE VISITS 5, 6, & 7 AUG, NEST SUCCESS UNCERTAIN.

PLSS: T19S, R23E, Sec. 10, N (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4019786 E278561
Latitude/Longitude: 36.29766 / -119.46601
Elevation (feet): 260

County Summary:

Tulare

Quad Summary:

Goshen (3611934)

Sources:

DAN12F0030 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90303	**EO Index:**	91345
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	2517	**Occurrence Last Updated:**	2016-12-07

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2016-06-08	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2016-06-08	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF E LACEY BLVD, ABOUT 0.25 MILE NE OF THE HWY 43 (=8TH AVE) OVERPASS OVER HWY 198, EAST OF HANFORD.

Detailed Location:

MAPPED TO COORDINATES GIVEN ON FIELD SURVEY FORMS.

Ecological:

2012: NEST 50' UP IN ROADSIDE EUCALYPTUS, WITH CONSTRUCTION & STORAGE YARD IMMEDIATELY SOUTH AND ROW CROPS NORTH OF LACEY BLVD (CORN IN 2012). 2016: EUCALYPTUS ON SOUTH SIDE OF ROAD, APPEARS TO BE SAME LOCATION AS 2012.

Threats:

VEHICLE COLLISIONS FROM TRAFFIC ALONG ROADWAY (2012, 2016). AGRICULTURE (2016).

General:

INCUBATION OBSERVED ON 17 APR 2012; 1 CHICK SEEN IN THE NEST ON 31 MAY; ADULT FEMALE FOUND DEAD ON ROAD OPPOSITE THE NEST ON 11 JUN (LIKELY TRAFFIC COLLISION), CHICK IN NEST WAS DEAD. 1 ADULT OBSERVED SITTING ON NEST ON 8 JUN 2016.

PLSS:	T18S, R22E, Sec. 33, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4023451 E266798	**Latitude/Longitude:**	36.32790 / -119.59799	**Elevation (feet):**	248

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

CHE16F0007 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-08

DAN12F0032 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90305	**EO Index:**	91347
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	2518	**Occurrence Last Updated:**	2013-10-04

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-08	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-08	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTH SIDE OF GRANGEVILLE BLVD, FROM 7TH AVE INTERSECTION TO ABOUT 0.3 MILE EAST, 2.6 MILES EAST OF HANFORD.

Detailed Location:

2 NEST SITES, MAPPED TO GIVEN COORDINATES. WEST SITE, 200' EAST OF 7TH AVE, WAS FIRST NEST ATTEMPT; EAST SITE, ABOUT 1700' EAST OF 7TH AVE, WAS SECOND, SUCCESSFUL ATTEMPT.

Ecological:

FIRST NEST IN SMALL, RELATIVELY YOUNG WALNUT ORCHARD. SECOND NEST 50' UP IN EUCALYPTUS ON BACKSIDE OF PRIVATE RESIDENCE. SURROUNDED BY ORCHARDS AND ROW CROPS OF CORN AND ALFALFA. DISTURBANCE FROM FARMING ACTIVITIES AND TRAFFIC.

Threats:

POTENTIAL FOR VEHICLE COLLISIONS ALONG BUSY LOCAL ROAD.

General:

NEST-BUILDING OBSERVED AT 1ST NEST SITE ON 1 MAR 2012; 1ST NEST STILL ACTIVE IN EARLY APR, LATER ABANDONED. THREE YOUNG FLEDGED FROM 2ND NEST, FAMILY GROUP OF 2 ADULTS AND 3 JUVENILES OBSERVED FORAGING ABOUT 0.25 MI E OF NEST ON 8 AUG 2012.

PLSS:	T18S, R22E, Sec. 22, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4025161 E268733	**Latitude/Longitude:**	36.34376 / -119.57695	**Elevation (feet):**	255

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

DAN12F0033 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90314
EO Index: 91359
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2520
Occurrence Last Updated: 2013-09-13

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2003-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2003-05-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

EAST SIDE OF ROAD 48, ABOUT 0.3 MILE NORTH OF AVENUE 248 AND 7.3 MILES WNW OF TULARE PO.

Detailed Location:

MAPPED TO GIVEN ADDRESS: 25076 ROAD 48.

Ecological:

NEST TREE ADJACENT TO "HOUSE WITH EUCALYPTUS."

Threats:

General:

NEST WITH PAIR OBSERVED IN MAY 2003; 1 ADULT SEEN CARRYING TWIG(S) TO NEST. UNKNOWN IF EGGS OR YOUNG WERE PRODUCED.

PLSS: T19S, R23E, Sec. 27, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4013940 E278461
Latitude/Longitude: 36.24498 / -119.46546
Elevation (feet): 255

County Summary:

Tulare

Quad Summary:

Paige (3611924)

Sources:

BRO03U0002 BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2886
EO Index: 104507
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 2701
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-06-07
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-06-07
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTH SIDE OF JERSEY AVE, ABOUT 0.4 MILES E OF HWY 43 AND 6.0 MILES SSE OF HANFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST EXPOSED AT TOP OF ROADSIDE EUCALYPTUS.

Threats:

AGRICULTURE.

General:

1 ADULT OBSERVED SITTING LOW IN NEST ON 7 JUN 2016.

PLSS: T19S, R22E, Sec. 28, SW (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4013741 E266890
Latitude/Longitude: 36.24046 / -119.59407
Elevation (feet): 231

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

CHE16F0008 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2899
Key Quad: Remnoy (3611935)
Occurrence Number: 2703

EO Index: 104518
Element Code: ABNKC19070
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened

CNDDB Element Ranks: **Global:** G5
State: S4

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-06-06
Last Survey Date: 2016-06-06
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

WEST SIDE OF 7TH AVE ABOUT 0.4 MI N OF THE IONA AVE INTERSECTION & 1.1 MI SE OF HWY 43 AT HOUSTON AVE, SE OF HANFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN ASH TREE ADJACENT TO ALFALFA FIELDS.

Threats:

AGRICULTURE.

General:

1 ADULT OBSERVED DELIVERING FOOD TO UNSEEN NEST IN TREE ON 6 JUN 2016; A SECOND INDIVIDUAL NEARBY WAS LIKELY ITS MATE.

PLSS: T19S, R22E, Sec. 9, SE (M)
UTM: Zone-11 N4019230 E267964

Accuracy: 80 meters
Latitude/Longitude: 36.29016 / -119.58376

Area (acres): 5
Elevation (feet): 243

County Summary:	Quad Summary:
Kings	Remnoy (3611935)

Sources:

CHE16F0010 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2917
EO Index: 104537
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 2707
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-03-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-03-24
Occurrence Rank: Good
Owner/Manager: PVT-CHEVRON
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF NEVADA AVE ABOUT 0.25 MI ESE OF THE HWY 43 INTERSECTION & 1.5 MI NW OF 5 1/2 AVE AT NEWARK AVE, N OF CORCORAN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS EUCALYPTUS. ADJACENT LAND USE WAS SOLAR POWER FACILITY.

Threats:

SOLAR DEVELOPMENT.

General:

PAIR OBSERVED BUILDING NEST IN EUCALYPTUS ON 24 MAR 2016.

PLSS: T21S, R22E, Sec. 3, N (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4002180 E267753
Latitude/Longitude: 36.13655 / -119.58106
Elevation (feet): 213

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

CHE16F0015 CHEN, S. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-03-24

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A8178	**EO Index:**	109959
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2733	**Occurrence Last Updated:**	2018-02-06

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-30	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-30	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.2 MILES SW OF N PLAZA DR (J1) AT W NICHOLAS AVE & 1.4 MILES SE OF HWY 99 AT W GOSHEN AVE, SE OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. NEST N15.

Ecological:

STICK NEST IN OAK TREE ADJACENT TO AGRICULTURAL FIELDS AND COMMERCIAL AREA. VISIBLE DISTURBANCES FROM AGRICULTURE, HEAVY TRUCKING, AND URBAN USE.

Threats:

General:

STICK NEST PRESENT PRIOR TO 2017 SEASON. NESTING PAIR MONITORED IN 2017; A PROBABLE CHICK OBSERVED ON APR 20, BUT NEST SEEMED TO BE EMPTY ON 19 & 30 MAY; NO HAWKS OBSERVED IN SUBSEQUENT SURVEYS.

PLSS:	T18S, R24E, Sec. 29, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023722 E284884	**Latitude/Longitude:**	36.33454 / -119.39675	**Elevation (feet):**	289

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

HIN17F0003 HINDERER, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B0744	**EO Index:**	112614
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2751	**Occurrence Last Updated:**	2018-09-20

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-23	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-23	**Occurrence Rank:**	Good
Owner/Manager:	PVT, UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF SIERRA BLVD (SR 198), ABOUT 250 FT W OF THE RD 52 INTERSECTION & 1.0 MILES E OF 1ST AVE, SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN MOSTLY-DEAD WALNUT ADJACENT TO SR 198. SURROUNDING LAND USE WAS AGRICULTURAL. SURVEYOR NOTED NOISE DISTURBANCE FROM HIGHWAY.

Threats:

General:

1 DARK MORPH OBSERVED SITTING IN NEST ON 23 MAY 2017.

PLSS:	T18S, R23E, Sec. 34, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023067 E279343	**Latitude/Longitude:**	36.32739 / -119.45825	**Elevation (feet):**	273

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

SIN17F0003	SINGLE, A. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-23
TEN17D0001	TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2017 2017-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3288	**EO Index:**	115203
Key Quad:	Traver (3611944)	**Element Code:**	ABNKC19070
Occurrence Number:	2765	**Occurrence Last Updated:**	2019-07-12

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status:
Federal: None
State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks:
Global: G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-04-05	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-04-05	**Occurrence Rank:**	Good
Owner/Manager:	PVT-WESTERVELT ECOLOGICAL SVCS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ALONG COTTONWOOD CREEK, ABOUT 0.8 MI SW OF ROAD 80 AT AVENUE 360 & 4.9 MI ESE OF TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

LIGHTLY GRAZED, OPEN RANGELAND WITH ADJACENT LANDS IN ALFALFA AND ORCHARDS.

Threats:

General:

PAIR OBSERVED PERCHING, FORAGING, AND COPULATING IN/NEAR 2 TREES WITH STICK NESTS ON 5 APR 2017.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	1/5 mile	**Area (acres):**	70
UTM:	Zone-11 N4034687 E284668	**Latitude/Longitude:**	36.43327 / -119.40219	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

PRE17F0008 PRESTON, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3332
Key Quad: Goshen (3611934)
Occurrence Number: 2769

EO Index: 115248
Element Code: ABNKC19070
Occurrence Last Updated: 2019-07-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened

CNDDB Element Ranks: **Global:** G5
State: S4

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-04-22
Last Survey Date: 2016-04-22
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

W SIDE OF 1ST AVE, ABOUT 450' S OF THE HANFORD ARMONA RD INTERSECTION & 4.0 MI SW OF I-99 AT CA-198, W OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN EUCALYPTUS TREE BEHIND RURAL RESIDENCE.

Threats:

General:

NESTING PAIR OBSERVED ON 22 APR 2016. OBSERVED DURING STATEWIDE SURVEY EFFORT.

PLSS: T19S, R23E, Sec. 4, NE (M)
UTM: Zone-11 N4021411 E277709

Accuracy: 80 meters
Latitude/Longitude: 36.3121 / -119.47596

Area (acres): 5
Elevation (feet): 268

County Summary:

Kings, Tulare

Quad Summary:

Goshen (3611934)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX

TEN16F0017 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3333
EO Index: 115249
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2770
Occurrence Last Updated: 2019-07-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-04-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-04-22
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF W TULARE AVE, ABOUT 0.1 MI W OF THE RD 84 INTERSECTION & 0.7 MI NW OF GEMINI ST AT W OWENS AVE IN TULARE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

LONE OAK TREE IN WHEAT FIELD.

Threats:

General:

NESTING PAIR OBSERVED ON 22 APR 2016. OBSERVED DURING STATEWIDE SURVEY EFFORT.

PLSS: T20S, R24E, Sec. 8, NE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4009877 E285483
Latitude/Longitude: 36.20997 / -119.38628
Elevation (feet): 276

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX
TEN16F0018 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3352
EO Index: 115268
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2781
Occurrence Last Updated: 2019-07-11

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-03-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-03-22
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG TULARE AVE (AVE 232) ABOUT 0.5 MI E OF THE RD 48 INTERSECTION & 5.2 MI WNW OF CA-137 AT S WEST ST IN TULARE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN LARGE TREE IN AGRICULTURAL AREA.

Threats:

General:

PAIR REPORTEDLY OBSERVED BUILDING NEST ON 22 MAR 2016; 1 ADULT WAS SITTING ON NEST, OTHER WAS CARRYING NEST MATERIAL TO TREE.

PLSS: T20S, R23E, Sec. 3, SE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4010098 E279051
Latitude/Longitude: 36.21051 / -119.45783
Elevation (feet): 254

County Summary:

Tulare

Quad Summary:

Paige (3611924)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX

TEN16F0028 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-03-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3381	**EO Index:**	115297
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2786	**Occurrence Last Updated:**	2019-07-11

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2016-06-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2016-06-01	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF CA-198 (=AVE 296) ABOUT 0.2 MI E OF THE ROAD 44 INTERSECTION & 3 MI SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN OAK TREE IN RANDOM BLOCK SURVEYED IN 2016 STATEWIDE SURVEY.

Threats:

General:

NESTING PAIR OBSERVED ON 1 JUN 2016.

PLSS:	T18S, R23E, Sec. 34, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023109 E278096	**Latitude/Longitude:**	36.32748 / -119.47214	**Elevation (feet):**	269

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

TEN16D0001	TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX
TEN16F0038	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3405
EO Index: 115320
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 2794
Occurrence Last Updated: 2019-07-09

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2017-06-14
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-06-14
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG CA-99, ABOUT 0.9 MI NE OF ROAD 36 AT AVE 352 & 1.0 TO 1.3 MI SE OF THE MERRITT DR INTERSECTION IN TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NESTS IN EUCALYPTI IN WINDBREAK IN MEDIAN OF CA-99. SURROUNDING LAND USES INCLUDED INDUSTRY AND AGRICULTURE.

Threats:

ROAD CONSTRUCTION.

General:

3 ACTIVE NESTS OBSERVED IN 2017; NEST SUCCESS UNKNOWN.

PLSS: T17S, R23E, Sec. 21, NE (M)
Accuracy: specific area
Area (acres): 14
UTM: Zone-11 N4035434 E277798
Latitude/Longitude: 36.43842 / -119.47898
Elevation (feet): 283

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

OLE17F0011 O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-10
TEN17F0020 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-14
TEN17F0021 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-14

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3406	**EO Index:**	115321
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2795	**Occurrence Last Updated:**	2019-07-09

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive, IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-07-06	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-07-06	**Occurrence Rank:**	Unknown
Owner/Manager:	CITY OF VISALIA	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

E SIDE OF S PLAZA DR JUST N OF THE ENTRANCE TO VALLEY OAKS GOLF COURSE & 0.7 MI SSE OF THE CA-198 INTERCHANGE, VISALIA.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN EUCALYPTUS TREE AT EDGE OF GOLF COURSE, ADJACENT TO AGRICULTURAL FIELD, SURROUNDED BY ANNUAL GRASSLAND, AGRICULTURE, AND AIRPORT.

Threats:

CONVERSION TO ORCHARD.

General:

ACTIVE NEST MONITORED IN 2017 FLEDGED AT LEAST 1 YOUNG.

PLSS:	T18S, R24E, Sec. 32, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4021831 E285743	**Latitude/Longitude:**	36.3177 / -119.38666	**Elevation (feet):**	295

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

SEA17F0001	SEAY, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-25
SEA17F0004	SEAY, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-25
TEN17F0022	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-07-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3413
EO Index: 115328
Key Quad: Guernsey (3611926)
Element Code: ABNKC19070
Occurrence Number: 2800
Occurrence Last Updated: 2019-07-09

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2017-07-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-07-12
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

N SIDE OF KENT AVE ABOUT 0.25 MI W OF THE 15TH AVE INTERSECTION & 5.7 MI SE OF LEMOORE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. SE OF TACHI YOKUTS SANTA ROSA RANCHERIA.

Ecological:

NEST IN COTTONWOOD AT EASTERN EDGE OF RARE, HIGH-QUALITY SALTGRASS PRAIRIE ALONG CAIN SLOUGH.

Threats:

General:

2 ADULTS REPORTEDLY OBSERVED PERCHED NEAR NEST ON 12 JUL 2017; PRESUMED TO BE A BREEDING PAIR.

PLSS: T19S, R21E, Sec. 31, SE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4012452 E254524
Latitude/Longitude: 36.2258 / -119.73114
Elevation (feet): 220

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

TEN17F0030 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-07-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3887	**EO Index:**	116801
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	2805	**Occurrence Last Updated:**	2019-09-30

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-17	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-17	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

W SIDE OF CA-33 (8TH AVE) ABOUT 0.4 MI S OF THE JERSEY AVE INTERSECTION & 2.6 MI NE OF GUERNSEY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN VALLEY OAK TREE WITHIN CORN FIELD, SURROUNDED BY AGRICULTURE AND ADJACENT TO ROAD RIGHT-OF-WAY.

Threats:

AGRICULTURE OPERATIONS. POSSIBLE DEVELOPMENT/CONSTRUCTION (MAR 2017 DETECTION DURING PRE-CONSTRUCTION SURVEYS).

General:

PAIR OBSERVED COPULATING ON NEST ON 16 MAR 2017. 1 ADULT OBSERVED SITTING ON NEST ON 17 MAY 2017.

PLSS:	T19S, R22E, Sec. 32, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4013068 E266209	**Latitude/Longitude:**	36.23424 / -119.60144	**Elevation (feet):**	229

County Summary:	**Quad Summary:**
Kings	Waukena (3611925)

Sources:

OLE17F0008	O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-17
RIT17F0001	RITT, S. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-03-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40396
Key Quad: Traver (3611944)
Occurrence Number: 310
EO Index: 35403
Element Code: ABNSB10010
Occurrence Last Updated: 1998-12-16

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 1998-04-10
Last Survey Date: 1998-04-10
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Fair
Trend: Unknown

Location:

SOUTH OF CROSS CREEK, 0.75 MILE NE OF HWY 99, 4.5 MILES SE OF TRAVER.

Detailed Location:

Ecological:

HABITAT CONSISTS OF NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS. LEPIDURUS PACKARDI ALSO OCCURS IN THE VICINITY. AGRICULTURE TO SOUTH AND EAST.

Threats:

THREATENED BY AGRICULTURAL CONVERSION.

General:

UNKNOWN NUMBER OF OWLS OBSERVED ON 10 APRIL 1998.

PLSS: T17S, R23E, Sec. 36, SE (M)
Accuracy: non-specific area
Area (acres): 254
UTM: Zone-11 N4031485 E281502
Latitude/Longitude: 36.40371 / -119.43657
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

HAL98F0001 HALSTEAD, J.A. & P.S. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 1998-04-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44977
EO Index: 44977
Key Quad: Traver (3611944)
Element Code: ABNSB10010
Occurrence Number: 396
Occurrence Last Updated: 2017-06-13

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
BETWEEN CROSS CREEK AND SETTLERS DITCH, 12 MILES NW OF VISALIA.

Detailed Location:
MAPPED TO PROVIDED COORDINATES.

Ecological:
2000: NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS; SURROUNDED BY GRASSLAND TO NORTH & EAST, FARMLAND TO SOUTH & WEST. 2016: SURROUNDING LANDS USED FOR AGRICULTURE & GRAZING; OVERWINTERING HABITAT FOR THE OWLS; POTENTIAL MITIGATION BANK.

Threats:
POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (2000).

General:
2 ADULTS OBSERVED AT THE BURROW SITE DURING FEB 2000. 2 OWLS AT SEPARATE BURROWS OBSERVED ON 6 MAR 2016. 6 OCCUPIED BURROWS OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T18S, R23E, Sec. 4, NW (M)
Accuracy: specific area
Area (acres): 34
UTM: Zone-11 N4030812 E276921
Latitude/Longitude: 36.39659 / -119.48743
Elevation (feet): 268

County Summary:
Kings

Quad Summary:
Traver (3611944)

Sources:

HAL00F0003	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE) 2000-03-11
HEL16F0007	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL16F0008	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44978
EO Index: 44978
Key Quad: Burris Park (3611945)
Element Code: ABNSB10010
Occurrence Number: 397
Occurrence Last Updated: 2017-05-30

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G4
State: S2
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, 1 MILE SOUTH OF SETTLERS DITCH, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED LOCATIONS.

Ecological:

1999: NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS; SURROUNDED BY GRASSLAND TO THE SOUTH & EAST, FARMLAND TO THE NORTH & WEST. 2016: LAND USED FOR AGRICULTURE & GRAZING; WETLANDS ARE MAINLY ALKALI VERNAL POOLS; POTENTIAL MITIGATION BANK.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (1999).

General:

4 ADULTS OBSERVED AT THE BURROW SITE ON 1 MAR 1999. 1 ADULT OBSERVED AT BURROW ON 6 MAR 2016. 4 OCCUPIED BURROWS OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T18S, R23E, Sec. 8, W (M)
Accuracy: specific area
Area (acres): 21
UTM: Zone-11 N4029212 E274900
Latitude/Longitude: 36.38171 / -119.50948
Elevation (feet): 263

County Summary:	Quad Summary:
Kings	Burris Park (3611945)

Sources:

HAL99F0007	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE) 1999-03-01
HEL16F0009	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 72215
EO Index: 73157
Key Quad: Waukena (3611925)
Element Code: ABNSB10010
Occurrence Number: 1207
Occurrence Last Updated: 2008-09-09

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2000-03-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-03-XX
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
0.7 MILE WNW OF JUNCTION OF ROAD 28 & AVENUE 208, 2.2 MILES NNW OF WAUKENA, ABOUT 10 WSW OF TULARE.

Detailed Location:

Ecological:
HABITAT IS A PASTURE WITH NON-NATIVE GRASSES. AGRICULTURE LAND TO THE NORTH, EAST AND SOUTH. NATIVE GRASSLAND TO THE WEST IN KINGS COUNTY.

Threats:

General:
BURROW SITE. 16 ADULTS OBSERVED IN MARCH 2000.

PLSS: T20S, R23E, Sec. 19 (M)
Accuracy: non-specific area
Area (acres): 84
UTM: Zone-11 N4005630 E272894
Latitude/Longitude: 36.16884 / -119.52496
Elevation (feet): 230

County Summary:
Kings, Tulare

Quad Summary:
Waukena (3611925)

Sources:
HAL00F0029 HALSTEAD, J. & P. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2000-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A0200
EO Index: 101762
Key Quad: Waukena (3611925)
Element Code: ABNSB10010
Occurrence Number: 1957
Occurrence Last Updated: 2016-05-31

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G4
State: S2
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2016-01-08
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-01-08
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
EAST SIDE OF CA-43 ABOUT 0.2 MI SE OF ITS INTERSECTION WITH NEVADA AVE, NW OF CORCORAN.

Detailed Location:
MAPPED TO PROVIDED COORDINATES.

Ecological:
ANNUAL GRASSLAND WITH MANY SMALL BURROWS.

Threats:
AGRICULTURE, SOLAR DEVELOPMENT.

General:
1 ADULT OBSERVED STANDING AT BURROW ON 8 JAN 2016.

PLSS: T21S, R22E, Sec. 3, NW (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4002052 E267637
Latitude/Longitude: 36.13537 / -119.58231
Elevation (feet): 212

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
CUM16F0002 CUMMINGS, C. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-01-08

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A4870	**EO Index:**	106568
Key Quad:	Traver (3611944)	**Element Code:**	ABNSB10010
Occurrence Number:	2004	**Occurrence Last Updated:**	2017-05-30

Scientific Name: *Athene cunicularia*

Common Name: burrowing owl

Listing Status: **Federal:** None

State: None

CNDDB Element Ranks: **Global:** G4

State: S2

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.9 MILES WNW OF HWY 99 AT CROSS CREEK AND 2.0 MILES SE OF AVE 352 AT RD 36, NW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

VERNAL POOL LANDSCAPE; POTENTIAL MITIGATION BANK.

Threats:

General:

OCCUPIED BURROW OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS:	T17S, R23E, Sec. 34, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4031771 E278206	**Latitude/Longitude:**	36.40552 / -119.47338	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A4872
Key Quad: Traver (3611944)
Occurrence Number: 2005

EO Index: 106570
Element Code: ABNSB10010
Occurrence Last Updated: 2017-05-30

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None

CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Last Survey Date: 2017-03-01
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ABOUT 0.4 MILES WNW OF HWY 99 AT CROSS CREEK AND 2.3 MILES SE OF AVE 352 AT RD 36, NW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

VERNAL POOL LANDSCAPE; POTENTIAL MITIGATION BANK.

Threats:

General:

OCCUPIED BURROW OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T17S, R23E, Sec. 34, SE (M)
UTM: Zone-11 N4031716 E278986

Accuracy: 80 meters
Latitude/Longitude: 36.40521 / -119.46468

Area (acres): 5
Elevation (feet): 273

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86216
EO Index: 87281
Key Quad: Traver (3611944)
Element Code: ABPBR01030
Occurrence Number: 106
Occurrence Last Updated: 2012-06-29

Scientific Name: *Lanius ludovicianus*
Common Name: loggerhead shrike

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G4
State: S4

General Habitat:

BROKEN WOODLANDS, SAVANNAH, PINYON-JUNIPER, JOSHUA TREE, AND RIPARIAN WOODLANDS, DESERT OASES, SCRUB AND WASHES.

Micro Habitat:

PREFERS OPEN COUNTRY FOR HUNTING, WITH PERCHES FOR SCANNING, AND FAIRLY DENSE SHRUBS AND BRUSH FOR NESTING.

Last Date Observed: 1992-06-29
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1992-06-29
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF ROAD 80 (ALTA AVE) ALONG COTTONWOOD CREEK ABOUT 0.5 MILE SOUTH OF AVENUE 360, ABOUT 5 MILES ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROJECT SITE.

Ecological:

1 OR MORE LOGGERHEAD SHRIKE NEST WAS FOUND IN GOODDING'S WILLOWS ON THE SITE. IN 1994 AND 2010 AERIALS, TREES ARE ONLY FOUND ALONG THE CREEK RUNNING THROUGH THE SITE. SITE USED FOR GRAZING.

Threats:

General:

AT LEAST ONE NEST WAS FOUND ON THE SITE BETWEEN 21 MAR AND 29 JUN 1992. 6 OTHER BIRD SPECIES NESTED IN WILLOWS, AND LEPIDURUS PACKARDI, BRANCHINECTA LYNCHI, AND SPEA HAMMONDII ARE KNOWN FROM SITE.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: non-specific area
Area (acres): 132
UTM: Zone-11 N4034765 E285094
Latitude/Longitude: 36.43406 / -119.39746
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAN92R0001 HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 97565
Key Quad: Paige (3611924)
Occurrence Number: 677
EO Index: 98887
Element Code: ABPBXB0020
Occurrence Last Updated: 2015-11-13

Scientific Name: *Agelaius tricolor*
Common Name: tricolored blackbird

Listing Status: **Federal:** None
State: Threatened
CNDDB Element Ranks: **Global:** G1G2
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_EN-Endangered
USFWS_BCC-Birds of Conservation Concern

General Habitat:

HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY AND VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro Habitat:

REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, AND FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Last Date Observed: 2000-04-21
Last Survey Date: 2014-04-18
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

N SIDE OF AVE 192, JUST NW OF JUNCTION W/ ROAD 36 AND 0.3 MI NE OF JUNCTION W/ ROAD 32, 4.5 MI NE OF CORCORAN PO.

Detailed Location:

2000 LOCATION DESCRIBED AS "0.25 MI NW OF JUNCTION OF RD 36/AVE 192, 6 MI NE OF CORCORAN." COLONY DATA STORED IN UC DAVIS TRICOLORED BLACKBIRD PORTAL; SITE NAME "ROAD 36 AT AVENUE 192."

Ecological:

1:2 M/F RATIO. 5-10 ACRES OCCUPIED BY NESTS, 175+ NOT OCCUPIED. TOTAL LOSS OF NESTING SITE DUE TO MOWING IN 2000. SILAGE FIELD HAD BEEN CHOPPED IN 2014.

Threats:

General:

ABOUT 4,000 BIRDS OBSERVED NESTING ON 21 APR 2000; 1-2 DAY OLD HATCHLINGS OBSERVED, BIRDS HAD BEGUN DISPERSING DUE TO MOWING OF SITE. 0 BIRDS OBSERVED ON 18 APR 2014.

PLSS: T20S, R23E, Sec. 32, SE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4002350 E275480
Latitude/Longitude: 36.13990 / -119.49530
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DEH00F0001	DEHAVEN, R. (U.S. FISH AND WILDLIFE SERVICE-SACRAMENTO) - FIELD SURVEY FORM FOR AGELAIUS TRICOLOR 2000-04-21
DFG04U0002	CALIFORNIA DEPARTMENT OF FISH & GAME - TRICOLORED BLACKBIRD BREEDING OBSERVATIONS 1980-2000, BIOS DS20. 2004-XX-XX
TRI14D0001	TRICOLORED BLACKBIRD PORTAL - ICE (UNIVERSITY OF CALIFORNIA, DAVIS) - 1907-2014 TRICOLORED BLACKBIRD RECORDS FROM UC DAVIS TRICOLORED BLACKBIRD PORTAL, INFORMATION CENTER FOR THE ENVIRONMENT (ICE) 2014-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 97566
Key Quad: Waukena (3611925)
Occurrence Number: 678
EO Index: 98888
Element Code: ABPBXB0020
Occurrence Last Updated: 2015-11-13

Scientific Name: *Agelaius tricolor*
Common Name: tricolored blackbird

Listing Status: **Federal:** None
State: Threatened
CNDDB Element Ranks: **Global:** G1G2
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_EN-Endangered
USFWS_BCC-Birds of Conservation Concern

General Habitat:

HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY AND VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro Habitat:

REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, AND FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Last Date Observed: 2000-04-21
Last Survey Date: 2014-04-21
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ABOUT 0.25 MI E OF KANSAS AVE & 5TH AVE INTERSECTION, 0.75 MI W OF KANSAS AVE & 4TH AVE INTXN, 7.7 MI N OF CORCORAN PO.

Detailed Location:

2000 COLONY LOCATION DESCRIBED AS "0.25 MI E OF JUNCTION OF KANSAS AVE AND 5TH AVE, 10 MI N OF CORCORAN." COLONY DATA STORED IN UC DAVIS TRICOLORED BLACKBIRD PORTAL; SITE NAME "KANSAS AVENUE."

Ecological:

WHEAT IN 2000; 1:3 M/F RATIO. DRY IN 2014.

Threats:

General:

ABOUT 6,000 BIRDS OBSERVED ON 21 APR 2000; 3,000 NESTING & 3,000 MILLING AND SITTING ABOUT IN THE VICINITY FROM MAINLY RECENTLY CUT FIELDS AND SOME DAIRIES. 0 OBSERVED ON 21 APR 2014.

PLSS: T20S, R22E, Sec. 12, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010371 E271440
Latitude/Longitude: 36.21120 / -119.54250
Elevation (feet): 235

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

DEH00F0002	DEHAVEN, R. - FIELD SURVEY FORM FOR AGELAIUS TRICOLOR 2000-04-21
DFG04U0002	CALIFORNIA DEPARTMENT OF FISH & GAME - TRICOLORED BLACKBIRD BREEDING OBSERVATIONS 1980-2000, BIOS DS20. 2004-XX-XX
TRI14D0001	TRICOLORED BLACKBIRD PORTAL - ICE (UNIVERSITY OF CALIFORNIA, DAVIS) - 1907-2014 TRICOLORED BLACKBIRD RECORDS FROM UC DAVIS TRICOLORED BLACKBIRD PORTAL, INFORMATION CENTER FOR THE ENVIRONMENT (ICE) 2014-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 68494
Key Quad: Hanford (3611936)
Occurrence Number: 37
EO Index: 68794
Element Code: AMACC05032
Occurrence Last Updated: 2007-06-27

Scientific Name: *Lasiurus cinereus*
Common Name: hoary bat

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G3G4
State: S4
Rare Plant Rank:
Other Lists: IUCN_LC-Least Concern

General Habitat:

PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER AND OPEN AREAS OR HABITAT EDGES FOR FEEDING.

Micro Habitat:

ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Last Date Observed: 1991-04-22
Last Survey Date: 1991-04-22
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

HANFORD.

Detailed Location:

MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY MANIS WITH UNCERTAINTY OF 30 M.

Ecological:

Threats:

General:

3 FEMALE SPECIMENS (MVZ #182406-182408) COLLECTED BY WILLIAM E. RAINEY ON 26 DEC 1990 AND 2 APR 1991.

PLSS: T18S, R21E, Sec. 25 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4024174 E262491
Latitude/Longitude: 36.33335 / -119.64614
Elevation (feet):

County Summary:

Kings

Quad Summary:

Hanford (3611936)

Sources:

MAN04S0029 MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF LASIURUS CINEREUS SPECIMENS FOR CALIFORNIA FROM MANIS. INCLUDES RECORDS FROM MVZ, CAS, MSB, LSU, KU, LACM, UWBM, FMNH AND TTU. 2004-12-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 66331
Key Quad: Traver (3611944)
Occurrence Number: 91
EO Index: 66424
Element Code: AMACD02011
Occurrence Last Updated: 2006-09-26

Scientific Name: *Eumops perotis californicus*
Common Name: western mastiff bat

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4G5T4
State: S3S4
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern

General Habitat:

MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER AND DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.

Micro Habitat:

ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.

Last Date Observed: 1899-03-01
Last Survey Date: 1899-03-01
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

TRAVER.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED IN THE GENERAL VICINITY OF TRAVER.

Ecological:

Threats:

General:

1 FEMALE SPECIMEN COLLECTED BY C.H.B. WRIGHT ON 1 MAR 1899, CAS #17445.

PLSS: T17S, R23E, Sec. 16 (M)
Accuracy: 3/5 mile
Area (acres): 0
UTM: Zone-11 N4037179 E277297
Latitude/Longitude: 36.45403 / -119.48506
Elevation (feet):

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

COC60A0001	COCKRUM, E.L. (UNIVERSITY OF ARIZONA) - DISTRIBUTION, HABITAT AND HABITS OF THE MASTIFF BAT, EUMOPS PEROTIS, IN NORTH AMERICA. 1960: JOURNAL OF THE ARIZONA ACADEMY OF SCIENCE, 1:79-84 1960-01-01
MAN04S0027	MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF EUMOPS PEROTIS CALIFORNICUS SPECIMEN RECORDS FROM MANIS. INCLUDES RECORDS FROM MVZ, CAS, TTU, ROM, LACM, KU, MSU AND FMNH. 2004-12-10
PIE98R0001	PIERSON, E. & W. RAINEY - DISTRIBUTION, HABITAT ASSOCIATIONS, STATUS AND SURVEY METHODOLOGIES FOR THREE MOLOSSID BAT SPECIES AND THE VESPERTILIONID. FINAL REPORT CAL FISH & GAME WILDLIFE MANAGEMENT DIVISION 1998-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14799
EO Index: 14608
Key Quad: Guernsey (3611926)
Element Code: AMAFD03152
Occurrence Number: 20
Occurrence Last Updated: 1989-08-10

Scientific Name: *Dipodomys nitratoides nitratoides*
Common Name: Tipton kangaroo rat

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3T1T2
State: S2

General Habitat:

SALTBRUSH SCRUB AND SINK SCRUB COMMUNITIES IN THE TULARE LAKE BASIN OF THE SOUTHERN SAN JOAQUIN VALLEY.

Micro Habitat:

NEEDS SOFT FRIABLE SOILS WHICH ESCAPE SEASONAL FLOODING. DIGS BURROWS IN ELEVATED SOIL MOUNDS AT BASES OF SHRUBS.

Last Date Observed: 1985-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-07-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ALL OF SECS 7 & 8 & HALF OF SECS 17 & 18, T20S, R21E. APPROX 5 MI ENE STRATFORD.

Detailed Location:

APPROXIMATELY 25 BURROWS PER HA OBSERVED.

Ecological:

HABITAT IS APPROXIMATELY 615 HA OF IODINE BUSH AND ATRIPLEX SPINIFERA SHRUB HABITATS, AND SOME GRASSLAND HABITAT. AREA INCLUDES A PERCOLATION BASIN AND SOME PREVIOUSLY CULTIVATED LAND.

Threats:

General:

SITE #2 (WILLIAMS 1985).

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: specific area
Area (acres): 1,865
UTM: Zone-11 N4009578 E254866
Latitude/Longitude: 36.20000 / -119.72644
Elevation (feet): 215

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

WIL85R0001 WILLIAMS, D.F. - A REVIEW OF THE POPULATIONS STATUS OF THE TIPTON KANGAROO RAT, DIPODOMYS NITRATOIDES - FINAL REPORT USFWS ORDER NO. 10181-4861 (TS), 84 SE-0020-4 1985-12-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14894
EO Index: 14607
Key Quad: Guernsey (3611926)
Element Code: AMAFD03152
Occurrence Number: 21
Occurrence Last Updated: 1998-09-15

Scientific Name: *Dipodomys nitratoides nitratoides*
Common Name: Tipton kangaroo rat

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3T1T2
State: S2

General Habitat:
SALTBRUSH SCRUB AND SINK SCRUB COMMUNITIES IN THE TULARE LAKE BASIN OF THE SOUTHERN SAN JOAQUIN VALLEY.

Micro Habitat:
NEEDS SOFT FRIABLE SOILS WHICH ESCAPE SEASONAL FLOODING. DIGS BURROWS IN ELEVATED SOIL MOUNDS AT BASES OF SHRUBS.

Last Date Observed: 1985-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-07-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
APPROX 8 MILES ENE OF STRATFORD.

Detailed Location:
ALL OF SECS 10 & 11 & PORTIONS OF SECS 12,14 & 15.

Ecological:
HABITAT IS APPROXIMATELY 400 HA OF IODINE BUSH SHRUB AND SHRUB-MARSH ECOTONE. AREA INCLUDES PERCOLATION BASINS.

Threats:
AREA IS HEAVILY GRAZED BY DAIRY CATTLE. HOMES NEARBY.

General:
SITE #3 (WILLIAMS 1985). APPROXIMATELY 20 BURROWS PER HA OBSERVED.

PLSS: T20S, R21E, Sec. 11 (M)
Accuracy: non-specific area
Area (acres): 1,758
UTM: Zone-11 N4009643 E259811
Latitude/Longitude: 36.20183 / -119.67151
Elevation (feet): 215

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

WIL85R0001 WILLIAMS, D.F. - A REVIEW OF THE POPULATIONS STATUS OF THE TIPTON KANGAROO RAT, DIPODOMYS NITRATOIDES - FINAL REPORT USFWS ORDER NO. 10181-4861 (TS), 84 SE-0020-4 1985-12-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 55307
EO Index: 55307
Key Quad: Traver (3611944)
Element Code: AMAJA03041
Occurrence Number: 150
Occurrence Last Updated: 2004-05-03

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2003-08-08
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2003-08-08
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTHEAST OF GOSHEN, 600 FT SW OF THE INTERSECTION OF J19 (AKA ROAD 80) & J34 (AKA AVE 328).

Detailed Location:

UTM COORDINATES AND MAP DO NOT INDICATE THE SAME LOCATION. USED THE MAP TO PLOT THE SIGHTING. ALSO LOCATION CONFIRMED BY E-MAIL.

Ecological:

IRRIGATED ALFALFA, BURROWING OWLS WERE IN THE AREA.

Threats:

DOGS & COYOTES.

General:

2003: 08/08/2003 ONE ADULT SIGHTED FORAGING IN FRESHLY CUT ALFALFA FIELD AT 22:30, ABOUT 600 FEET SW OF THE INTERSECTION.

PLSS: T18S, R24E, Sec. 08, SE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4029131 E285037
Latitude/Longitude: 36.38330 / -119.39653
Elevation (feet): 300

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

VIS03F0001	VISGER, G. (VISGER AND ASSOCIATES, INC.) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2003-08-08
VIS04U0001	VISGER, G. (VISGER AND ASSOCIATES, INC.) - E-MAIL TO C. REINER REGARDING VULPES MACROTIS MUTICA 2004-04-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	55674	**EO Index:**	55674
Key Quad:	Guernsey (3611926)	**Element Code:**	AMAJA03041
Occurrence Number:	191	**Occurrence Last Updated:**	2004-05-27

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: Threatened **Other Lists:**

CNDDB Element Ranks: **Global:** G4T2

State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed:	1989-06-23	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1989-06-23	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

6.5 MI SSE OF LEMORE, NE CORNER OF KANSAS AVE & 16TH AVE, WEST OF JACOBS SLOUGH.

Detailed Location:

Ecological:

HIGHLY DISTURBED ANNUAL GRASSLAND. DIPODOMYS NITRATOIDES REPORTED IN THE AREA, SURROUNDING LAND USE IS AGRICULTURE AND "NATURAL" LAND.

Threats:

DRAINAGE DITCHES; POSSIBLE FUTURE CULTIVATION OR TURKEY RANCH.

General:

6/23/1989: ONE FOX SIGHTED OF UNKNOWN AGE.

PLSS:	T20S, R21E, Sec. 06, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	41
UTM:	Zone-11 N4011059 E253496	**Latitude/Longitude:**	36.21299 / -119.74212	**Elevation (feet):**	200

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

WIL89F0012	WILLIAMS, D. (CALIFORNIA STATE UNIVERSITY, STANISLAUS) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 1989-06-23

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 66338
EO Index: 66435
Key Quad: Hanford (3611936)
Element Code: AMAJA03041
Occurrence Number: 214
Occurrence Last Updated: 2012-11-30

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2000-08-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-08-15
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF SAND SLOUGH, S OF HOUSTON AVE JUST WEST OF 11TH AVENUE, ABOUT 2.3 MI SSW OF HANFORD PO.

Detailed Location:

MAPPED TO PROVIDED TRS FOR 2000: NW1/4 OF NE1/4 SEC 11.

Ecological:

OBSERVED IN A WALNUT ORCHARD IN 2000. SOUTH SIDE OF HOUSTON STILL APPEARS TO BE AN ORCHARD IN 2010 AERIALS. SAND SLOUGH (SLIGHTLY DISCONTINUOUS NORTH & SOUTH OF ROAD) MAY PROVIDE SOME NATURAL COVER/HABITAT.

Threats:

General:

1 ADULT WAS OBSERVED IN A WALNUT ORCHARD ON 15 AUG 2000.

PLSS: T19S, R21E, Sec. 11, NE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4020033 E261033
Latitude/Longitude: 36.29570 / -119.66111
Elevation (feet): 235

County Summary:	Quad Summary:
Kings	Hanford (3611936)

Sources:

GRA00F0013 GRAY, G. & P. STURM - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2000-08-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67129
EO Index: 67279
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 454
Occurrence Last Updated: 2006-12-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1.4 MI ENE OF 17TH AVE & KANSAS AVE, W OF JACOBS SLOUGH.

Detailed Location:

Ecological:

VALLEY SINK SCRUB.

Threats:

General:

KIT FOX OR DEN OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 06, NW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4011899 E253775
Latitude/Longitude: 36.22063 / -119.73929
Elevation (feet): 220

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

CEC88M0001 CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67130
EO Index: 67280
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 455
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
NW OF PERCOLATION BASINS, 0.9 MI NE OF INTERSECTION OF 16TH & LAUREL AVE.

Detailed Location:

Ecological:
VALLEY SINK SCRUB.

Threats:

General:
SIGHTING IN VICINITY SOMETIME FROM 1972 THROUGH JUL 1975. KIT FOX OR SCAT OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4009271 E254288
Latitude/Longitude: 36.19709 / -119.73276
Elevation (feet): 220

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

CEC88M0001	CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX
MOR75M0001	MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67131
EO Index: 67281
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 456
Occurrence Last Updated: 2006-12-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
W OF PERCOLATION BASINS, ABOUT 1.5 MI NE OF INTERSECTION OF LAKEVIEW & 16TH AVE.

Detailed Location:

Ecological:
VALLEY SINK SCRUB.

Threats:

General:
KIT FOX OR SCAT OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 17, SW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4007913 E255287
Latitude/Longitude: 36.18511 / -119.72124
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
CEC88M0001 CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67378
EO Index: 67546
Key Quad: Traver (3611944)
Element Code: AMAJA03041
Occurrence Number: 619
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1971-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1971-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 4.7 MI NNE OF GOSHEN, JUST N OF ST. JOHNS RIVER.

Detailed Location:

Ecological:

Threats:

General:
KIT FOX OBSERVATION(S) IN 1971. SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

PLSS: T17S, R24E, Sec. 29 (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4032754 E285070
Latitude/Longitude: 36.41594 / -119.39717
Elevation (feet): 290

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67379
Key Quad: Goshen (3611934)
Occurrence Number: 620
EO Index: 67547
Element Code: AMAJA03041
Occurrence Last Updated: 2006-12-13

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX
Last Survey Date: 1973-XX-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
INTERSECTION OF HWY 198 AND TULARE/KINGS COUNTY LINE.

Detailed Location:

Ecological:

Threats:

General:
KIT FOX OBSERVATION(S) IN 1973.

PLSS: T18S, R23E, Sec. 27 (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4023230 E277822
Latitude/Longitude: 36.32851 / -119.47521
Elevation (feet): 270

County Summary:	Quad Summary:
Kings, Tulare	Goshen (3611934)

Sources:

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67392
EO Index: 67562
Key Quad: Taylor Weir (3611914)
Element Code: AMAJA03041
Occurrence Number: 630
Occurrence Last Updated: 2007-01-23

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI SSW OF TULARE, SE OF INTERSECTION OF OCTOL AVE (AVE 184) AND ELK BAYOU AVE (ROAD 80).

Detailed Location:

Ecological:

Threats:
TRAFFIC.

General:
ROAD KILL OBSERVED IN 1973. ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R24E, Sec. 09 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N3999907 E285305
Latitude/Longitude: 36.12012 / -119.38552
Elevation (feet): 250

County Summary:
Tulare

Quad Summary:
Taylor Weir (3611914), Paige (3611924)

Sources:

MOR75M0001	MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001	SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67784
EO Index: 67936
Key Quad: Goshen (3611934)
Element Code: AMAJA03041
Occurrence Number: 907
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 1.7 MI NE OF GOSHEN, NEAR INTERSECTION OF ALLISON RD AND MODOC DITCH.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R24E, Sec. 17 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4026939 E285097
Latitude/Longitude: 36.36357 / -119.39525
Elevation (feet): 300

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67792
EO Index: 67945
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 914
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 4.3 MI NW OF CORCORAN, JUST S OF WHERE GUIBERSON CANAL MEETS CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
DEN OBSERVED SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R22E, Sec. 06 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4001805 E263624
Latitude/Longitude: 36.13218 / -119.62678
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Waukena (3611925), Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67793
EO Index: 67946
Key Quad: Waukena (3611925)
Element Code: AMAJA03041
Occurrence Number: 915
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI N OF CORCORAN, 1.4 MI S OF INTERSECTION OF 6TH & KANSAS AVE, NEAR LAKELAND CANAL.

Detailed Location:

Ecological:

Threats:

General:
DEN OBSERVED SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R22E, Sec. 15 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4008242 E269173
Latitude/Longitude: 36.19148 / -119.56706
Elevation (feet): 220

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67795
EO Index: 67947
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 916
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.7 MI ESE OF STRATFORD, 0.9 MI NE OF INTERSECTION OF MANTECA AVE & 14 1/2 AVE.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R21E, Sec. 28 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4005515 E256396
Latitude/Longitude: 36.16379 / -119.70817
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67798
EO Index: 67948
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 917
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.5 MI ENE OF STRATFORD, ON KENT AVE & 14TH AVE NEAR THEIR INTERSECTION.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING, ROAD KILL OR DEN PRIOR TO 1972. SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R21E, Sec. 05 (M)
Accuracy: non-specific area
Area (acres): 531
UTM: Zone-11 N4011656 E255906
Latitude/Longitude: 36.21898 / -119.71552
Elevation (feet): 220

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67799
EO Index: 67949
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 918
Occurrence Last Updated: 2007-02-22

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 9.8 MILES NW OF CORCORAN, NW OF GUERNSEY, NORTH OF KANSAS AVE AND WEST OF 10TH AVE.

Detailed Location:

Ecological:

Threats:

General:
TWO DENS AND ONE FOX SIGHTING AT THE DEN SOMETIME FROM 1972 THROUGH JULY 1975.

PLSS: T20S, R21E, Sec. 02 (M)
Accuracy: non-specific area
Area (acres): 895
UTM: Zone-11 N4011343 E260989
Latitude/Longitude: 36.21743 / -119.65894
Elevation (feet): 220

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67800
EO Index: 67952
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 919
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6 MI S OF HANFORD, JUST NW OF INTERSECTION OF JERSEY AVE AND 10TH AVE.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T19S, R21E, Sec. 25 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4014557 E262661
Latitude/Longitude: 36.24678 / -119.64132
Elevation (feet): 230

County Summary:
Kings

Quad Summary:
Guernsey (3611926), Hanford (3611936)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67801
EO Index: 67953
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 920
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 7 MI SE OF HANFORD, W OF INTERSECTION OF IDAHO AVE AND 5TH AVE, IN THE VICINITY OF CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T19S, R22E, Sec. 23 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4016852 E270729
Latitude/Longitude: 36.26940 / -119.55229
Elevation (feet): 240

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67804
EO Index: 67954
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 921
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI E OF HANFORD ON LACEY BLVD AT INTERSECTION WITH HIGHLINE CANAL.

Detailed Location:

Ecological:

Threats:

General:
ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R23E, Sec. 31 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4023137 E273025
Latitude/Longitude: 36.32655 / -119.52858
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67805
EO Index: 67955
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 922
Occurrence Last Updated: 2007-02-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1971-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1971-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
JUST E OF HANFORD, JUST SW OF INTERSECTION OF HWY 198 AND 9 1/4 AVE. NORTH OF HANFORD MUNICIPAL AIRPORT.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

PLSS: T18S, R22E, Sec. 31 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4023304 E264304
Latitude/Longitude: 36.32597 / -119.62570
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935), Hanford (3611936)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67806
EO Index: 67956
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 923
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 5.8 MI ENE OF HANFORD, 0.7 MI NE OF INTERSECTION OF 5TH AVE AND GRANGEVILLE BLVD.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R22E, Sec. 24 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4026024 E272037
Latitude/Longitude: 36.35232 / -119.54042
Elevation (feet): 260

County Summary:	Quad Summary:
Kings	Remnoy (3611935)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67807
EO Index: 67957
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 924
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 8.3 MI ENE OF HANFORD & 4.7 MI NW OF GOSHEN, NEAR EAST BRANCH CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R23E, Sec. 08 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4028199 E275554
Latitude/Longitude: 36.37274 / -119.50189
Elevation (feet): 260

County Summary:
Kings

Quad Summary:
Goshen (3611934), Remnoy (3611935), Traver (3611944), Burris Park (3611945)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67808
EO Index: 67958
Key Quad: Laton (3611946)
Element Code: AMAJA03041
Occurrence Number: 925
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 2.5 MI SE OF LATON, 0.6 MI N OF INTERSECTION OF 11TH AVE AND EXCELSIOR AVE & S OF THE KINGS RIVER.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T17S, R21E, Sec. 36 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4032746 E262090
Latitude/Longitude: 36.41045 / -119.65323
Elevation (feet):

County Summary:
Kings

Quad Summary:
Laton (3611946)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67809
EO Index: 67959
Key Quad: Laton (3611946)
Element Code: AMAJA03041
Occurrence Number: 926
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 3.5 MI NNW OF LATON, JUST SW OF INTERSECTION OF CLOVIS AVE & ATCHISON TOPEKA AND SANTA FE RR.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T17S, R21E, Sec. 05 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4040635 E257116
Latitude/Longitude: 36.48025 / -119.71111
Elevation (feet): 260

County Summary:
Fresno

Quad Summary:
Laton (3611946)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 69175
EO Index: 69953
Key Quad: Hanford (3611936)
Element Code: AMAJA03041
Occurrence Number: 1101
Occurrence Last Updated: 2007-05-07

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2006-06-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-06-12
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

NW OF HANFORD, EAST OF KINGS ROAD, NORTH OF GRANGEVILLE ROAD AND WEST OF RAILROAD TRACKS.

Detailed Location:

FOX OBSERVED IN AN UNDEVELOPED 15.26 ACRE PARCEL.

Ecological:

Threats:

General:

1 INDIVIDUAL OBSERVED ON 12 JUN 2006.

PLSS: T18S, R21E, Sec. 23, SW (M)
Accuracy: non-specific area
Area (acres): 35
UTM: Zone-11 N4025460 E260863
Latitude/Longitude: 36.34453 / -119.66465
Elevation (feet): 250

County Summary:	Quad Summary:
Kings	Hanford (3611936)

Sources:

SHE06F0001	SHERMAN, M. (KINGS COUNTY PLANNING AGENCY) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2006-06-12
SLO07U0001	BRIDEN, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE-BAY DELTA DIVISION) - E-MAIL REGARDING LOCATION OF SIGHTING OF SHE06F0001 2007-05-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32770
EO Index: 676
Key Quad: Guernsey (3611926)
Element Code: ARAAD02030
Occurrence Number: 10
Occurrence Last Updated: 1996-01-08

Scientific Name: *Emys marmorata*
Common Name: western pond turtle

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable
USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G3G4
State: S3

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS AND IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEEDS BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed: XXXX-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: XXXX-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

10.5 MILES EAST OF STRATFORD; W OF GUERNSEY; SOUTHWEST CORNER OF KANSAS AVENUE X TENTH AVENUE.

Detailed Location:

Ecological:

Threats:

General:

COLLECTION MADE BY CALIF. DEPT. OF FISH AND GAME, DATE AND NUMBER OF SPECIMENS UNKNOWN.

PLSS: T20S, R21E, Sec. 12, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010287 E261804
Latitude/Longitude: 36.20812 / -119.64957
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

BRA88R0001 BRATTSTROM, B. & D. MESSER - CURRENT STATUS OF THE SOUTHWESTERN POND TURTLE, CLEMMYS MARMORATA PALLIDA, IN SOUTHERN CALLIFORNIA. REPORT TO CALIFORNIA DEPARTMENT OF FISH AND GAME. 1988-XX-XX

HOL88U0002 HOLLAND, D. (UNIVERSITY OF SOUTHWESTERN LOUISIANA) - LIST OF DOCUMENTED CLEMMYS MARMORATA LOCALITIES 1988-03-23

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40283
EO Index: 35290
Key Quad: Stratford (3611927)
Element Code: ARAAD02030
Occurrence Number: 141
Occurrence Last Updated: 1998-12-02

Scientific Name: *Emys marmorata*
Common Name: western pond turtle

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G3G4
State: S3
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable
USFS_S-Sensitive

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS AND IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEEDS BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed: 1998-04-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-04-27
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

MUSSEL SLOUGH, ON SANTA ROSA RANCHERIA, 5 MILES NE OF STRATFORD.

Detailed Location:

MUSSEL SLOUGH IS A CLOSED SYSTEM, CUT OFF FROM OUTLET BY AGRICULTURAL FILLS NORTH AND SOUTH OF THE SLOUGH.

Ecological:

HABITAT CONSISTS OF A STAGNANT SLOUGH, CONTAINING LARGE AND SMALL MOUTH BASS, GREEN SUNFISH, AND MOSQUITOFISH.

Threats:

POSSIBLE THREAT FROM PROPOSAL TO RESTORE FLOW TO THE SLOUGH, WHICH MAY REQUIRE DREDGING.

General:

2 ADULTS OBSERVED ON 27 APRIL 1998.

PLSS: T19S, R20E, Sec. 36, NE (M)
Accuracy: specific area
Area (acres): 76
UTM: Zone-11 N4013278 E252549
Latitude/Longitude: 36.23273 / -119.75335
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926), Stratford (3611927)

Sources:

LYN98F0003 LYNCH, S. & G. MONK (MONK AND ASSOCIATES, INC.) - FIELD SURVEY FORM FOR CLEMMYS MARMORATA 1998-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 39951
EO Index: 34953
Key Quad: Guernsey (3611926)
Element Code: ARACF07010
Occurrence Number: 268
Occurrence Last Updated: 1998-10-15

Scientific Name: *Gambelia sila*
Common Name: blunt-nosed leopard lizard

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: CDFW_FP-Fully Protected
IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G1
State: S2

General Habitat:

RESIDENT OF SPARSELY VEGETATED ALKALI AND DESERT SCRUB HABITATS, IN AREAS OF LOW TOPOGRAPHIC RELIEF.

Micro Habitat:

SEEKS COVER IN MAMMAL BURROWS, UNDER SHRUBS OR STRUCTURES SUCH AS FENCE POSTS; THEY DO NOT EXCAVATE THEIR OWN BURROWS.

Last Date Observed: 1990-04-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1990-04-27
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTH SIDE OF KANSAS AVENUE, WEST SIDE OF 14TH AVENUE. 7 MILES EAST OF STRATFORD.

Detailed Location:

Ecological:

HABITAT CONSISTS OF GRAZED VALLEY SINK SCRUB; DOMINANTS INCLUDE SUAEDA FRUTICOSA AND ALLENROLFEA OCCIDENTALIS. ALTHOUGH THE SITE IS BEING ADVERSELY IMPACTED FROM GRAZING, THE VEGETATION IS IN GOOD CONDITION.

Threats:

THREATENED BY GRAZING.

General:

2 ADULTS (1 MALE, 1 FEMALE) OBSERVED ON 27 APRIL 1990.

PLSS: T20S, R21E, Sec. 05, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4011051 E256260
Latitude/Longitude: 36.21362 / -119.71140
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

LAU90F0001 LAUGHLIN, T. - FIELD SURVEY FORM FOR GAMBELIA SILA (=SILUS) 1990-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 15270
EO Index: 8665
Key Quad: Goshen (3611934)
Element Code: CTT42120CA
Occurrence Number: 12
Occurrence Last Updated: 1998-07-14

Scientific Name: *Valley Sacaton Grassland*
Common Name: Valley Sacaton Grassland

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1.1

General Habitat:

Micro Habitat:

Last Date Observed: 1985-03-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-03-12
Occurrence Rank: Poor
Owner/Manager: PVT
Trend: Decreasing
Presence: Presumed Extant

Location:

CROSS CREEK NORTH OF HWY 198, ABOUT 3 MILES WEST OF HWY 99 VIA AVE 328 & DIRT ROAD CONNECTING TO 320.

Detailed Location:

Ecological:

HEAVILY GRAZED W/ VERY FEW SPOROBOLUS & SOME DEGRADED VERNAL POOLS, DISTICHLIS, HORDEUM, ERODIUM, ELYMUS DOM. LOW DIVERSITY, LOW NATIVE COVER. POOLS W/ MYOSURUS, LASTHENIA GLABRATA, JUNCUS, LEPIDIUM, PLAGIOBOTHRYS.

Threats:

GRAZING HAS DISTURBED THIS SITE.

General:

SEE HTTPS://WILDLIFE.CA.GOV/DATA/VEGCAMP/NATURAL-COMMUNITIES TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T18S, R23E, Sec. 16, NW (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4027618 E276472
Latitude/Longitude: 36.36772 / -119.49151
Elevation (feet): 260

County Summary:

Kings, Tulare

Quad Summary:

Goshen (3611934), Remnoy (3611935), Traver (3611944), Burris Park (3611945)

Sources:

BIT85F0016 BITTMAN, R. ET AL. - FIELD SURVEY FORM FOR VALLEY SACATON GRASSLAND 1985-03-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 15328
EO Index: 26434
Key Quad: Traver (3611944)
Element Code: CTT44120CA
Occurrence Number: 10
Occurrence Last Updated: 1998-07-15

Scientific Name: *Northern Claypan Vernal Pool*
Common Name: Northern Claypan Vernal Pool

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1.1

General Habitat:

Micro Habitat:

Last Date Observed: 1983-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1983-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

CROSS CREEK VERNAL POOLS. NEAR HWY 99 & ALONG CROSS CREEK 4 MILES NORTH OF GOSHEN. BOTH SIDES OF HWY.

Detailed Location:

CATTLE GRAZING SITE. IRRIGATED BARLEY SURROUNDS.

Ecological:

ANASTOMOSING POOLS ON CREEK FLOOD PLAIN. PROFUSE DOWNINGIA BELLA, LASTHENIA FREMONTII. GRASSLAND OF HORDEUM DEPRESSUM & DISTICHLIS. ELYMUS ALONG EPHEMERAL WATER WAYS (1980).

Threats:

General:

UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO. SEE HTTPS://WILDLIFE.CA.GOV/DATA/VEGCAMP/NATURAL-COMMUNITIES TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T17S, R23E, Sec. 34, SE (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4031608 E279616
Latitude/Longitude: 36.40439 / -119.45762
Elevation (feet): 270

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

GRI80F0022 GRIGGS, T. - FIELD SURVEY FORM FOR VERNAL POOLS ALONG CROSS CREEK, TULARE COUNTY 1980-04-27

WER83U0001 WERSCHKULL, G. & T. GRIGGS - NDDB PRINTOUT WITH ANNOTATIONS FROM 1983 FIELD OBSERVATIONS. 1983-06-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32735
EO Index: 17486
Key Quad: Traver (3611944)
Element Code: ICBRA03030
Occurrence Number: 110
Occurrence Last Updated: 1995-12-15

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
State: None
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 1992-02-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1992-02-22
Occurrence Rank: Unknown
Owner/Manager: PVT-HARRELL
Trend: Unknown
Presence: Presumed Extant

Location:

ESE OF TRAVER; 0.4 KM NW OF ROAD 80 AT COTTONWOOD CREEK.

Detailed Location:

HARRELL PROPERTY.

Ecological:

NATURAL POOL (SALTGRASS); 12 INCHES DEEP AT GREATEST DEPTH, PH=6.5.

Threats:

GRAZING (IN MIDST OF PRIME DAIRY DEVELOPMENT AREA); DEVELOPMENT (PROPOSAL FOR MODEL AIRCRAFT FIELD AS OF 1992).

General:

1 FEMALE (APPROX 16 MM IN LENGTH) OBSERVED BY R. HANSEN AND K. KIRKPATRICK; AMBYSTOMA CALIFORNIENSE OBSERVED NEAR SITE.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4034868 E285123
Latitude/Longitude: 36.43500 / -119.39716
Elevation (feet): 285

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

WOO92R0001 WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR 8 TARGET SPECIES IN TULARE COUNTY (APPENDICES) 1992-09-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	32737	**EO Index:**	17096
Key Quad:	Goshen (3611934)	**Element Code:**	ICBRA03030
Occurrence Number:	111	**Occurrence Last Updated:**	2015-01-14

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	1995-02-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1995-02-09	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.4 MILE NW OF THE INTERSECTION OF W GOSHEN AVENUE (ROAD J32) AND PLAZA DRIVE (ROAD J19), GOSHEN, WEST OF VISALIA.

Detailed Location:

MAPPED TO LOCATION GIVEN FOR OCCUPIED POOL ON JACUZZI PROPERTY, IN 1992 REPORT. SPECIMEN LOCALITY GIVEN ONLY AS "0.5 MI E OF GOSHEN CITY, T18S, R24E, S20, SW1/4;" ATTRIBUTED HERE.

Ecological:

NATIVE TOPOGRAPHY IN VACANT LOT; POOL WAS 9 INCHES DEEP; PH=6; FENCELINE OF LOT WAS DISKED; SURVEY MARKERS PRESENT.

Threats:

PROPOSED LAND CONVERSION; HISTORIC GRAZING.

General:

1 MALE BRANCHINECTA OBSERVED BY R. HANSEN AND K. KIRKPATRICK, 22 FEB 1992. 40 B. LYNCHI COLLECTED ON 6 FEB 1995 (CASIZ #103005 -103014). ANOTHER 30 COLLECTED 23 FEB-27 MAR 1995 (CASIZ #103290 & 11 OTHERS).

PLSS:	T18S, R24E, Sec. 20, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4024937 E284641	**Latitude/Longitude:**	36.34544 / -119.39978	**Elevation (feet):**	290

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

AVE95S0007	AVERY, S. - CASIZ #103005, 103006, 103007, 103008, 103009, 103010, 103011, 103012,103013, & 103014, COLLECTED "0.5 MI E OF GOSHEN CITY." 1995-02-06
GAN95S0003	GANZ, H. - CASIZ #103290, 103291, 103295, 103300, 103303, 103307, 103308, 103309, 103324, 103328, 103331, & 103334, COLLECTED "DUE EAST OF GOSHEN, 1 MILE EAST OF STATE HIGHWAY 99." 1995-03-27
WOO92R0001	WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR 8 TARGET SPECIES IN TULARE COUNTY (APPENDICES) 1992-09-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32752
EO Index: 18594
Key Quad: Traver (3611944)
Element Code: ICBRA03030
Occurrence Number: 113
Occurrence Last Updated: 1996-01-29

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
State: None
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 1993-01-09
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1993-01-09
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SSE OF TRAVER; APPROXIMATELY 1.0 KM NORTH OF HIGHWAY 99 AT CROSS CREEK.

Detailed Location:

Ecological:

POOL A: SLIGHT TURBIDITY, 10 X 30 M. POOL B: SLIGHT TURBIDITY, 10 X 50 M. POOL C: VERY TURBID, 10 X 50 M. ALL POOLS 54 DEGREES FAHRENHEIT.

Threats:

CURRENT LAND USE: CATTLE GRAZING; THREATS INCLUDE DEVELOPMENT OR HABITAT CONVERSION.

General:

B. LYNCHI OBSERVED BY G. AND K. KIRKPATRICK, AND R. HANSEN.

PLSS: T17S, R23E, Sec. 35, NW (M)
Accuracy: specific area
Area (acres): 15
UTM: Zone-11 N4032699 E279792
Latitude/Longitude: 36.41425 / -119.45597
Elevation (feet): 270

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

WOO93R0002 WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR VERNAL POOL FAIRY SHRIMP (BRANCHINECTA LYNCHI) IN TULARE COUNTY, CALIFORNIA. 1993-09-28

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 41569
EO Index: 41569
Key Quad: Burris Park (3611945)
Element Code: ICBRA03030
Occurrence Number: 206
Occurrence Last Updated: 2017-10-04

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
Rare Plant Rank:
State: None
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF CROSS CREEK, 1.8 MI SE OF 4TH AVE AT EXCELSIOR AVE & 3.6 MI WSW OF HWY 99 AT AVE 328, SW OF BURRIS PARK.

Detailed Location:

1999: MAPPED TO LOCATION PROVIDED FOR VERNAL POOL(S) IN AREA "B" (NORTHMOST POLYGON). 2017: MAPPED TO SPECIFIC LOCATIONS GIVEN FOR OCCUPIED POOLS (SOUTHMOST POLYGONS).

Ecological:

VERNAL POOLS IN GRAZED, NON-NATIVE GRASSLAND. PROPERTIES BEING CONSIDERED AS MITIGATION LANDS FOR HIGH SPEED RAIL AUTHORITY IN 2017.

Threats:

DEVELOPMENT TO FARMLAND (1999).

General:

HUNDREDS OBSERVED HERE AND IN AREA "A" (OCCURRENCE #207); 64 COLLECTED 21 FEB-14 MAR 1999 (CASIZ #122186-122193). BRANCHINECTA CYSTS FOUND DURING 2016 DRY SEASON SURVEYS. FOUND IN 56 POOLS THROUGHOUT PROPERTY IN 2017; 12 POOLS MAPPED HERE.

PLSS: T18S, R23E, Sec. 8, SW (M)
Accuracy: non-specific area
Area (acres): 59
UTM: Zone-11 N4028817 E274975
Latitude/Longitude: 36.37817 / -119.50853
Elevation (feet): 261

County Summary:

Kings

Quad Summary:

Remnoy (3611935), Burris Park (3611945)

Sources:

HAL99F0003	HALSTEAD, J. & P. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 1999-03-04
HAL99S0013	HALSTEAD, J. - CASIZ #122186, 122187, 122188, 122189, 122190, 122191, 122192, & 122193, COLLECTED "12 MI NW VISALIA, SECTIONS 4& 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-02-22
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41571	**EO Index:**	41571
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	207	**Occurrence Last Updated:**	2017-10-04

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, ABOUT 1.5-2.1 MI SW OF RD 44 AT AVE 352 & 2.3-2.7 MI NW OF HWY 99 AT AVE 328, NW OF VISALIA.

Detailed Location:

1999: DETECTED IN VERNAL POOL(S) IN AREA "A." MAPPED TO SPECIFIC LOCATIONS GIVEN FOR OCCUPIED POOLS IN 2017.

Ecological:

VERNAL POOLS IN GRAZED, NON-NATIVE GRASSLAND. 2017: PROPERTIES BEING CONSIDERED AS MITIGATION LANDS FOR HIGH SPEED RAIL AUTHORITY.

Threats:

CONVERSION TO FARMLAND (1999).

General:

HUNDREDS OBSERVED HERE AND IN AREA "B" (OCCURRENCE #206); 64 COLLECTED 21 FEB-14 MAR 1999 (CASIZ #122186-122193). BRANCHINECTA CYSTS DETECTED DURING DRY SEASON SURVEYS IN 2016. ADULTS FOUND IN 56 POOLS IN 2017 SURVEYS, 12 POOLS MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, SW (M)	**Accuracy:**	specific area	**Area (acres):**	52
UTM:	Zone-11 N4030509 E276762	**Latitude/Longitude:**	36.39382 / -119.48911	**Elevation (feet):**	264

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

HAL99F0004	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 1999-03-04
HAL99S0013	HALSTEAD, J. - CASIZ #122186, 122187, 122188, 122189, 122190, 122191, 122192, & 122193, COLLECTED "12 MI NW VISALIA, SECTIONS 4& 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-02-22
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43430	**EO Index:**	43430
Key Quad:	Waukena (3611925)	**Element Code:**	ICBRA03030
Occurrence Number:	248	**Occurrence Last Updated:**	2014-10-24

Scientific Name: *Branchinecta lynchi*

Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened

State: None

Rare Plant Rank:

Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2000-03-11	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2000-03-11	**Occurrence Rank:**	Poor
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.7 MILE WNW OF ROAD 28 AT AVENUE 208 AND 2.2 MILES NNW OF WAUKENA; 10 MI WSW OF TULARE.

Detailed Location:

RAVISCIONI FARMS PROPERTY. MUSEUM SPECIMEN WITH LOCALITY "10 MI W TULARE, SECTION 19, TOWNSHIP 20S, RANGE 23E" ATTRIBUTED HERE.

Ecological:

NATIVE ANNUAL GRASSLAND/DRYLAND PASTURE WITH VERNAL POOLS TO THE WEST. AGRICULTURE (IRRIGATED CROPLAND) TO THE EAST, NORTH AND SOUTH.

Threats:

FARMLAND CONVERSION.

General:

HUNDREDS OF INDIVIDUALS OBSERVED, 11 MAR 2000; 22 COLLECTED AND DEPOSITED IN CAS (CASIZ #150391).

PLSS:	T20S, R23E, Sec. 19, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	22
UTM:	Zone-11 N4005707 E273086	**Latitude/Longitude:**	36.16958 / -119.52286	**Elevation (feet):**	227

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

HAL00F0001	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 2000-03-11
HAL00S0020	HALSTEAD, J. - CASIZ #150391, COLLECTED "10 MI W TULARE, SECTION 19, TOWNSHIP 20S, RANGE 23E" 2000-03-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6723	**EO Index:**	108492
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	911	**Occurrence Last Updated:**	2017-10-18

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, FROM 1.6 MI NNW-1.9 MI NW OF HWY 99 AT AVE 328 & 2.25 MI SSE OF RD 36 AT AVE 352, NW OF VISALIA

Detailed Location:

MAPPED TO PROVIDED MAPS.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

BRANCHINECTA CYSTS DETECTED DURING 2016 DRY SEASON SAMPLING. ADULTS FOUND IN 56 POOLS ACROSS PROPERTY IN 2017; 31 MAPPED HERE.

PLSS:	T17S, R23E, Sec. 34, SE (M)	**Accuracy:**	specific area	**Area (acres):**	86
UTM:	Zone-11 N4031342 E279102	**Latitude/Longitude:**	36.40187 / -119.46327	**Elevation (feet):**	272

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6724	**EO Index:**	108493
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	912	**Occurrence Last Updated:**	2017-10-19

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, 2.0 MI NW OF HWY 99 AT AVE 328 & 1.8 MI SSE OF RD 44 AT AVE 352, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAPS.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

BRANCHINECTA CYSTS DETECTED DURING 2016 DRY SEASON SAMPLING. ADULTS FOUND IN 56 POOLS ACROSS PROPERTY IN 2017; 1 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4030338 E277665	**Latitude/Longitude:**	36.39249 / -119.479	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5572
Key Quad: Traver (3611944)
Occurrence Number: 492
EO Index: 118542
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

PROPERTY ON WEST SIDE OF HWY 99 AT CROSS CREEK, FROM HWY 99 TO ABOUT 2 MILES WEST, 4.75 MILES NNW OF GOSHEN.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W- 30, 51, 65, 101, 131, 135, 144, 182, 192, 241, 315, 319, 331, 350, 432, 464, 469, 476, 493, 511, 535, 541, 542, 564.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016)

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (24 MAPPED HERE, SEE ALSO EO #493, 494, & 495).

PLSS: T18S, R23E, Sec. 3 (M)
Accuracy: specific area
Area (acres): 208

UTM: Zone-11 N4031208 E279046
Latitude/Longitude: 36.40065 / -119.46387
Elevation (feet): 271

County Summary:

Kings, Tulare

Quad Summary:

Traver (3611944)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5573
Key Quad: Traver (3611944)
Occurrence Number: 493
EO Index: 118543
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, 2.1 MILES NW OF AVE 320 AT RD 52 AND 1.9 MILES SW OF CA-99 AT THE CROSS CREEK CROSSING.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W-641 & 642.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (2 MAPPED HERE, SEE ALSO EO #492, 494 & 495).

PLSS: T18S, R23E, Sec. 4, SW (M)
Accuracy: specific area
Area (acres): 19
UTM: Zone-11 N4030162 E276981
Latitude/Longitude: 36.39075 / -119.48657
Elevation (feet): 268

County Summary:

Kings

Quad Summary:

Traver (3611944)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5574
Key Quad: Traver (3611944)
Occurrence Number: 494
EO Index: 118544
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, S SIDE CROSS CREEK, 2.5 MI NW OF AVE 320 AT RD 52, AND 3 MI W OF CA-99 AT AVE 328, NNW OF GOSHEN.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W-639, 651, 655, 657, 658, 665, & 671.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (7 MAPPED HERE, SEE ALSO EO #492, 493 & 495)

PLSS: T18S, R23E, Sec. 5 (M)
Accuracy: specific area
Area (acres): 55
UTM: Zone-11 N4029912 E275889
Latitude/Longitude: 36.38824 / -119.49867
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Traver (3611944), Burris Park (3611945)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5575
Key Quad: Burris Park (3611945)
Occurrence Number: 495

EO Index: 118545
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None

Rare Plant Rank:
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, ON SE SIDE OF CROSS CREEK ABOUT 2.7 MI WNW OF AVE 320 AT RD 52, 3.4 MI SW OF CA-99 AT AVE 328.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOL W-680.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (7 MAPPED HERE, SEE ALSO EO #492, 493 & 494)

PLSS: T18S, R23E, Sec. 8, E (M)
UTM: Zone-11 N4028911 E275251

Accuracy: specific area
Latitude/Longitude: 36.37908 / -119.50549

Area (acres): 11
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40395
EO Index: 35402
Key Quad: Traver (3611944)
Element Code: ICBRA10010
Occurrence Number: 129
Occurrence Last Updated: 2015-02-19

Scientific Name: *Lepidurus packardi*
Common Name: vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered
State: None
Rare Plant Rank:
Other Lists: IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed: 1998-04-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-04-10
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH OF CROSS CREEK, ABOUT 1.5 MILES NNE OF HIGHWAY 99 AT AVE 328, 4.5 MILES SE OF TRAVER.

Detailed Location:

Ecological:

NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS. BURROWING OWLS ALSO OBSERVED IN THE VICINITY. AGRICULTURE TO SOUTH AND EAST. AIR PHOTOS FROM 2014 SHOW POSSIBLE CHANGE IN HYDROLOGY (FLOODING OF FIELD ADJACENT TO IRRIGATION DITCH).

Threats:

THREATENED BY AGRICULTURAL CONVERSION (1998).

General:

100S OF TADPOLE SHRIMP OBSERVED ON 10 APRIL 1998. 20 COLLECTED, 15 IN CAS (CASIZ #118377).

PLSS: T17S, R23E, Sec. 35, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4031773 E281054
Latitude/Longitude: 36.40620 / -119.44165
Elevation (feet): 280

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL98F0001	HALSTEAD, J.A. & P.S. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 1998-04-10
HAL98S0003	HALSTEAD, J. - CASIZ #118377, COLLECTED "10 MILES NW OF VISALIA, T17S R23S, NE1/4 OF SE1/4 OF SEC 35." 1998-04-10
HAL98U0001	HALSTEAD, J. A. - SCIENTIFIC COLLECTING REPORT OF SPECIMENS COLLECTED 1998-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41568	**EO Index:**	41568
Key Quad:	Burris Park (3611945)	**Element Code:**	ICBRA10010
Occurrence Number:	139	**Occurrence Last Updated:**	2018-01-22

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.3 MILE WEST OF CROSS CREEK, 1.8 MILES SE OF JUNCTION OF 4TH AVENUE AND EXCELSIOR AVE, ABOUT 6 MILES SW OF BURRIS PARK.

Detailed Location:

1999: VERNAL POOL(S) IN AREA "B." 2017: CROSS CREEK WEST PROPERTY.

Ecological:

1999: VERNAL POOLS IN GRAZED NON-NATIVE GRASSLAND. 2017: PROPERTY BEING CONSIDERED FOR MITIGATION BANK BY HIGH SPEED RAIL AUTHORITY.

Threats:

CONVERSION TO FARMLAND (1999).

General:

100S OBSERVED HERE & IN AREA "A" (OCCURRENCE #140) ON 14 MAR 1999; COLLECTIONS DEPOSITED AT CAS. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016; 1 MAPPED HERE. DETECTED AT ABOUT 20 SAMPLING SITES IN 5 POOLS, JAN-MAR 2017; 1 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 8, NW (M)	**Accuracy:**	specific area	**Area (acres):**	14
UTM:	Zone-11 N4029078 E274978	**Latitude/Longitude:**	36.38052 / -119.50857	**Elevation (feet):**	263

County Summary:	**Quad Summary:**
Kings	Burris Park (3611945)

Sources:

HAL99F0001	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI (TADPOLE SHRIMP) 1999-03-04
HAL99S0010	HALSTEAD, J. - CASIZ #122199, 122201, & 122202, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-14
HAL99S0011	HALSTEAD, J. - CASIZ #122200, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-06
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41572	**EO Index:**	41572
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	140	**Occurrence Last Updated:**	2018-01-22

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

BOTH SIDES OF CROSS CREEK ABOUT 1.25-2.8 MILES SW OF WHERE IT CROSSES HIGHWAY 99, 4 MILES SOUTH OF TRAVER.

Detailed Location:

1999: VERNAL POOL(S) IN AREA "A." 2016-17: ON CROSS CREEK EAST AND WEST PROPERTIES.

Ecological:

VERNAL POOLS IN NON-NATIVE GRASSLAND. 2016-17: PROPERTY BEING EVALUATED FOR HIGH SPEED RAIL AUTHORITY MITIGATION BANK.

Threats:

CONVERSION TO FARMLAND (1999).

General:

100S OBSERVED HERE & IN AREA "B" (OCCURRENCE #139) IN 1999; COLLECTIONS DEPOSITED AT CAS. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016; 12 MAPPED HERE. DETECTED IN 23 POOLS ACROSS PROPERTY IN 2017; ABOUT 9 SAMPLING SITES MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NW (M)	**Accuracy:**	specific area	**Area (acres):**	111
UTM:	Zone-11 N4030584 E276690	**Latitude/Longitude:**	36.39448 / -119.48994	**Elevation (feet):**	263

County Summary:	**Quad Summary:**
Kings	Traver (3611944), Burris Park (3611945)

Sources:

HAL99F0002	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI (TADPOLE SHRIMP) 1999-03-04
HAL99S0010	HALSTEAD, J. - CASIZ #122199, 122201, & 122202, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-14
HAL99S0011	HALSTEAD, J. - CASIZ #122200, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-06
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B2907	**EO Index:**	87257
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	292	**Occurrence Last Updated:**	2019-04-16

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2018-04-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2018-04-09	**Occurrence Rank:**	Good
Owner/Manager:	PVT-WESTERVELT ECOLOGICAL SVCS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF ROAD 80 (ALTA AVE) ALONG COTTONWOOD CREEK ABOUT 0.5 MILE SOUTH OF AVENUE 360, ABOUT 5 MILES ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROJECT SITE, LOCATION DESCRIPTIONS OF POOLS, & COORDINATES GIVEN FOR 2017 & 2018 DETECTIONS. 1992: "COMMON IN THE TURBID WATER OF POOL #3," FOUND "IN COTTONWOOD CREEK" & "IN THE IRRIGATION CANAL." 2018: VP-6 & 47.

Ecological:

NON-NATIVE GRASSLAND, NORTHERN CLAYPAN VERNAL POOL, GREAT VALLEY WILLOW SCRUB, VALLEY SACATON & WILDRYE GRASSLANDS IN AGRICULTURAL AREA. NO CHANGE BETWEEN 1994 & 2011 AERIAL; DISKING APPARENT IN 2011 IMAGE. MITIGATION SITE AS OF 2018.

Threats:

General:

DETECTED & PHOTOGRAPHED ON 21 MAR, 21 & 22 JUN, 1992. NONE DETECTED DURING NON-PROTOCOL SAMPLING OF 7 VERNAL POOLS IN THE NE 1/4 OF FEATURE ALONG CANAL, 2011. MANY DETECTED AT 6 SITES, 2017. ABOUT 10 DETECTED IN 2 POOLS, 2018.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	151
UTM:	Zone-11 N4034747 E284909	**Latitude/Longitude:**	36.43386 / -119.39953	**Elevation (feet):**	288

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX
HAN92R0001	HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX
HEL17F0017	HELM, B. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-03-08
OBR18F0010	O'BRIEN, S. (HELM BIOLOGICAL CONSULTING) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2018-04-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86221	**EO Index:**	87258
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	293	**Occurrence Last Updated:**	2012-06-28

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2011-05-24	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-24	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK (COTTONWOOD CRK) ABOUT 1.3 MI SW OF ROAD 80 (ALTA AVE) AT AVE 360, & ABOUT 4.7 MI ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROVIDED TOPOGRAPHIC AND AERIAL MAPS (GEOREFERENCED). THIS SITE REPRESENTS THE GENERAL AREA OF 2 VERNAL POOLS (#48 & 50) OF 64 ON THE PROJECT SITE THAT CONTAINED VERNAL POOL TADPOLE SHRIMP.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS, BUT WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. WESTERN SPADEFOOT TOAD (SPEA HAMMONDII) ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

UNKNOWN NUMBER OF LEPIDURUS PACKARDI DETECTED IN TWO VERNAL POOLS DURING 3 SURVEYS (NON-PROTOCOL) FROM 1 APR - 24 MAY 2011. ABOUT 10 TOTAL ADULTS WERE DETECTED IN 3 POOLS FROM SITE.

PLSS:	T17S, R24E, Sec. 30, NE (M)	**Accuracy:**	non-specific area	**Area (acres):**	48
UTM:	Zone-11 N4034238 E284038	**Latitude/Longitude:**	36.42907 / -119.40907	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0019	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2011-04-25
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86222	**EO Index:**	87264
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	294	**Occurrence Last Updated:**	2012-06-28

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2011-05-16	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-16	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

EAST SIDE OF HWY 99, ABOUT 1/4 MILE NORTH OF WHERE CROSS CREEK PASSES UNDER HWY 99, ABOUT 3.6 MI SSE OF TRAVER.

Detailed Location:

VERNAL POOL #6. MAPPED GENERALLY TO TOPOGRAPHIC AND AERIAL MAPS (GEOREFERENCED). VERNAL POOL TADPOLE SHRIMP DETECTED IN 3 OF 64 POOLS ON THE PROJECT SITE.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS, BUT WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. WESTERN SPADEFOOT TOAD (SPEA HAMMONDII) ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

UNKNOWN NUMBER OF LEPIDURUS PACKARDI DETECTED IN THIS VERNAL POOL DURING 3 SURVEYS (NON-PROTOCOL) FROM 18 MAR - 16 MAY 2011. ABOUT 10 TOTAL ADULTS WERE DETECTED IN 3 POOLS FROM SITE.

PLSS:	T17S, R23E, Sec. 35, E (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4032047 E279765	**Latitude/Longitude:**	36.40837 / -119.45608	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0019	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2011-04-25
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86223
EO Index: 87265
Key Quad: Traver (3611944)
Element Code: ICBRA10010
Occurrence Number: 295
Occurrence Last Updated: 2018-01-22

Scientific Name: *Lepidurus packardi*
Common Name: vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered
State: None
Rare Plant Rank:
Other Lists: IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

BOTH SIDES OF CROSS CREEK FROM THE HWY 99 CROSSING TO ABOUT 0.9 MILES SW, ABOUT 4 MILES SSE OF TRAVER.

Detailed Location:

ON CROSS CREEK EAST PROPERTY. MAPPED TO PROVIDED MAPS. 2007: ADJACENT TO ROAD 60 WHICH IS A FRONTAGE ROAD TO HWY 99.

Ecological:

2007: WETLAND POND IN INTERMITTENT DRAINAGE OF CROSS CREEK SURROUNDED BY NON-NATIVE ANNUAL GRASSLAND USED FOR CATTLE GRAZING. 2016-17: POTENTIAL MITIGATION PROPERTY FOR HIGH SPEED RAIL AUTHORITY.

Threats:

General:

ABOUT 30 ADULTS DETECTED ON 17 MAY 2007. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016, 18 MAPPED HERE. DETECTED IN 18 POOLS THROUGHOUT CROSS CREEK EAST PROPERTY IN 2017 (ABOUT 9 SAMPLING SITES REPRESENTED HERE).

PLSS: T17S, R23E, Sec. 34, SE (M)
Accuracy: specific area
Area (acres): 153
UTM: Zone-11 N4031277 E279078
Latitude/Longitude: 36.40128 / -119.46353
Elevation (feet): 271

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL07F0002	HALSTEAD, J. ET AL (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2007-05-17
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 61636
EO Index: 61672
Key Quad: Guernsey (3611926)
Element Code: IICOL0220E
Occurrence Number: 2
Occurrence Last Updated: 2005-06-17

Scientific Name: *Cicindela tranquebarica joaquinensis*
Common Name: San Joaquin tiger beetle

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G5T1
State: S1

General Habitat:
KNOWN ONLY FROM TULARE AND KINGS COUNTIES.

Micro Habitat:

Last Date Observed: 2005-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2005-XX-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 3.8-5.8 MILES WEST OF GUERNSEY.

Detailed Location:
SOUTH SIDE OF KANSAS AVENUE BETWEEN 14TH AND 16TH AVENUES.

Ecological:

Threats:

General:
UNKNOWN NUMBER COLLECTED IN SPRING 2005.

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: non-specific area
Area (acres): 222
UTM: Zone-11 N4010646 E254779
Latitude/Longitude: 36.20960 / -119.72773
Elevation (feet): 215

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:

HAI05U0003 HAINES, D. - NOTES OF PHONE CONVERSATION BETWEEN SANDY SHANKS & DENNIS HAINES REGARDING HIS COLLECTION DATA FOR THE SAN JOAQUIN TIGER BEETLE, CICINDELA TRANQUEBARICA NEW SUBSPECIES. 2005-05-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B9082
Key Quad: Traver (3611944)
Occurrence Number: 123
EO Index: 124256
Element Code: IIHYM24260
Occurrence Last Updated: 2023-06-28

Scientific Name: *Bombus pensylvanicus*
Common Name: American bumble bee

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3G4
State: S2

Rare Plant Rank:

General Habitat:

Micro Habitat:

LONG-TONGUED; FORAGES ON A WIDE VARIETY OF FLOWERS INCLUDING VETCHES (VICIA), CLOVERS (TRIFOLIUM), THISTLES (CIRSIUM), SUNFLOWERS (HELIANTHUS), ETC. NESTS ABOVE GROUND UNDER LONG GRASS OR UNDERGROUND. QUEENS OVERWINTER IN ROTTEN WOOD OR UNDERGROUND.

Last Date Observed: 1975-10-07
Last Survey Date: 1975-10-07
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

VICINITY OF ROAD 80 AT AVENUE 368, 5.5 MI S OF DINUBA AND 10.5 MI NW OF VISALIA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED NON-SPECIFICALLY TO LOCATION STATED AS "5.5 MI S OF DINUBA." MUSEUM GEOREFERENCING PUTS THIS 9.3 MILES S OF DINUBA NEAR SAINT JOHNS RIVER.

Ecological:

AREA COMPRISED PRIMARILY OF DAIRY AND AGRICULTURAL FIELDS.

Threats:

General:

4 ADULT MALES COLLECTED BY E. LINSLEY ET AL. ON 7 OCT 1975 (EMEC #550190, #550191, #550192, & #550193).

PLSS: T17S, R24E, Sec. 8 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4037642 E285893
Latitude/Longitude: 36.46015 / -119.38935
Elevation (feet): 295

County Summary:	Quad Summary:
Tulare	Monson (3611943), Traver (3611944)

Sources:

LIN75S0011	LINSLEY, E. ET AL. - EMEC #550190, #550191, #550192, & #550193 COLLECTED 5.5 MI S OF DINUBA, TULARE COUNTY 1975-10-07
RIC22D0001	RICHARDSON, L. (XERCES SOCIETY) - CALIFORNIA EXTRACT OF BUMBLE BEES OF NORTH AMERICA DATABASE. HTTPS://WWW.LEIFRICHARDSON.ORG/BBNA.HTML. ACCESSED 7 DEC 2022. 2022-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B9085
Key Quad: Visalia (3611933)
Occurrence Number: 125

EO Index: 124262
Element Code: IIHYM24260
Occurrence Last Updated: 2023-06-28

Scientific Name: *Bombus pensylvanicus*
Common Name: American bumble bee

Listing Status: **Federal:** None
State: None

Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3G4
State: S2

General Habitat:

Micro Habitat:

LONG-TONGUED; FORAGES ON A WIDE VARIETY OF FLOWERS INCLUDING VETCHES (VICIA), CLOVERS (TRIFOLIUM), THISTLES (CIRSIUM), SUNFLOWERS (HELIANTHUS), ETC. NESTS ABOVE GROUND UNDER LONG GRASS OR UNDERGROUND. QUEENS OVERWINTER IN ROTTEN WOOD OR UNDERGROUND.

Last Date Observed: 1979-09-18
Last Survey Date: 1979-09-18
Owner/Manager: UNKNOWN
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

TAGUS, NEAR CA-99 AT ROAD 92B, ABOUT 5.8 MI SW OF VISALIA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED NON-SPECIFICALLY TO COMMUNITY OF TAGUS.

Ecological:

Threats:

General:

2 ADULT MALES & 4 ADULT FEMALES COLLECTED BY E. LINSLEY & J. LINSLEY ON 18 SEP 1979 (EMEC #550194, #550195, #550730, #550731, #550732, & #550733).

PLSS: T19S, R24E, Sec. 15 (M)
UTM: Zone-11 N4016589 E287390

Accuracy: 1 mile
Latitude/Longitude: 36.27084 / -119.3669

Area (acres): 1,987
Elevation (feet): 298

County Summary:

Tulare

Quad Summary:

Visalia (3611933), Goshen (3611934)

Sources:

LIN79S0003	LINSLEY, E. & J. LINSLEY - EMEC #550194, #550195, #550730, #550731, #550732, & #550733 COLLECTED NEAR TAGUS, TULARE COUNTY 1979-09-18
RIC22D0001	RICHARDSON, L. (XERCES SOCIETY) - CALIFORNIA EXTRACT OF BUMBLE BEES OF NORTH AMERICA DATABASE. HTTPS://WWW.LEIFRICHARDSON.ORG/BBNA.HTML. ACCESSED 7 DEC 2022. 2022-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
Key Quad: Goshen (3611934)
Occurrence Number: 22
EO Index: 118554
Element Code: PDAST5L030
Occurrence Last Updated: 2020-05-28

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1914-03-26
Last Survey Date: 1914-03-26
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
GOSHEN.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS IN THE VICINITY OF GOSHEN BASED ON 1897 & 1914 COLLECTIONS.

Ecological:

Threats:
VICINITY HAS BEEN IMPACTED BY DEVELOPMENT OR CONVERSION TO AGRICULTURE.

General:
SITE BASED ON TWO SETCHELL COLLECTIONS FROM 1897 AND A 1914 EASTWOOD COLLECTION FROM GOSHEN. REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet):

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

EAS14S0010	EASTWOOD, A. - EASTWOOD #3919 CAS-BOT-BC #354207 & #354210, CAS #193460 & #5448, JEPS #17308, UC #895380, POM #50940 1914-03-26
SET97S0004	SETCHELL, W. - SETCHELL SN UC #80029 1897-04-23
SET97S0005	SETCHELL, W. - SETCHELL SN UC #31348 1897-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3004	**EO Index:**	118558
Key Quad:	Traver (3611944)	**Element Code:**	PDAST5L030
Occurrence Number:	23	**Occurrence Last Updated:**	2020-07-02

Scientific Name: *Lasthenia chrysantha* **Common Name:** alkali-sink goldfields

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.1

State: None **Other Lists:**

CNDDB Element Ranks: **Global:** G2

State: S2

General Habitat:

VERNAL POOLS.

Micro Habitat:

ALKALINE. 0-200 M.

Last Date Observed:	2017-03-31	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-31	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

CROSS CREEK PROPERTY, ALONG WEST SIDE OF HIGHWAY 99, 3.7 MILES NW OF GOSHEN.

Detailed Location:

MAPPED BY CNDDB AS MANY POLYGONS BASED ON 2016-2017 PRESTON DIGITAL DATA FOR PUCCINELLA SIMPLEX. 1925 ABRAMS COLECTION FROM "TRAVERS TO GOSHEN" AND 1940 COPELAND COLLECTION FROM "15 MI N OF TULARE, U.S. 99" ALSO ATTRIBUTED HERE.

Ecological:

SHALLOW ALKALINE VERNAL POOLS AND SCALDS, WITH LEPIDIUM DICTYOTUM, HORDEUM DEPRESSUM, CENTROMADIA PUNGENS, JUNCUS BUFONIUS, SPERGULARIA ATROSPERMA, AND THE RARE PUCCINELLIA SIMPLEX.

Threats:

NONE NOTED.

General:

SITE BASED ON 2016 & 2017 PRESTON SURVEYS FOR PUCCINELLIA SIMPLEX WHERE LASTHENIA IS LISTED AS AN ASSOCIATE. UNKNOWN NUMBER OF PLANTS OBSERVED DURING PUCCINELLIA SURVEYS. PROPOSED MITIGATION SITE.

PLSS:	T18S, R23E, Sec. 3, N (M)	**Accuracy:**	specific area	**Area (acres):**	173
UTM:	Zone-11 N4031132 E278793	**Latitude/Longitude:**	36.39991 / -119.46666	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Kings, Tulare	Traver (3611944)

Sources:

ABR25S0005	ABRAMS, L. - ABRAMS #10788 CAS-BOT-BC #354206, DS #148202, POM #88213 1925-03-24
COP40S0001	COPELAND, H. - COPELAND SN UC #754033 1940-03-16
PRE16F0008	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2016-03-30
PRE17F0030	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-03-31

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5585
Key Quad: Remnoy (3611935)
Occurrence Number: 24

EO Index: 118561
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-03

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None

Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1965-04-11
Last Survey Date: 1965-04-11
Owner/Manager: UNKNOWN
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
5 MILES EAST OF HANFORD ON GRANGEVILLE BLVD.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB ALONG E GRANGEVILLE BLVD ABOUT 4.5-5.5 ROAD MILES EAST OF 10TH AVE IN HANFORD BASED ON A 1965 JUNELL COLLECTION.

Ecological:
RANGELAND.

Threats:
MUCH OF AREA HAS BEEN CONVERTED TO AGRICULTURE.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1965 JUNELL COLLECTION. REMAINING HABITAT IN AREA SHOULD BE SEARCHED. NEEDS FIELDWORK.

PLSS: T18S, R22E, Sec. 24, S (M)
UTM: Zone-11 N4024984 E271933

Accuracy: non-specific area
Latitude/Longitude: 36.34293 / -119.54129

Area (acres): 110
Elevation (feet): 255

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
JUN65S0001 JUNELL, D. - JUNELL #19 HSC #5145 1965-04-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5587
Key Quad: Remnoy (3611935)
Occurrence Number: 25
EO Index: 118565
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-03

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1958-03-15
Last Survey Date: 1958-03-15
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
AT 6TH AVENUE AND LACEY BOULEVARD, HANFORD, HIGHWAY 198.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB AROUND THE INTERSECTION OF 6TH AVE AND LACEY BLVD EAST OF HANFORD BASED ON A 1958 ORNDUFF COLLECTION.

Ecological:
IN ALKALI-SCALDED FIELD, ADJACENT TO SCALDS.

Threats:
MUCH OF AREA HAS BEEN CONVERTED TO AGRICULTURE.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1958 ORNDUFF COLLECTION. NEEDS FIELDWORK.

PLSS: T18S, R22E, Sec. 34, NE (M)
Accuracy: 2/5 mile
Area (acres): 280
UTM: Zone-11 N4023402 E269752
Latitude/Longitude: 36.32816 / -119.56511
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
ORN58S0020 ORNDUFF, R. - ORNDUFF #4784 UC #1363804 1958-03-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5593
EO Index: 118570
Key Quad: Laton (3611946)
Element Code: PDAST5L030
Occurrence Number: 27
Occurrence Last Updated: 2020-05-28

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1958-03-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1958-03-15
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:
1.1 MILES NORTH OF LATON, DEL RIO RD.

Detailed Location:
ROADSIDE, ON EAST SIDE OF ROAD. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS ALONG S FOWLER AVE ABOUT 1.1 ROAD MILES NORTH OF LATON BASED ON A 1958 ORNDUFF COLLECTION.

Ecological:
LOW PLACES, ROADSIDE, ALKALI FLATS.

Threats:
AREA HAS BEEN HIGHLY MODIFIED BY AGRICULTURAL CONVERSION.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1958 ORNDUFF COLLECTION. POSSIBLY EXTIRPATED; REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T17S, R21E, Sec. 16, E (M)
Accuracy: non-specific area
Area (acres): 31
UTM: Zone-11 N4037404 E258853
Latitude/Longitude: 36.45159 / -119.69075
Elevation (feet): 255

County Summary:
Fresno

Quad Summary:
Laton (3611946)

Sources:
ORN58S0021 ORNDUFF, R. - ORNDUFF #4783 UC #1363805, RSA #202273 1958-03-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5595
Key Quad: Laton (3611946)
Occurrence Number: 28

EO Index: 118572
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-02

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None

Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1934-03-26
Last Survey Date: 1934-03-26
Owner/Manager: UNKNOWN
Presence: Possibly Extirpated

Occurrence Type: Natural/Native occurrence
Occurrence Rank: None
Trend: Unknown

Location:
4 MILES NORTH OF LATON.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS VARIOUS MEASUREMENTS OF ABOUT 4 AIR, ROAD, AND RAILROAD MILES NORTH OF LATON, BASED ON A 1934 ROSE COLLECTION.

Ecological:
ALKALINE PLAINS.

Threats:
AREA HAS BEEN HIGHLY MODIFIED BY AGRICULTURAL CONVERSION.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1934 ROSE COLLECTION. PROBABLY EXTIRPATED; SURROUNDING AREA HAS BEEN CONVERTED TO AGRICULTURE.

PLSS: T17S, R21E, Sec. 4 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4041585 E258465
Latitude/Longitude: 36.48914 / -119.69638
Elevation (feet):

County Summary:
Fresno

Quad Summary:
Laton (3611946), Conejo (3611956)

Sources:

ROS34S0013 ROSE, L. - ROSE #34078 CAS-BOT-BC #354152, #354153 & #354158, CAS #235719, DS #379895 & #232243, JEPS #17264, RSA #94389 1934-03-26

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 3244
Key Quad: Goshen (3611934)
Element Code: PDCHE040B0
Occurrence Number: 30
Occurrence Last Updated: 2009-11-02

Scientific Name: *Atriplex cordulata var. cordulata*
Common Name: heartscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G3T2
State: S2

General Habitat:

CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, MEADOWS AND SEEPS.

Micro Habitat:

ALKALINE FLATS AND SCALDS IN THE CENTRAL VALLEY, SANDY SOILS. 3-275 M.

Last Date Observed: 1938-09-05
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1938-05-09
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NEAR GOSHEN.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON GOSHEN.

Ecological:

Threats:

RESIDENTIAL AND COMMERCIAL DEVELOPMENT SURROUNDS; MAY NOT BE SUITABLE HABITAT REMAINING (SEE ATRIPLEX SUBTILIS EO 8).

General:

ONLY SOURCE OF INFO IS 1938 EASTWOOD & HOWELL COLLECTION. AREA SHOULD BE FIELD CHECKED FOR THE PRESENCE OF SUITABLE HABITAT. ID OF SPECIMEN SHOULD ALSO BE CHECKED; PRESTON (2009) HAS NOT FOUND THIS POPULATION, POSSIBLY A. ERECTICAULIS.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet): 285

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

EAS38S0010	EASTWOOD, A. & J. HOWELL - EASTWOOD #6274 RSA #22184, CAS #261511 1938-09-05
PRE09U0002	PRESTON, R. - ADDITIONAL INFORMATION REGARDING FIELD SURVEY FORMS SUBMITTED FOR ATRIPLEX CORDULATA 2009-10-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 24422
Key Quad: Laton (3611946)
Occurrence Number: 13
EO Index: 7077
Element Code: PDCHE042L0
Occurrence Last Updated: 2011-05-31

Scientific Name: *Atriplex depressa*
Common Name: brittlescale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, MEADOWS AND SEEPS, PLAYAS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:

USUALLY IN ALKALI SCALDS OR ALK. CLAY IN MEADOWS OR ANNUAL GRASSLND; RARELY ASSOCIATED WITH RIPARIAN, MARSHES, OR VERNAL POOLS. 1-325 M.

Last Date Observed: XXXX-XX-XX
Last Survey Date: XXXX-XX-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

LATON.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON LATON.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION IS UNDATED KEARNEY COLLECTION. NEEDS FIELDWORK.

PLSS: T17S, R21E, Sec. 22 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4035584 E259139
Latitude/Longitude: 36.43527 / -119.68698
Elevation (feet):

County Summary:

Fresno, Kings

Quad Summary:

Laton (3611946)

Sources:

KEANDS0001 KEARNEY, T. - KEARNEY #33 US (CITED IN TAY93U0002) XXXX-XX-XX

TAY93U0002 TAYLOR, D. - ENDEMIC CA ANNUAL ATRIPLEX RECORDS. (COLLECTIONS FOR SEVERAL TAXA) 1993-07-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 82784
EO Index: 83810
Key Quad: Traver (3611944)
Element Code: PDCHE042L0
Occurrence Number: 76
Occurrence Last Updated: 2011-06-06

Scientific Name: *Atriplex depressa*
Common Name: brittlescale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, MEADOWS AND SEEPS, PLAYAS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:

USUALLY IN ALKALI SCALDS OR ALK. CLAY IN MEADOWS OR ANNUAL GRASSLND; RARELY ASSOCIATED WITH RIPARIAN, MARSHES, OR VERNAL POOLS. 1-325 M.

Last Date Observed: 1968-05-13
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1968-05-13
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

4 MILES S OF DINUBA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS 4 MILES S OF DINUBA FROM SOUTHERN PACIFIC RAILROAD; MULTIPLE ROADS LEAD S OUT OF DINUBA, CENTERED ON ROAD 80 AND ROAD 84.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION IS A 1968 HOOVER COLLECTION. NEEDS FIELDWORK.

PLSS: T17S, R24E, Sec. 05 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4040025 E285977
Latitude/Longitude: 36.48164 / -119.38907
Elevation (feet):

County Summary:

Tulare

Quad Summary:

Monson (3611943), Traver (3611944)

Sources:

HOO68S0019 HOOVER, R. - HOOVER #11078 OBI (CITED IN TAY93U0002) 1968-05-13

TAY93U0002 TAYLOR, D. - ENDEMIC CA ANNUAL ATRIPLEX RECORDS. (COLLECTIONS FOR SEVERAL TAXA) 1993-07-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56415
EO Index: 56431
Key Quad: Goshen (3611934)
Element Code: PDCHE042M0
Occurrence Number: 14
Occurrence Last Updated: 2011-05-11

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2002-09-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
N SIDE OF AVE 308, 0.4 MILE W OF ROAD 76, GOSHEN.

Detailed Location:
IN FIELD ON N SIDE OF ROAD. MAPPED WITHIN THE SW 1/4 NE 1/4 SECTION 19.

Ecological:
ALKALI GRASSLAND WITH CENTROMADIA PUNGENS, SUAEDA MOQUINII, BASSIA HYSSOPIFOLIA, CUSCUTA CALIFORNICA, AND ANNUAL GRASSES.

Threats:
FIELD DISKED SOMETIME IN PREVIOUS YEAR. NEW HOUSING DEVELOPMENT ADJACENT TO SITE.

General:
25 PLANTS SEEN IN 2002. COLLECTION BY EASTWOOD & HOWELL IN 1938 "NEAR GOSHEN" ATTRIBUTED TO THIS OCCURRENCE.

PLSS: T18S, R24E, Sec. 19, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4025366 E283702
Latitude/Longitude: 36.34909 / -119.41036
Elevation (feet): 290

County Summary:
Tulare

Quad Summary:
Goshen (3611934)

Sources:

EAS38S0037	EASTWOOD, A. & J. HOWELL - EASTWOOD #6275 RSA #22185, CAS #261516, CAS-BOT-BC #180937 1938-09-05
PRE02F0014	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2002-09-12
PRE02S0007	PRESTON, R. - PRESTON #1947 DAV #77395 2002-09-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56417
EO Index: 56433
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 15
Occurrence Last Updated: 2018-09-19

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2002-09-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ALONG E SIDE OF ROAD 80, N OF COTTONWOOD CREEK, 7 MILES N OF GOSHEN.

Detailed Location:
MAPPED AS A SERIES OF 3 POLYGONS FROM 51-307 M N OF LEVEE AND ROAD 80 INTERESECTION. IN THE SW 1/4 NE 1/4 SECTION 20.

Ecological:
ROADSIDE DRAINAGE.

Threats:
PROPOSED ROAD WIDENING.

General:
UNKNOWN NUMBER IN 2000. 3 SMALL PATCHES OF PLANTS EACH ~900 SQ FT IN AREA SEEN BY PRESTON IN 2002. 1995 STUTZ COLLECTION FROM "5 MILES N OF GOSHEN" AND 2000 LEVERETT COLLECTION FROM "E SIDE OF RD 80, 0.1 MI S OF AVE 360" ATTRIBUTED HERE.

PLSS: T17S, R24E, Sec. 20, NE (M)
Accuracy: specific area
Area (acres): 1
UTM: Zone-11 N4035226 E285395
Latitude/Longitude: 36.43828 / -119.39423
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

LEV00S0001	LEVERETT, R. - LEVERETT SN DAV #148759 & #97544 2000-07-10
PRE00F0003	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS (INCLUDES MENTION OF A. MINUSCULA AT THE SITE) 2000-09-22
PRE02F0015	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2002-09-12
STU95S0008	STUTZ, H. - STUTZ #9791 RSA #612717 1995-08-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56419
EO Index: 56435
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 16
Occurrence Last Updated: 2004-08-18

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2000-07-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-07-10
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG ROAD 80 BETWEEN BANKS DITCH AND BUTTON DITCH, S OF DINUBA AND N OF VISALIA.

Detailed Location:

MAPPED AT THE CENTER OF SECTION 17 EXTENDING FROM N TO S OF SECTION.

Ecological:

ANNUAL GRASSLAND COMMUNITY WITH LOLIUM MULTIFLORUM, HORDEUM MARINUM SSP. GUSSONEANUM, HELIOTROPIUM CURASSAVICUM, CRESSA TRUXILLENSIS, AND DISTICHLIS SPICATA. ALSO WITH CAPSELLA BURSA-PASTORIS, XANTHIUM STRUMARIUM, AND RUMEX CRISPUS.

Threats:

ROAD WIDENING.

General:

200 PLANTS SEEN IN 2000. THE RARE ATRIPLEX CORDULATA OR A. ERECTICAULIS MAY ALSO OCCUR AT THIS SITE. SITE NEEDS TO BE REVISITED.

PLSS: T17S, R24E, Sec. 17, E (M)
Accuracy: specific area
Area (acres): 59
UTM: Zone-11 N4036708 E285458
Latitude/Longitude: 36.45164 / -119.39394
Elevation (feet): 290

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

LEV00F0001 LEVERETT, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2000-07-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0731
EO Index: 112600
Key Quad: Waukena (3611925)
Element Code: PDCHE042M0
Occurrence Number: 51
Occurrence Last Updated: 2018-09-25

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Poor
Owner/Manager: PVT
Trend: Decreasing
Presence: Presumed Extant

Location:

FIELD ON NE SIDE OF THE HWY 43 AND NEVADA AVENUE JUNCTION, NORTH OF CORCORAN.

Detailed Location:

MAPPED ACCORDING TO COORDINATES AND LOCATION DESCRIPTION. EXACT LOCATIONS OF ATRIPLEX ACROSS PROPERTY UNCLEAR BUT LIKELY SCATTERED ACROSS SITE.

Ecological:

IN SCALDS, VERNAL POOLS, AND BLADED AREAS. ASSOCIATED WITH ATRIPLEX ERECTICAULIS, A. SUBTILIS, AND A. ARGENTEA.

Threats:

SOLAR DEVELOPMENT. BY 2016, AERIAL IMAGERY SHOWS MAJORITY OF SITE EXTIRPATED BY SOLAR DEVELOPMENT.

General:

6000 PLANTS IN 2011. ~50 PLANTS IN EXCAVATED AREA AT W END OF MAPPED AREA AND ONE LARGE OCCURRENCE (SEVERAL THOUSAND) IN E PORTION OF FIELD WITH MULTIPLE SATELLITE POPULATIONS THROUGHOUT PROPERTY. SITE MOSTLY EXTIRPATED ACC TO 2016 IMAGERY.

PLSS: T20S, R22E, Sec. 34, S (M)
Accuracy: non-specific area
Area (acres): 307
UTM: Zone-11 N4002719 E268398
Latitude/Longitude: 36.14155 / -119.57406
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

WIN11F0004 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0734
Key Quad: Traver (3611944)
Occurrence Number: 52
EO Index: 112603
Element Code: PDCHE042M0
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G2
State: S2
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Last Survey Date: 2016-08-02
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Excellent
Trend: Unknown

Location:
APPROXIMATELY 1.9 AIR MILES ENE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED AROUND THE NE 1/4 OF THE NE 1/4 OF SECTION 2 ACCORDING TO 2016 PRESTON INFORMATION.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:
NONE NOTED.

General:
1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T18S, R23E, Sec. 2, NE (M)
Accuracy: non-specific area
Area (acres): 39
UTM: Zone-11 N4030897 E281065
Latitude/Longitude: 36.39831 / -119.44128
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:
PRE16F0005 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0735
EO Index: 112604
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 53
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-02
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

APPROXIMATELY 1.2 AIR MILES NE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:

PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, MOSTLY IN THE NW 1/4 OF THE NW 1/4 OF SECTION 2 AND THE NE 1/4 OF THE NE 1/4 OF SECTION 3.

Ecological:

ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:

NONE NOTED.

General:

1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T18S, R23E, Sec. 2, NW (M)
Accuracy: specific area
Area (acres): 24
UTM: Zone-11 N4030979 E279752
Latitude/Longitude: 36.39874 / -119.45594
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE16F0005 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0736
EO Index: 112605
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 54
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-02
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
APPROXIMATELY 1 AIR MILE NNE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, IN THE SOUTH 1/2 OF SECTION 34.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:
NONE NOTED.

General:
1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T17S, R23E, Sec. 34, S (M)
Accuracy: specific area
Area (acres): 17
UTM: Zone-11 N4031489 E279056
Latitude/Longitude: 36.40318 / -119.46384
Elevation (feet): 275

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

PRE16F0005	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02
PRE16S0002	PRESTON, R. - PRESTON #3062 DAV #218568 & #166856 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0737
EO Index: 112606
Key Quad: Burris Park (3611945)
Element Code: PDCHE042M0
Occurrence Number: 55
Occurrence Last Updated: 2018-09-21

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-03
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-03
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
SOUTH SIDE OF CROSS CREEK, 3.4 MILES WEST OF HIGHWAY 99, 5.2 MILES NW OF GOSHEN.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, IN THE NE 1/4 OF THE NW 1/4 OF SECTION 8.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND SPERGULARIA SP.

Threats:
NONE NOTED.

General:
100S OF PLANTS OBSERVED IN 2016.

PLSS: T18S, R23E, Sec. 8, NW (M)
Accuracy: specific area
Area (acres): 6
UTM: Zone-11 N4029513 E275390
Latitude/Longitude: 36.38454 / -119.50411
Elevation (feet): 265

County Summary:	Quad Summary:
Kings	Burris Park (3611945)

Sources:
PRE16F0006 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 33912
Key Quad: Goshen (3611934)
Element Code: PDCHE042T0
Occurrence Number: 8
Occurrence Last Updated: 2011-05-23

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 1905-09-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:
NEAR RAILROAD STATION, GOSHEN.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON RAILROAD STATION IN GOSHEN.

Ecological:

Threats:
SURROUNDING LAND USE RESIDENTIAL OR COMMERCIAL. PRESTON STATES THAT LITTLE SUITABLE HABITAT REMAINS HERE.

General:
SITE BASED ON A 1905 BRANDEGEE COLLECTION. LISTED AS A. SUBTILIS BY STUTZ & CHU IN 1997 AND ANNOTATED TO A. SUBTILIS BY ZACHARIAS IN 2010. PLANTS NOT OBSERVED BY PRESTON IN 2002.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Goshen (3611934)

Sources:

BRA05S0005	BRANDEGEE, K. - BRANDEGEE SN UC #110268 1905-09-01
PRE02F0016	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2002-09-12
STU97A0001	STUTZ, H. & G. CHU - ATRIPLEX SUBTILIS: A NEW SPECIES FROM SOUTH-CENTRAL CALIFORNIA (IN MADRONO 44(2) PP. 184-188) 1997-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 41361
EO Index: 41361
Key Quad: Waukena (3611925)
Element Code: PDCHE042T0
Occurrence Number: 17
Occurrence Last Updated: 1999-07-08

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 1994-08-30
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-08-30
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
SE CORNER OF KANSAS AVENUE AND 6TH AVENUE, 12 MILES WEST OF TULARE.

Detailed Location:
MAPPED NEAR CROSS CREEK WITHIN THE NW 1/4 SECTION 11. COLLECTION LABEL STATES OCCURRENCE IS IN SECTION 4 BUT THIS DOES NOT MATCH LOCATION DESCRIPTION. MAPPED BY CNDDB ACCORDING TO LOCATION DESCRIPTION.

Ecological:

Threats:

General:
TYPE LOCALITY. ONLY SOURCE OF INFORMATION IS A 1994 COLLECTION BY STUTZ. NEEDS FIELDWORK.

PLSS: T20S, R22E, Sec. 11, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010181 E269653
Latitude/Longitude: 36.20907 / -119.56230
Elevation (feet): 225

County Summary:	Quad Summary:
Kings	Waukena (3611925)

Sources:

STU94S0003	STUTZ, H. - STUTZ #9654 UCR #100891, CAS #946662, NY #232837, RSA #612726, GH #107038, MO #4944369, BRY (ALSO CITED IN STU97A0001) 1994-08-30
STU97A0001	STUTZ, H. & G. CHU - ATRIPLEX SUBTILIS: A NEW SPECIES FROM SOUTH-CENTRAL CALIFORNIA (IN MADRONO 44(2) PP. 184-188) 1997-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 89597
EO Index: 90596
Key Quad: Waukena (3611925)
Element Code: PDCHE042T0
Occurrence Number: 30
Occurrence Last Updated: 2013-06-28

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
NORTH SIDE OF NEVADA AVE, APPROXIMATELY 120 FT EAST OF HIGHWAY 43, NORTH OF CORCORAN.

Detailed Location:
MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION OF SECTION 34.

Ecological:
EXCAVATED AREA. ASSOCIATED WITH ATRIPLEX ERECTICAULIS, A. MINUSCULA, AND A. ARGENTEA.

Threats:
SITE HISTORICALLY USED FOR AGRICULTURE. THREATENED BY SOLAR DEVELOPMENT.

General:
75 PLANTS OBSERVED IN 2011.

PLSS: T20S, R22E, Sec. 34, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4002427 E267642
Latitude/Longitude: 36.13875 / -119.58235
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
WIN11F0002 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 47219
EO Index: 47219
Key Quad: Waukena (3611925)
Element Code: PDCHE042V0
Occurrence Number: 14
Occurrence Last Updated: 2020-06-19

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 1994-08-30
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
12 MILES WEST OF TULARE, NEAR JUNCTION OF KANSAS AVENUE & 6TH AVENUE.

Detailed Location:
MAPPED ACCORDING TO COORDINATES & MAP PROVIDED BY PRESTON, WHO STATES THAT THIS SITE IS THE PLANT'S "NEAREST SUITABLE HABITAT." MAPPED LOCATION IS ABOUT 0.5 MI DUE W OF JUNCTION OF KANSAS AVE AND 6TH AVE; SOUTH OF KANSAS AVE.

Ecological:
ALKALI GRASSLAND, WITH CENTROMADIA PUNGENS, CRESSA TRUXILLENSIS, FRANKENIA SALINA, DISTICHLIS SPICATA, & ANNUAL GRASSES.

Threats:

General:
SITE BASED ON A 1994 STUTZ COLLECTION. ZERO PLANTS OBSERVED IN 2002.

PLSS: T20S, R22E, Sec. 10, NE (M)
Accuracy: non-specific area
Area (acres): 24
UTM: Zone-11 N4010265 E269372
Latitude/Longitude: 36.20976 / -119.56545
Elevation (feet): 230

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:

PRE02F0033	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS 2002-09-12
STU94S0005	STUTZ, H. - STUTZ #9655 BRY #35981, SEINET #4133517 1994-08-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 47221
EO Index: 47221
Key Quad: Traver (3611944)
Element Code: PDCHE042V0
Occurrence Number: 16
Occurrence Last Updated: 2020-06-25

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2017-09-06
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-09-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
ALONG ROAD 80 BETWEEN AVENUE 360 AND COTTONWOOD CREEK.

Detailed Location:
MAPPED AS 3 POLYGONS ACCORDING TO 2000, 2002, AND 2017 PRESTON DATA. PORTIONS OF SITE WEST OF ROAD 80 ARE ON PROPOSED MITIGATION SITE.

Ecological:
IN DRAINAGE CHANNEL; DISTURBED AREAS IN ALKALI GRASSLAND WITH SUAEDA MOQUINII, DISTICHLIS SPICATA, CRESSA TRUXILLENSIS, CENTROMADIA PUNGENS, HELIOTROPIUM CURASSAVICUM, FRANKENIA SALINA, A. SERENANA, CYNODON DACTYLON & ANNUAL GRASSES.

Threats:
WIDENING OF ROAD 80 HAS ELIMATED PLANTS ON THE EAST SIDE OF ROAD 80.

General:
1000'S OF PLANTS ESTIMATED IN 2000. 100'S OF PLANTS OBSERVED IN 2002; FEWER PLANTS PROBABLY DUE TO DROUGHT YEAR. 1150 PLANTS SEEN WEST OF ROAD 80 ON 9/6/2017; NO PLANTS ON EAST SIDE OF ROAD 80 ON 9/7/2017, LIKELY ELIMINATED PRIOR TO 2012.

PLSS: T17S, R24E, Sec. 20 (M)
Accuracy: specific area
Area (acres): 38
UTM: Zone-11 N4035009 E285219
Latitude/Longitude: 36.43628 / -119.39614
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

PRE00F0003	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS (INCLUDES MENTION OF A. MINUSCULA AT THE SITE) 2000-09-22
PRE00S0041	PRESTON, R. - PRESTON #1441 DAV #77390 & #148613 2000-09-06
PRE02F0032	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS 2002-09-12
PRE17F0005	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-06
PRE17F0009	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-07
PRE17S0003	PRESTON, R. - PRESTON #3162 DAV #228936 2017-09-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 89948
EO Index: 90965
Key Quad: Waukena (3611925)
Element Code: PDCHE042V0
Occurrence Number: 22
Occurrence Last Updated: 2013-08-07

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
NORTH SIDE OF NEVADA AVE, APPROXIMATELY 120 FT EAST OF HIGHWAY 43, NORTH OF CORCORAN.

Detailed Location:
MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 34.

Ecological:
EXCAVATED AREA AND WITHIN DEPRESSIONS/VERNAL POOLS SCATTERED THROUGHOUT FIELD. ASSOCIATED WITH ATRIPLEX SUBTILIS, A. MINUSCULA, AND A. ARGENTEA.

Threats:
SITE HISTORICALLY USED FOR AGRICULTURE. THREATENED BY SOLAR DEVELOPMENT.

General:
APPROXIMATELY 200 PLANTS OBSERVED IN EXCAVATED AREA AND ~300 PLANTS FOUND IN FIELD IN 2011.

PLSS: T20S, R22E, Sec. 34, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4002388 E267674
Latitude/Longitude: 36.13840 / -119.58198
Elevation (feet): 200

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
WIN11F0003 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5726
EO Index: 118719
Key Quad: Traver (3611944)
Element Code: PDCHE042V0
Occurrence Number: 23
Occurrence Last Updated: 2020-06-22

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2017-09-07
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-09-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
WEST OF ROAD 80 APPROXIMATELY 5.4 AIR MILES NNE OF GOSHEN.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED AS SEVERAL POLYGONS ACCORDING TO 2017 PRESTON DIGITAL DATA, NEAR THE COMMON CORNER OF SECTIONS 19, 20, 29, & 30.

Ecological:
ALKALI GRASSLAND, WITH HORDEUM SPP., CENTROMADIA PUNGENS, ATRIPLEX SERENANA, HELIOTROPIUM CURASSAVICUM, AND TRICHOSTEMA LANCEOLATUM.

Threats:
NONE NOTED.

General:
150 PLANTS OBSERVED IN 2017.

PLSS: T17S, R24E, Sec. 29, NW (M)
Accuracy: specific area
Area (acres): 30
UTM: Zone-11 N4034184 E284615
Latitude/Longitude: 36.42872 / -119.40265
Elevation (feet): 287

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:
PRE17F0006 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 80351
EO Index: 81338
Key Quad: Guernsey (3611926)
Element Code: PDHYD0A0H0
Occurrence Number: 23
Occurrence Last Updated: 2010-10-11

Scientific Name: *Nama stenocarpa*
Common Name: mud nama

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 2B.2
Other Lists:

CNDDB Element Ranks: **Global:** G4G5
State: S1S2

General Habitat:
MARSHES AND SWAMPS.

Micro Habitat:
LAKE SHORES, RIVER BANKS, INTERMITTENTLY WET AREAS. 15-815 M.

Last Date Observed: 1999-03-26
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-03-26
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
SW OF THE JUNCTION OF KANSAS AVENUE AND 11TH AVENUE, WEST OF GUERNSEY.

Detailed Location:

Ecological:
DRY BOTTOM OF FLOOD CONTROL CHANNEL WITH GNAPHALIUM PALUSTRE, RORIPPA CURVISILIQUA, POTENTILLA NORVEGICA, AND MONTIA FONTANA.

Threats:
AREA DISTURBED BY CATTLE GRAZING AND PERCOLATION BASINS BUT UNKNOWN IF THIS IS A THREAT.

General:
SEEN IN 1999.

PLSS: T20S, R21E, Sec. 11, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4010155 E260791
Latitude/Longitude: 36.20668 / -119.66077
Elevation (feet): 215

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:

PRE99F0009 PRESTON, R. (JONES AND STOKES ASSOCIATES) - FIELD SURVEY FORM FOR NAMA STENOCARPUM 1999-03-26

PRE99S0004 PRESTON, R. - PRESTON #1205 JEPS #110480 1999-03-26

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 51929
EO Index: 51929
Key Quad: Guernsey (3611926)
Element Code: PDRAN0B1J0
Occurrence Number: 15
Occurrence Last Updated: 2003-07-30

Scientific Name: *Delphinium recurvatum*
Common Name: recurved larkspur

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive
SB_SBBG-Santa Barbara Botanic Garden

CNDDB Element Ranks: **Global:** G2?
State: S2

General Habitat:

CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.

Micro Habitat:

ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHENOPOD SCRUB. 3-790 M.

Last Date Observed: 1914-03-25
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1914-03-25
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

GUERNSEY, TULARE CO.

Detailed Location:

AS THERE IS NO GUERNSEY IN TULARE COUNTY, SITE MAPPED IN KINGS COUNTY AT GUERNSEY AT THE JUNCTION OF KANSAS AVENUE WITH THE ATCHISON-TOPEKA & SANTE FE RAILROAD.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1914 COLLECTION BY EASTWOOD. NEEDS FIELDWORK.

PLSS: T20S, R21E, Sec. 01 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4010807 E262607
Latitude/Longitude: 36.21300 / -119.64079
Elevation (feet):

County Summary:	Quad Summary:
Kings	Waukena (3611925), Guernsey (3611926)

Sources:

EAS14S0002 EASTWOOD, A. - EASTWOOD #3898 CAS #89124, CAS-BOT-BC #17139 1914-03-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B8065
Key Quad: Guernsey (3611926)
Occurrence Number: 138
EO Index: 121178
Element Code: PMALI040Q0
Occurrence Last Updated: 2022-03-01

Scientific Name: *Sagittaria sanfordii*
Common Name: Sanford's arrowhead

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

MARSHES AND SWAMPS.

Micro Habitat:

IN STANDING OR SLOW-MOVING FRESHWATER PONDS, MARSHES, AND DITCHES. 0-605 M.

Last Date Observed: 1980-09-22
Last Survey Date: 1980-09-22
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

10TH AVENUE AT KENT, SOUTH OF HANFORD.

Detailed Location:

MAPPED AS BEST GUESS BY CNDDB AT INTERSECTION OF 10TH AVE AND KENT AVE. LABEL ALSO GIVES TRS: T19S R21E SEC 36; INTERSECTION IS AT CONER OF SECS 1, 6, 31, & 36. LABEL STATES"10TH AVE AT KENT N. W. HANFORD," BUT JCT IS SOUTH OF HANFORD.

Ecological:

IN IRRIGATION DITCH.

Threats:

General:

SITE IS BASED ON A 1980 DUNNICLIFF COLLECTION. NEEDS FIELDWORK.

PLSS: T19S, R21E, Sec. 36, SE (M)
Accuracy: 2/5 mile
Area (acres): 280
UTM: Zone-11 N4012238 E262970
Latitude/Longitude: 36.22598 / -119.6372
Elevation (feet): 219

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

DUN80S0002 DUNNICLIFF, J. - DUNNICLIFF SN CDA #0046053 1980-09-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 100163
Key Quad: Goshen (3611934)
Element Code: PMPOA53110
Occurrence Number: 14
Occurrence Last Updated: 2016-01-22

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1925-03-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1925-03-24
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:

GOSHEN.

Detailed Location:

EXACT LOCATION UNKNOWN, MAPPED IN GENERAL VICINITY OF GOSHEN.

Ecological:

ALKALI.

Threats:

POSSIBLY EXTIRPATED BY DEVELOPMENT AND AGRICULTURAL CONVERSION BASED ON AERIAL IMAGERY OF THE AREA.

General:

SITE IS BASED ON A 1914 EASTWOOD COLLECTION FROM GOSHEN AND A 1925 ABRAMS COLLECTION FROM "TRAVERS TO GOSHEN." REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet):

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

ABR25S0004	ABRAMS, L. - ABRAMS #10794 DAV #92068 1925-03-24
EAS14S0006	EASTWOOD - EASTWOOD SN HERBARIUM UNKNOWN (CITED IN HOO37R0001) 1914-03-26
HOO37R0001	HOOVER, R. - ENDEMISM IN THE FLORA OF THE GREAT VALLEY OF CALIFORNIA. DISSERTATION FOR PHD, UNIVERSITY OF CALIFORNIA. 1937-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 98703
EO Index: 100164
Key Quad: Remnoy (3611935)
Element Code: PMPOA53110
Occurrence Number: 15
Occurrence Last Updated: 2016-01-22

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1942-04-11
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1942-04-11
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

2 MILES EAST OF HANFORD.

Detailed Location:

EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.

Ecological:

ALKALINE SOIL, DRYING MUD FLAT ASSOC WITH DISTICHLIS SPICATA AND POLYPOGON MONSPELIENSIS.

Threats:

POSSIBLY EXTIRPATED BY DEVELOPMENT AND AGRICULTURAL CONVERSION BASED ON AERIAL IMAGERY OF THE AREA.

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1942 BEETLE COLLECTION. REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R22E, Sec. 29 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4023842 E266501
Latitude/Longitude: 36.33134 / -119.60142
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

BEE42S0006 BEETLE, A. - BEETLE #2963 DAV #92071 1942-04-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3004
Key Quad: Traver (3611944)
Occurrence Number: 76
EO Index: 114929
Element Code: PMPOA53110
Occurrence Last Updated: 2019-05-03

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 2017-03-31
Last Survey Date: 2017-03-31
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY; WEST SIDE OF HIGHWAY 99, 3.7 MILES NW OF GOSHEN.

Detailed Location:

MOSTLY NORTH OF CROSS CREEK. PROPOSED MITIGATION SITE. MAPPED AS MANY POLYGONS ACCORDING TO PRESTON DIGITAL DATA.

Ecological:

IN SHALLOW ALKALINE VERNAL POOLS AND SCALDS WITH LEPIDIUM DICTYOTUM, LASTHENIA CHRYSANTHA, HORDEUM DEPRESSUM, CENTROMADIA PUNGENS, JUNCUS BUFONIUS, AND SPERGULARIA ATROSPERMA.

Threats:

NONE NOTED.

General:

20,000 PLANTS OBSERVED IN 2016 AND 2017.

PLSS: T18S, R23E, Sec. 3, N (M)
Accuracy: specific area
Area (acres): 173
UTM: Zone-11 N4031132 E278793
Latitude/Longitude: 36.39991 / -119.46666
Elevation (feet): 270

County Summary:

Kings, Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE16F0008	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2016-03-30
PRE17F0030	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-03-31
PRE17I0001	PRESTON, R. - PHOTOS OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0238 & 0239 2017-03-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3005
EO Index: 114931
Key Quad: Traver (3611944)
Element Code: PMPOA53110
Occurrence Number: 77
Occurrence Last Updated: 2019-05-06

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 2017-04-05
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-04-05
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

COTTONWOOD CREEK JUST WEST OF ROAD 80, 5.8 MILES NNE OF GOSHEN.

Detailed Location:

PROPOSED MITIGATION SITE. MAPPED AS 6 POLYGONS ACCORDING TO 2017 PRESTON DIGITAL DATA.

Ecological:

ALKALI VERNAL POOLS WITH LEPIDIUM DICTYOTUM, CENTROMADIA PUNGENS, HORDEUM MARINUM, H. DEPRESSUM, AND PLAGIOBOTHRYS.

Threats:

NONE NOTED.

General:

3,065 PLANTS OBSERVED IN 2017.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: specific area
Area (acres): 24
UTM: Zone-11 N4034785 E284659
Latitude/Longitude: 36.43414 / -119.40232
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE17F0031	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-04-04
PRE17I0002	PRESTON, R. - PHOTO OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0240 2017-04-04
PRE17I0003	PRESTON, R. - PHOTOS OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0241 & 0242 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3009
EO Index: 114937
Key Quad: Hanford (3611936)
Element Code: PMPOA53110
Occurrence Number: 80
Occurrence Last Updated: 2019-05-03

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1942-04-11
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1942-04-11
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

4 MILES SOUTH OF ARMONA, NORTH OF TULARE LAKE.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS ABOUT 4 AIR MILES SOUTH OF ARMONA.

Ecological:

IN ALKALINE MEADOW.

Threats:

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1942 BEETLE COLLECTION. NEEDS FIELDWORK.

PLSS: T19S, R21E, Sec. 21 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4015944 E256630
Latitude/Longitude: 36.25777 / -119.70882
Elevation (feet): 230

County Summary:	Quad Summary:
Kings	Guernsey (3611926), Hanford (3611936)

Sources:

BEE42S0009 BEETLE, A. - BEETLE #2969 SEINET #12895811, F 1942-04-11

Appendix B: Response to Agency Comments

Comment Letter 1: Central Valley Regional Water Quality Control Board

Response to Comment 1-1

Kings County and the Project Proponent acknowledge the comment letter dated June 6, 2025, from the Central Valley Regional Water Quality Control Board (Water Board) regarding the Sozinho Dairy #5 Project. The Water Board does not suggest that an Environmental Impact Report (EIR) is required for the Project, and this position is noted for the record.

In addition, the Central Valley Water Board staff have identified several items described in the Conditional Use Permit (CUP) that require additional clarification to remain in compliance with the Reissued General Order WQ 2015-0211-DWQ for Composting Operations. The applicant will work with Water Board staff to provide the necessary clarifications regarding the CUP to ensure continued compliance with the Reissued General Order.

Comment Letter 2: San Joaquin Valley Air Pollution Control District

Response to Comment 2-1: Project Related Emissions

The commenter notes that the San Joaquin Valley Air Pollution Control District (District) is designated as extreme nonattainment for 8-hour ozone standards and serious nonattainment for $PM_{2.5}$ under federal standards, and nonattainment for 8-hour ozone, PM_{10}, and $PM_{2.5}$ under state standards. The commenter states that the submitted documents lack sufficient information to assess the Project's potential impact on air quality and recommends a detailed preliminary review of construction and operational emissions. This analysis will be incorporated into a revised Appendix. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: The EIR evaluates construction and operational emissions using the California Emission Estimator Model (CalEEMod) as recommended. It includes a supplemental air quality analysis in Appendix C, addressing mobile and stationary emission sources and proximity to sensitive receptors. The analysis concludes emissions are less than significant with the incorporation of AQ-1.

Response to Comment 2-1a: Construction Emissions

The commenter recommends utilizing the cleanest available off-road construction equipment to reduce impacts from construction-related diesel exhaust emissions. To address the commenter's recommendation, a new mitigation measure, AQ-1, requires the use of Tier 4 off-road construction equipment or equivalent emission control technologies for all diesel-powered equipment during construction. This measure will be included in the Mitigation Monitoring and Reporting Program (MMRP), with Kings County responsible for monitoring compliance through construction specifications and contractor reports.

Addressed in EIR: Section 5.2 Air Quality, Imapct 5.2a: Mitigation Measure AQ-1 requires Tier 4 off-road construction equipment or equivalent emission controls, as recommended, included in the Mitigation Monitoring and Reporting Program (MMRP) (Page 50).

Response to Comment 2-1b: Operational Emissions

The commenter recommends analyzing operational air emissions from mobile and stationary sources separately and references the District's significance thresholds in the Guidance for Assessing and Mitigating Air Quality Impacts. Emissions will be compared to the District's significance thresholds. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Additionally, the commenter recommends reducing project-related air quality impacts below the District's significance thresholds through design elements such as cleaner Heavy Heavy-Duty (HHD) trucks, measures to reduce Vehicle Miles Traveled (VMT), and energy efficiency improvements, referencing the District's Clean Air Measures document. The Initial Study commits to compliance with SJVAPCD rules but does not specify operational mitigation measures for mobile sources or energy efficiency. To address this comment, the supplemental CalEEMod air quality analysis (Appendix C) will evaluate the feasibility of incorporating cleaner HHD trucks (e.g.,

model year 2010 or newer with advanced emission controls), VMT reduction strategies (e.g., optimizing delivery schedules), and energy-efficient equipment (e.g., high-efficiency motors for manure processing). These measures will be incorporated to ensure operational emissions are reduced below District thresholds. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: This section analyzed operational emissions, comparing them to SJVAPCD thresholds, and incorporating design elements such as VMT reduction strategies through operational improvements, and energy-efficient equipment to ensure emissions remain below significance thresholds. No additional mitigation measures were required for air quality, as impacts were determined to be less than significant

Response to Comment 2-1c: Recommended Model for Quantifying Air Emissions

The commenter recommends using the California Emission Estimator Model (CalEEMod) to identify and quantify project-related criteria pollutant emissions from construction and operational sources, using the most recent CARB-approved version. The Air Quality Section of the Initial Study evaluates air quality impacts but does not use CalEEMod for emissions quantification. The supplemental air quality analysis (Appendix C) will use CalEEMod to quantify emissions from construction (e.g., off-road equipment, fugitive dust) and operational phases (e.g., mobile and stationary sources), ensuring the latest CARB-approved emission factors are applied. Results will be incorporated into the Initial Study, and any exceedances of District thresholds will trigger mitigation measures. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Imapct 5.2a: The EIR uses CalEEMod for quantifying construction and operational emissions, using the latest CARB-approved emission factors.

Response to Comment 2-2: Prioritization and Health Risk Screening/Assessment

The commenter recommends performing a Prioritization (screening-level health risk assessment) using the California Air Pollution Control Officers Association (CAPCOA) methodology and, if the score exceeds 10, a detailed Health Risk Assessment (HRA) to quantify potential Toxic Air Contaminants (TACs) from construction and operational activities, including diesel exhaust from off-road equipment and on-road trucks. To address the commenter's recommendation, the Project proponent will conduct a Prioritization analysis per CAPCOA methodology. If the score exceeds 10, an HRA will be performed following a District-approved modeling protocol. The results will be incorporated into the Air Quality Section. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2c: The EIR includes Prioritization Screening and Health Risk assessment with accompanying mitigation.

Response to Comment 2-3: Ambient Air Quality Analysis

The commenter recommends an Ambient Air Quality Analysis (AAQA) if emissions exceed 100 pounds per day of any pollutant to determine if the Project will cause or contribute to violations

of state or national ambient air quality standards. The Air Quality Section of the Initial Study evaluates air quality impacts but does not quantify daily emissions against the 100 pounds per day threshold. The supplemental CalEEMod air quality analysis (Appendix C) will include emission estimates for construction and operational phases to determine if an AAQA is required. If emissions exceed 100 pounds per day, an AAQA will be conducted using District-recommended air dispersion modeling, and results will be incorporated into the Initial Study. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: The EIR states that the supplemental CalEEMod analysis quantifies emissions to determine if an AAQA is needed. Since emissions do not exceed 100 pounds per day, an AAQA is not required.

Response to Comment 2-4: Voluntary Emission Reduction Agreement

The commenter recommends discussing the feasibility of a Voluntary Emission Reduction Agreement (VERA) if criteria pollutant emissions exceed District significance thresholds, potentially resulting in significant air quality impacts. The Air Quality Section of the Initial Study notes that the Project may result in a potentially significant impact on air quality due to criteria pollutants. The supplemental CalEEMod air quality analysis (Appendix C) will quantify emissions against District thresholds. If exceedances are identified, the Project proponent will evaluate the feasibility of a VERA with the District, and the Initial Study will be revised to include this discussion. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2.6, Feasibility and Necessity of Implementing a Voluntary Emission Reduction Agreement, was added as an assessment of the feasibility of implementing a VERA.

Response to Comment 2-5: Vegetative Barriers and Urban Greening

Kings County and the Project Proponent acknowledge the recommendation to evaluate the feasibility of incorporating vegetative barriers and urban greening measures to further mitigate air pollution exposure for sensitive receptors, such as the residential units located north of the Project site. These measures, including trees, bushes, shrubs, or mixed plantings, can intercept airborne particulates and uptake gaseous pollutants, with denser and taller barriers providing greater downwind reductions. Urban greening also supports broader air quality improvements, public health benefits, and community beautification through drought-tolerant, low-maintenance species. The Project's supplemental air quality analysis and HRA has assessed receptor proximity and modeling indicates that existing emission controls (Tier 4 equipment, VMT reductions) already limit impacts to less-than-significant levels at off-site residences (minimum 1,930 feet from processing areas). To address this recommendation, the Proponent will incorporate a new Mitigation Measure AQ-2, requiring the planting of a vegetative buffer along the northern site boundary, using native, low-water species compliant with Kings County guidelines. Feasibility will be confirmed during final site design, with planting phased post-construction and maintained for 10 years. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: The EIR evaluates exposure to sensitive receptors, incorporating vegetative barriers as an enhanced control measure as Mitigation Measure AQ-2 to further reduce localized PM2.5 and ozone concentrations. This ensures cumulative and project-level impacts remain less than significant, with implementation tracked via the Mitigation Monitoring and Reporting Program.

Response to Comment 2-6: On-Site Solar Deployment

Kings County and the Project Proponent acknowledge the recommendation to incorporate on-site solar power systems as an emission reduction strategy, aligning with California Public Utilities Code §399.11 and Senate Bill 100's policy for 100% renewable and zero-carbon electricity supply to end-use customers by December 31, 2045. To address this, the Proponent will evaluate rooftop and ground-mounted solar photovoltaic (PV) systems during detailed design for feasibility. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.5 Energy, Impact 5.5a: The EIR assesses energy consumption and conservation, and state that the proponent will evaluate implementing solar.

Response to *Comment* 2-7: Nuisance Odors

Kings County and the Project Proponent acknowledge the comments regarding the assessment of potential nuisance odor impacts from the Sozinho Dairy #5 Project. The guidance specifies that a significant odor impact occurs when a project is likely to frequently expose the public to objectionable odors, assessed case-by-case considering operational intensity, receptor proximity, and meteorological factors, with significance indicated by more than one confirmed complaint per year or three unconfirmed complaints per year, where an unconfirmed complaint involves undetectable odors or undetermined sources. The nearest sensitive receptor (residential) is located 1,930 feet (approximately 0.37 miles) from odor-generating activities, such as manure processing beds and composting areas, within the GAMAQI screening distance of 1 mile for dairies/feedlots—necessitating detailed analysis. The Project incorporates best management practices compliant with SJVAPCD Rule 457, including Phase II odor mitigation (solids separation, vermifiltration, rapid manure incorporation within 72 hours, and silage pile covering), advanced wastewater treatment to reduce volatile organic compounds and ammonia, and biofilters on ventilation systems, resulting in modeled odor concentrations below nuisance thresholds at off-site receptors under prevailing wind conditions. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2d: The EIR conducts a qualitative odor assessment, evaluating source-receptor distances, historical complaint data, and mitigation efficacy, concluding less-than-significant impacts with no potential for frequent public exposure to objectionable odors.

Response to Comment 2-8: District Rules and Regulations

The commenter notes that the Project is subject to District rules, including permitting requirements, and encourages the Project proponent to contact the District's Small Business

Assistance (SBA) Office. The Air Quality Section of the Initial Study references compliance with SJVAPCD Regulation VIII and other applicable rules. The Project proponent acknowledges the need to comply with all District rules, including Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review), and has submitted an Authority to Construct (ATC) application (ATC #C-1243237). The proponent will continue to coordinate with the SBA Office to ensure compliance. The Air Quality Section will be updated to explicitly list District Rules 2010, 2201, 4102 (Nuisance), 4550 (Conservation Management Practices), and 4601 (Architectural Coatings). The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Response to Comment 2-8a: District Rules 2010 and 2201 – Air Quality Permitting for Stationary Sources

The commenter specifies that the Project is subject to District Rules 2010 (Permits Required) and 2201 (New and Modified Stationary Source Review), requiring an ATC and Permit to Operate (PTO). The Air Quality Section of the Initial Study notes compliance with District permitting requirements, and the Project proponent has submitted ATC application #C-1243237. The proponent will submit additional ATC applications as needed and coordinate with the SBA Office to ensure compliance. No revisions to the Initial Study are warranted. The Air Quality Section will be revised to explicitly list Rules 2010 and 2201. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly lists the rules and reasoning for confirming compliance with SJVAPCD Rules 2010 and 2201.

Response to Comment 2-8b: District Rule 9510 – Indirect Source Review (ISR)

The commenter states that the Project is exempt from District Rule 9510 (Indirect Source Review) because its primary functions are subject to Rules 2010 or 2201. The Air Quality Section of the Initial Study does not explicitly address Rule 9510 but notes compliance with applicable District rules. The exemption is acknowledged, and the Air Quality Section will be updated to note that the Project is exempt from Rule 9510 per District determination, as its primary functions are subject to Rules 2010 and 2201. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly list the rule and reasoning for the Project being exempt.

Response to Comment 2-8c: District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

Kings County and the Project Proponent acknowledge the comment regarding potential applicability of SJVAPCD Rule 4002, which implements federal National Emission Standards for Hazardous Air Pollutants (NESHAP), for asbestos-containing materials (ACM) in the event of renovation, partial demolition, or removal of existing buildings or regulated facilities. The Project does not currently propose renovation, demolition, or removal of existing structures that would trigger Rule 4002. However, should any such activities arise during Project implementation (incidental structures or future expansions), the Proponent commits to full compliance, including

pre-activity asbestos surveys, notifications to the District at least 10 working days in advance (via approved forms), proper abatement by certified contractors if ACM is present, and emission controls to prevent release of regulated asbestos-containing material (RACM). The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly lists the rules and reasoning for confirming compliance with SJVAPCD Rule 4002.

Response to Comment 2-8d: District Rule 4601 – Architectural Coatings

The commenter notes that the Project may be subject to Rule 4601 (Architectural Coatings) due to potential use of paints, varnishes, or sealers. The Initial Study does not specifically address Rule 4601 but commits to compliance with all applicable District rules. The Project proponent will ensure that any architectural coatings used comply with Rule 4601 requirements for VOC emissions, storage, cleanup, and labeling. The Air Quality Section will be revised to explicitly list Rule 4601. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly lists the rules and reasoning for confirming compliance with SJVAPCD Rule 4601.

Response to Comment 2-8e: District Regulation VIII – Fugitive PM10 Prohibitions

The commenter states that the Project may require a Construction Notification Form or Dust Control Plan under Regulation VIII, Rule 8021, depending on the area disturbed or volume of material moved. The Air Quality Section of the Initial Study references compliance with Regulation VIII and includes a Fugitive Dust Emissions Control Plan (Appendix H). The Project proponent will submit a Construction Notification Form for the 1-acre disturbance and a Dust Control Plan if the disturbance exceeds 5 acres or involves moving more than 2,500 cubic yards per day, as required by Rule 8021. No revisions to the Initial Study are warranted. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly lists the rules and reasoning for confirming compliance with District Regulation VIII

Response to Comment 2-8f: Other District Rules and Regulations

The commenter notes that Rule 4550 (Conservation Management Practices) and 4570 (Confined Animal Facilities) are specific to animal operations and will need to be followed. Additionally, the Project may be subject to Rules 4102 (Nuisance) and 4641 (Cutback, Slow Cure, and Emulsified Asphalt). The Initial Study commits to other applicable District rules but does not specifically list these. The Project proponent will ensure compliance with Rule 4102 to prevent public nuisances, Rule 4550 through implementation of Conservation Management Practices for fugitive dust from agricultural operations, and Rule 4641 if applicable to paving activities. The Air Quality Section will be revised to explicitly list Rules 4102, 4550, 4641, and 4570 as applicable, noting that the Project will implement Conservation Management Practices per Rule 4550 and comply with nuisance and asphalt-related requirements as needed. Additionally, a Phase II Rule 4570 Permit

Application Form will be completed for the Project. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2a: explicitly lists the rules and reasoning for confirming compliance with SJVAPCD Rules 4102, 4550, 4570, and 4641.

Tulare County Health and Human Services Agency (Letter 3)

Response to Comment 3-1

Kings County acknowledges the comment letter dated May 29, 2025, from the Tulare County Health & Human Services Agency. The letter does not provide specific comments or concerns regarding the Project or the Initial Study.

Kings County Fire Department (Letter 4)

Response to Comment 4-1: All-Weather Access Roads Specifications

The commenter requires all-weather access roads of at least 20 feet in width and 13 feet 6 inches in vertical clearance, capable of supporting heavy fire apparatus, per the California Fire Code. The Transportation Section in the Initial Study confirms that primary access via Houston Avenue accommodates large agricultural vehicles and meets fire code standards. The Project proponent will verify that all on-site access roads meet these specifications. The Initial Study will be updated to clarify "All on-site access roads shall be all-weather, at least 20 feet wide, with 13 feet 6 inches of vertical clearance, capable of supporting heavy fire apparatus, as verified by the Kings County Fire Department." The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.9 Transportation, Impact 5.9d: The EIR updates the Transportation Section to clarify that all on-site access roads meet California Fire Code specifications (20 feet wide, 13 feet 6 inches vertical clearance, capable of supporting heavy fire apparatus).

Response to Comment 4-2: Fire Extinguishers

The commenter requires a 2A 10BC fire extinguisher located in plain sight, no more than 75 feet from any point in the structure, easily accessible, visible, near entrances or exits, mounted securely, and at a height compliant with the California Fire Code. The Initial Study does not specifically address fire extinguishers. The Project proponent will ensure that all structures (e.g., free stall barn, maternity barn, shop) are equipped with 2A 10BC fire extinguishers meeting these specifications, with locations approved by the Kings County Fire Department during plan review. The Initial Study will be revised to include "All structures shall be equipped with 2A 10BC fire extinguishers, located no more than 75 feet from any point, easily accessible, visible, near entrances or exits, securely mounted, and at a height compliant with the California Fire Code. Extinguisher locations shall be approved by the Kings County Fire Department during plan review." The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7g: Mitigation Measure HAZ-5 requires 2A 10BC fire extinguishers in all structures, meeting California Fire Code specifications.

Response to Comment 4-3: Employee Training on Fire Safety Equipment

The commenter states that employees should be familiar with the use of fire safety equipment. The Initial Study does not address employee training but notes compliance with safety regulations in the Hazards and Hazardous Materials Section. The Project proponent will implement a training program for employees on the use of fire safety equipment, including fire extinguishers. The Hazards and Hazardous Materials Section will be updated to note this. This comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7g: The EIR states that the Project Proponent will implement a training program/

Response to Comment 4-4: Fire Protection System Inspections

The commenter requires that any fire protection system be up to date on required inspections and tests and approved by the Kings County Fire Department. The Initial Study does not mention fire protection systems, as the Project primarily relies on on-site water infrastructure (Utilities and Service Systems Section). If a fire protection system (e.g., sprinklers) is installed, the Project proponent will ensure it is inspected and tested per California Fire Code requirements, with documentation submitted to the Kings County Fire Department for approval prior to operation. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7g: Mitigation Measure HAZ-6 requires that if a fire protection system (e.g., sprinklers) is installed, it shall be inspected and tested per California Fire Code requirements, with documentation of compliance submitted to the Kings County Fire Department for approval prior to operation.

Response to Comment 4-5: Compliance with California Fire Code and Kings County Fire Department Regulations

The commenter requires that all plans comply with the California Fire Code and Kings County Fire Department regulations. These will be updated for clarity stating that all project plans shall be reviewed and approved by the Kings County Fire Department to ensure compliance with the California Fire Code and local fire regulations. The Project proponent will ensure that all plans, including building and site plans, are reviewed and approved by the Kings County Fire Department to confirm compliance with these regulations. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7g has been updated to ensure that All Project plans shall be reviewed and approved by the Kings County Fire Department to ensure compliance with the California Fire Code and local fire regulations.

Response to Comment 4-6: Fire Apparatus Access Distance and Turnaround Provisions

The commenter requires that no structure or future structure be farther than 150 feet from fire apparatus access, with access roads and adequate turnaround provisions provided if this distance is exceeded. The Transportation Section in the Initial Study states that access roads meet fire code standards but does not specify distances or turnaround provisions. The Initial Study will be updated to clarify that all structures and future structures will be within 150 feet from fire apparatus access and provided with adequate turnaround provisions if exceeded, per California Fire Code requirements. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.9 Transportation, Impact 5.9d: The EIR updates the Transportation Section to ensure structures are within 150 feet of fire apparatus access with adequate turnaround provisions.

Response to Comment 4-7: Address Identification

The commenter requires address identification per California Fire Code Section 505.1. The Initial Study does not include address identification but notes compliance with fire codes (Utilities and Service Systems Chapter and the Wildfire Chapter of the Initial Study). The Project proponent will install an address signage at the main entrance (12252 7th Ave., Hanford) and other key locations, meeting CFC Section 505.1 requirements for visibility and size, with details approved by the Kings County Fire Department. The Initial Study will be updated to clarify that this will be included. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7f: Mitigation Measure HAZ-4 requires installing address signage per California Fire Code Section 505.1, with details approved by the Kings County Fire Department.

Response to Comment 4-8: Future Development Compliance

The commenter states that any future development must comply with applicable Fire Code, including rural firefighting water supply requirements. The Project proponent acknowledges that any future expansions or developments on the site will comply with the California Fire Code and Kings County Fire Department requirements, including rural water supply standards. No revisions to the Initial Study are warranted, as the comment pertains to future actions not currently proposed. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

California Department of Transportation (Letter 5)

***Response to Comment 5-1*:**

Kings County acknowledges the comment letter dated from Caltrans regarding the Sozinho Dairy #5 Project of May 27th, 2025. The letter states that the Project is anticipated to have a minimal impact related minimal impact on the State Highway System and Caltrans has no comment. No revisions to the Initial Study are warranted. The comment letter has been forwarded to Kings County's decision-makers for their review and consideration.

Kings County Environmental Health Services (Letter 6)

Response to Comment 6-1: Agricultural Material Composting Operations

The commenter notes that the proposed project meets the definition of an excluded activity under Title 14 of the California Code of Regulations (CCR) §17855(a)(1), as it involves handling agricultural material derived from and returned to the same or an owned/leased agricultural site, with no more than 1,000 cubic yards of compost product given away or sold annually. The commenter also states that Kings County Environmental Health Services, as the Local Enforcement Agency (LEA), or a CalRecycle representative may inspect to verify compliance and take enforcement action if necessary. The Project proponent acknowledges the LEA's authority to conduct inspections and will ensure ongoing compliance with §17855(a)(1) by limiting off-site compost distribution to 1,000 cubic yards annually. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.10, Impacts 5.10d and 5.10e recognize that the Project's composting operations meet the definition of an excluded activity under 14 CCR §17855(a)(1) , acknowledging the LEA's inspection authority, and ensuring that off-site compost distribution is limited to 1,000 cubic yards annually.

Response to Comment 6-2: CUPA Program

The commenter states that the Hazardous Materials Business Plan (HMBP) submitted to the California Environmental Reporting System (CERS) was marked as "NOT ACCEPTED" and requires a complete submittal within 30 days for facilities with reportable quantities of hazardous materials (e.g., 55 gallons of liquid, 500 pounds of solid, or 200 cubic feet of gas). The commenter also requires registration as a hazardous waste generator for materials like used oil, filters, antifreeze, and batteries, with proper management per California Health and Safety Code (HSC) Chapter 6.5 and Title 22 CCR. The Project proponent will revise and resubmit the HMBP to CERS, addressing all agency comments and including all required elements. Additionally, the proponent will register with Kings County EHS as a hazardous waste generator prior to operation and ensure proper management of hazardous wastes. These requirements will be incorporated into the Initial Study to ensure compliance. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Mitigation Measure HAZ-1 requires the Project proponent to, Submit a complete HMBP to CERS, addressing all agency comments, Register as a hazardous waste generator with Kings County EHS, Ensure proper management of hazardous wastes per HSC Chapter 6.5 and Title 22 CCR.

Response to Comment 6-3: Valley Fever

The commenter highlights the risk of Valley Fever due to Coccidioides immitis in Kings County soils and recommends effective dust control during construction to reduce risks to workers and nearby residents, referencing the California Department of Public Health's fact sheet and coordination with the SJVAPCD for dust control techniques. The Air Quality Section of the Initial Study addresses fugitive dust control through compliance with SJVAPCD Regulation VIII and

includes a Fugitive Dust Emissions Control Plan (Appendix H). To address the specific concern about Valley Fever, the Project proponent will incorporate Valley Fever prevention measures into the dust control plan, such as worker education, respiratory protection, and enhanced dust suppression techniques (e.g., wetting soils, stabilizing disturbed areas), as recommended by the California Department of Public Health. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2 Air Quality, Impact 5.2c: The EIR incorporates Valley Fever prevention measures into the Fugitive Dust Emissions Control Plan (Appendix H), and is discussed in impact 5.2c.

Kings County Public Works Department (Letter 7)

Response to Comment 7-1: Conformance with Kings County Improvement Standards

The commenter requires that all requirements hereafter conform to the Kings County Improvement Standards. The Transportation Chapter Initial Study states that access roads and infrastructure for the Sozinho Dairy #5 Project comply with public works standards, including those for large agricultural vehicles. The Project proponent will ensure that all improvements, including roads, drive approaches, and drainage systems, are designed and constructed in accordance with the Kings County Improvement Standards. Compliance will be verified by the Kings County Public Works Department through review of improvement drawings prior to construction. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR:

5.9 Transportation: The section evaluates transportation impacts and confirms that the Project's access roads and infrastructure, including those for large agricultural vehicles, are designed to comply with public works standards. This aligns with the comment's requirement for conformance with Kings County Improvement Standards. Impact 5.9d states that primary vehicular access via Houston Avenue is adequately sized and designed to accommodate emergency vehicles, and the Project includes all-weather access roads meeting Kings County Fire Department requirements (minimum 20 feet wide, 13 feet 6 inches vertical clearance, capable of supporting heavy fire apparatus). These specifications indicate adherence to county standards for road design. Mitigation Measures TRANS-1 and TRANS-2 are implemented to ensure compliance with circulation system plans, ordinances, or policies, which include Kings County Improvement Standards. These measures address potential conflicts and ensure that infrastructure improvements align with county requirements.

5.10 Utilities and Service Systems Section: The EIR addresses drainage systems, another component of the Kings County Improvement Standards mentioned in the comment. Section 5.10.2 describes the Site's strategic grading to direct surface water toward designated collection and treatment basins, preventing water accumulation and contamination. Impact 5.10a further details the Stormwater Pollution Prevention Plan (SWPPP), which ensures stormwater is contained on-site with retention ponds maintaining a 2-foot vertical separation from groundwater, consistent with county standards for drainage infrastructure.

Response to Comment 7-2: Approval of Alternatives by Public Works Department

The commenter requires that all alternatives to Public Works requirements be approved by the Kings County Public Works Department. The Public Services, Transportation, and Utilities and Service Systems Chapters in the Initial Study do not propose specific alternatives to Public Works standards but commits to compliance with applicable standards for infrastructure and access. The Project proponent will coordinate with the Public Works Department to ensure that any proposed alternatives to standard requirements (e.g., non-standard road materials or drainage designs) are submitted for review and approval prior to implementation. Although the Project aligns with standard requirements the Transportation and Utilities and Service Systems Chapters

will be updated to clarify that and alternatives will need to be approved by the Public Works Department. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: The Transportation and Utilities and Service Systems Chapters were updated to clarify that and alternatives will need to be approved by the Public Works Department.

Response to Comment 7-3: Encroachment Permit for Work in County Right-of-Way

The commenter requires an encroachment permit for any work in the county right-of-way. The Required Approvals section of the Project Description notes that Kings County Encroachment Permits will be required. However, the Transportation Chapter in the Initial Study notes that access roads comply with public works standards but does not mention encroachment permits. The Project proponent will obtain an encroachment permit from the Kings County Public Works Department for any work within the county right-of-way, such as construction of asphalt concrete drive approaches, prior to commencing such activities. The Transportation chapter will be updated to add that the permit would be required for any work within the county right-of-way, including construction of drive approaches, prior to commencing such activities. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Mitigation Measure TRANS-2 requires that the Project proponent shall obtain an encroachment permit from the Kings County Public Works Department for any work within the county right-of-way, including construction of drive approaches, prior to commencing such activities.

Response to Comment 7-4: Asphalt Concrete Drive Approaches

The commenter requires asphalt concrete drive approaches at all points of ingress from a county-maintained road, sloped to prevent water runoff toward the roadway. The Transportation Chapter of the Initial Study mentions access via Houston Avenue but does not specify drive approach details. The Project proponent will construct asphalt concrete drive approaches at all ingress points from county-maintained roads, designed to slope away from the roadway per Kings County Improvement Standards, with details included in improvement drawings submitted to the Public Works Department. The Transportation Chapter and the Parking and Access section in the Project will be revised to clarify that Asphalt concrete drive approaches shall be constructed at all points of ingress from county-maintained roads. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Mitigation Measure TRANS-1 requires that that all Project improvements, including roads and asphalt concrete drive approaches, conform to Kings County Improvement Standards. Improvement drawings shall be submitted to the Kings County Public Works Department for approval prior to construction.

Response to Comment 7-5: On-Site Drainage Containment

The commenter requires that all drainage be contained on-site. The Hydrology and Water Quality and the Utilities and System Services chapters of the Initial Study state that the Project's stormwater management system is designed to manage runoff on-site without exceeding existing drainage capacity, with retention ponds maintaining a minimum vertical separation of 2 feet from groundwater. The Project proponent will ensure that all drainage is contained on-site in compliance with Kings County Improvement Standards, with details included in the Storm Water Pollution Prevention Plan that is required as Mitigation Measure HYD-2. The Hydrology and Water Quality and the Utilities and System Services chapters will be updated to clarify that all drainage shall be contained on-site per Kings County Improvement Standards. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Mitigation Measure UTIL-1 requires that all drainage is contained on-site per Kings County Improvement Standards, as detailed in the Storm Water Pollution Prevention Plan (SWPPP, Appendix H). The SWPPP shall be submitted to the Kings County Public Works Department prior to construction, with compliance verified during site inspections.

Response to Comment 7-6: Drive Approaches at All Points of Ingress

The commenter requires that drive approaches be constructed at all points of ingress from a county-maintained road, sloped to prevent water runoff toward the roadway. The Transportation Chapter of the Initial Study mentions access via Houston Avenue but does not specify drive approach details. The Project proponent will construct asphalt concrete drive approaches at all ingress points from county-maintained roads, designed to slope away from the roadway per Kings County Improvement Standards. The Transportation Section of the Initial Study will be updated to The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Mitigation Measure TRANS-1 requires that that all Project improvements, including roads and asphalt concrete drive approaches, conform to Kings County Improvement Standards. Improvement drawings shall be submitted to the Kings County Public Works Department for approval prior to construction.

Department of Conservation Letter (Letter 8)

Response to Comment 8-1: Conformance with Kings County Improvement Standards

Kings County and the Project Proponent acknowledge the comment letter dated October 17, 2025, from the California Geologic Energy Management Division (CalGEM) of the Department of Conservation regarding the Project. The letter provides guidance on re-abandonment responsibilities under Public Resources Code (PRC) section 3208.1 for previously plugged and abandoned oil, gas, or geothermal wells that may be impacted by the Project, including recommendations for site evaluation, access maintenance, leak testing, and compliance with abandonment standards. The enclosure indicates no wells are located within or nearby the parcel boundary. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

To address CalGEM's recommendations, the Project Proponent will coordinate with CalGEM prior to and during construction to confirm the absence of wells and ensure compliance with PRC sections 3208 and 3208.1. If any wells are encountered during development activities, the Proponent will immediately notify CalGEM, conduct leak testing for liquids and gases, and submit a Notice of Intention (NOI) through WellSTAR for any required abandonment or re-abandonment work. The Proponent will maintain sufficient access to any identified wells, avoiding construction that impedes access, and ensure well casings comply with California Code of Regulations (CCR) section 1723.5 (cut off at least 5 feet but no more than 10 feet below final grade). Any soil containing hydrocarbons discovered during grading or excavation will be disposed of in accordance with local, state, and federal laws, with notification to appropriate authorities. Information regarding any wells will be recorded with the Kings County Recorder for inclusion in the property title. The Project Proponent acknowledges CalGEM's statutory authority, and commits to obtaining necessary permits for well-related work.

Addressed in EIR: Section 5.7 Hazards and Hazardous Materials, Impact 5.7b: The EIR evaluates potential hazards from oil, gas, or geothermal wells based on CalGEM's Well Finder database, confirming no wells are present on or near the Project site. Construction plans include protocols for well identification, leak testing, and access maintenance if wells are encountered, ensuring impacts related to well integrity and re-abandonment remain less than significant with implementation of these measures in Mitigation Measure HAZ-2.

California Department of Fish and Wildlife 11-7-2025 (Letter 9)

Response to Comment 9-1: Swainson's Hawk Survey Protocol and Mitigation Measures

The commenter states that Mitigation Measures in the Initial Study are insufficient to reduce potentially significant impacts to Swainson's hawk to a less-than-significant level and recommends that a qualified biologist conduct full protocol-level surveys following the Swainson's Hawk Technical Advisory Committee (SWHA TAC 2000) methodology as part of the biological technical studies supporting the DEIR, implementation of a minimum ½-mile no-disturbance buffer around active nests, and, if full avoidance is not feasible, consultation with CDFW for incidental take authorization.

Kings County and the Project Proponent acknowledge CDFW's recommendation and have revised the mitigation measures accordingly. Mitigation Measure BIO-1 (revised) now explicitly requires a qualified biologist to conduct full protocol-level Swainson's hawk surveys in accordance with the Swainson's Hawk Technical Advisory Committee (2000) methodology for both the Draft EIR impact analysis and pre-construction verification.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-1 (revised) and BIO-1.2 (new) require full SWHA TAC (2000) protocol surveys, a 0.5-mile no-disturbance buffer, and mandatory CDFW consultation/ITP if necessary.

Response to Comment 9-2: Tricolored Blackbird

The commenter recommends focused tricolored blackbird colony surveys no more than 10 days prior to ground disturbance and a minimum 300-foot no-disturbance buffer around active colonies, with an ITP required if avoidance is not feasible.

Kings County and the Project Proponent acknowledge the recommendation. New Mitigation Measure BIO-3.3 requires a qualified biologist to conduct focused tricolored blackbird colony surveys no more than 10 days prior to any ground-disturbing activity occurring during the nesting season. Mitigation Measure BIO-3.4 requires a minimum 300-foot no-disturbance buffer around any active colony. If full avoidance is not feasible, the Project Proponent will consult with CDFW and obtain an Incidental Take Permit prior to any take.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-3.3 (new) and BIO-3.4 (new) require focused pre-construction surveys and a 300-foot buffer.

Response to Comment 9-3: Western Burrowing Owl

The commenter states that Mitigation Measures are insufficient, that passive relocation constitutes take without an ITP (given the species' current CESA candidate status and full

protection), and recommends full surveys per the 2012 Staff Report on Burrowing Owl Mitigation, implementation of the report's no-disturbance buffers, and an ITP if take cannot be avoided.

Kings County and the Project Proponent acknowledge the recommendation. Mitigation Measure BIO-2 (revised) now requires surveys conducted in accordance with the CDFW 2012 Staff Report on Burrowing Owl Mitigation for both the breeding and wintering seasons. New Mitigation Measure BIO-2.4 prohibits passive relocation without prior CDFW authorization and requires implementation of the buffer distances contained in the 2012 Staff Report. If take cannot be avoided, the Project Proponent will obtain an Incidental Take Permit prior to any ground disturbance.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-2.1 (revised) and BIO-2.4 (new) fully incorporate the Staff Report requirements and prohibit passive relocation without ITP.

Response to Comment 9-4: Crotch's Bumble Bee

The commenter recommends a habitat assessment for Crotch's bumble bee and, if suitable habitat is present, focused surveys using the 2023 CDFW survey protocol.

Kings County and the Project Proponent acknowledge the recommendation. New Mitigation Measure BIO-4.1 requires a qualified biologist to conduct a habitat assessment for Crotch's bumble bee. If potentially suitable habitat is present, Mitigation Measure BIO-4.2 requires protocol-level surveys per CDFW's 2023 Approved Survey Methodology. If the species is detected and impacts cannot be avoided, the Project Proponent will consult with CDFW and obtain take authorization if required.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. New Mitigation Measures BIO-4.1 and BIO-4.2 require habitat assessment and protocol surveys.

California Department of Fish and Wildlife 3-26-2026 (Letter 10)

Response to Comment 10-1: Tricolored Blackbird

The commenter recommends expanding the tricolored blackbird nesting season to February 1 – September 15, conducting focused colony surveys no more than 10 days prior to construction, and maintaining a 300-foot no-disturbance buffer around active colonies, with consultation and an Incidental Take Permit (ITP) required if avoidance is not feasible.

Kings County and the Project Proponent acknowledge the recommendation. Mitigation Measure BIO-3.3 has been revised to require focused colony surveys no more than 10 days prior to ground disturbance during the expanded nesting season (February 1 – September 15). Mitigation Measure BIO-3.4 requires a minimum 300-foot no-disturbance buffer around any active colony. If full avoidance is not feasible, the Project Proponent will consult with CDFW and obtain an ITP prior to any activity that could result in take.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-3.3 (revised) and BIO-3.4 (revised) incorporate the expanded survey window, 10-day pre-construction timing, 300-foot buffer, and ITP consultation requirements. These measures are included in the MMRP.

Response to Comment 10-3: Crotch's Bumble Bee

The commenter recommends a habitat assessment followed by protocol-level surveys using the 2023 CDFW survey protocol titled "Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species." If Crotch's bumble bee is detected and impacts cannot be avoided, a 50-foot no-disturbance buffer around small mammal burrows and thatched/bunch grasses is required, along with consultation and potential CESA ITP.

Kings County and the Project Proponent acknowledge the recommendation. Mitigation Measure BIO-4.1 has been revised to require a qualified biologist to conduct a habitat assessment and, if suitable habitat is present, protocol-level surveys using the 2023 CDFW survey protocol. Mitigation Measure BIO-4.2 has been revised to require a 50-foot no-disturbance buffer around small mammal burrows and thatched/bunch grasses and consultation with CDFW for avoidance or ITP acquisition if the species is detected.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-4.1 and BIO-4.2 (revised) incorporate the corrected protocol title, habitat assessment, protocol surveys, 50-foot buffers, and CESA ITP consultation. These measures are included in the MMRP.

Response to Comment 10-4: Western Spadefoot

The commenter notes the Project is within the geographic range of western spadefoot and recommends a habitat assessment (BIO-5.1), focused surveys if suitable habitat is present (BIO-

5.2), and minimization measures including a 50-foot no-disturbance buffer around burrows, cracks, loose soil, and potential breeding habitat (including agricultural sumps and ditches, even when dry) (BIO-5.3). If the species becomes listed under CESA, an ITP may be required.

Kings County and the Project Proponent acknowledge the recommendation and have added three new mitigation measures. BIO-5.1 requires a habitat assessment. BIO-5.2 requires focused surveys if suitable habitat is identified. BIO-5.3 requires a 50-foot no-disturbance buffer around refugia and breeding habitat (even when dry) and cessation of work if individuals are observed. Early consultation with CDFW is recommended if the species becomes a CESA candidate or listed.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. New Mitigation Measures BIO-5.1, BIO-5.2, and BIO-5.3 have been added for western spadefoot habitat assessment, surveys, and minimization. These measures are included in the MMRP.

Response to Comment 10-5: Nesting Birds

The commenter recommends conducting ground-disturbing activities outside the nesting season (February 1 – September 15) when feasible; pre-construction nest surveys no more than 10 days prior to disturbance; behavioral baseline establishment and continuous monitoring of active nests; and, if monitoring is not feasible, minimum 250-foot buffers for non-listed birds and 500-foot buffers for non-listed raptors (with variance procedures).

Kings County and the Project Proponent acknowledge the recommendation. Mitigation Measures BIO-3.1 and BIO-3.2 have been revised to incorporate the expanded nesting season, 10-day pre-construction surveys, behavioral monitoring, continuous monitoring requirements, protective buffers, and CDFW consultation procedures for variances.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources. Mitigation Measures BIO-3.1 and BIO-3.2 (revised) fully incorporate all nesting bird survey timing, monitoring, buffer, and variance requirements. These measures are included in the MMRP.

Response to Comment 10-6: California Natural Diversity Database (CNDDB) Positive Submission of Data and Environmental Data

The commenter reminds the Lead Agency of the requirement to submit any special-status species or natural communities detected during Project surveys to the CNDDB per Pub. Resources Code § 21003(e).

Kings County and the Project Proponent acknowledge the recommendation. The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.3 Biological Resources (Regulatory Setting).

San Joaquin Valley Air Pollution Control District 3-30-2026 (Letter 11)

Response to Comment 11-1: Air Quality Mitigation Measures AQ-5, AQ-8, & AQ-11

Kings County and the Project Proponent acknowledge the San Joaquin Valley Air Pollution Control District's comment dated March 30, 2026 (District CEQA Reference No: 20260131) regarding responsibility for monitoring Mitigation Measures AQ-5, AQ-8, and AQ-11 in the MMRP. The District has clarified that monitoring and enforcement of these measures fall outside its regulatory authority.

To address this comment, the MMRP table in Section 9.2 has been revised to designate the Kings County Community Development Agency as the sole responsible agency for implementation and monitoring of AQ-5, AQ-8, and AQ-11.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 9 (Mitigation Monitoring and Reporting Program), Table 9-1 – MMRP responsibility column revised for AQ-5, AQ-8, and AQ-11.

Response to Comment 11-2: Air Quality Mitigation Measure AQ-12

Kings County and the Project Proponent acknowledge the District's comment regarding responsibility for Mitigation Measure AQ-12. The District has indicated that implementation and monitoring of operational practices for mobile sources are outside its regulatory jurisdiction.

The MMRP table has been revised to designate the Kings County Community Development Agency as the sole responsible agency for AQ-12.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 9 (Mitigation Monitoring and Reporting Program), Table 9-1 – MMRP responsibility column revised for AQ-12.

Response to Comment 11-3: Health Risk Screening/Assessment

Kings County and the Project Proponent acknowledge the District's comments on the Health Risk Assessment (HRA). The HRA evaluated on-site residences and confirmed they are occupied solely by dairy employees. Per SJVAPCD guidance, employee housing is not treated as a sensitive receptor. No non-employee occupied residences exist on-site. Therefore, the HRA conclusions remain valid and the Project is below all applicable health risk thresholds. No revisions to the HRA were required.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.2.4. Additional clarification added regarding on-site employee housing and receptor analysis.

Central Valley Regional Water Quality Control Board 03-19-2026 (Comment Letter 12)

Response to Comment 12-1

Central Valley Water Board staff determined that the information provided in the Draft EIR is insufficient to demonstrate the protective measures associated with the existing reception pit. Staff confirmed with the project proponent that the reception pit is an existing structure located within the production area of the Dairy. The Board requires additional documentation describing how the reception pit, as currently constructed or modified, incorporates preventative measures to minimize or eliminate the potential for dairy wastewater infiltration to groundwater.

To address this comment, the project proponent will submit a BIDA project design report to the Central Valley Water Board that includes detailed engineering information on the existing reception pit. Upon completion of the BIDA system, a Post-Construction Report will be prepared and submitted. The Post-Construction Report will include as-built documentation of the reception pit, identifying materials used and describing the preventative measures incorporated to minimize or eliminate dairy wastewater infiltration to groundwater, consistent with the requirements of Order No. R5-2013-0122.

This commitment is implemented through new Mitigation Measure HYD-4.

The comment is noted for the record and has been forwarded to Kings County's decision-makers for their review and consideration.

Addressed in EIR: Section 5.8 Hydrology and Water Quality

CALIFORNIA Water Boards

GAVIN NEWSOM
GOVERNOR

YANA GARCIA
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

6 June 2025

Victor Hernandez, Project Planner
1400 West lacey Boulevard, Engineering Building #6
Hanford, CA 93230
Email: Victor.hernandez@co.kings.ca.us

COMMENTS ON CONDITIONAL USE PERMIT NO. 24-03 FOR SOZINHO DAIRY #5, 7205 HOUSTON AVENUE, HANFORD, KINGS COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff have received your Project Review – Consultation Notice for Conditional Use Permit No. 24-03 (CUP) that proposes to expand an existing dairy located at 7205 Houston Avenue with a mailing address of 12252 7th Avenue in Hanford (Sozinho Dairy #5). The Dairy is currently enrolled under Order No. R5-2013-0122, Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Reissued General Order). Based on the CUP, the proponent proposes expanding the footprint of the Dairy to install a post manure organic processing area, a post biodynamic aerobic (BIDA) bed organic matter processing area, a processing and product storage area, a reception pit, two mechanical separators, one tank on a concrete pad for solid separation and collection, two lift stations, and five process water processing beds (BIDA beds), along with two earthen berms to trisect an existing wastewater pond. The project does not propose an expansion of the herd size.

The Central Valley Water Board, in its role as responsible agency, has reviewed the CUP and believes that there could be minimal impacts to the environment created by the project from runoff when managing dairy waste on pervious soils that are proposed to be converted from the land application area to a Production Area. The Central Valley Water Board does not believe that the proposed project, as described in the CUP, requires an Environmental Impact Report to satisfy the California Environmental Quality Act. In addition, the Central Valley Water Board staff have identified several items described in the CUP that require additional clarification to remain in compliance with the Reissued General Order. The discharger will be notified of these items under separate cover.

Any questions regarding this matter should be directed to Lewis Lummen of this office at (559) 445-5561 or at Lewis.Lummen@waterboards.ca.gov.

Scott J. Hatton
Supervising Engineer

cc: Sozinho Dairy #5, 12252 7th Avenue, Hanford
Kyle Parreira, 4Creeks Inc., Fresno (email)
Livingston Dairy Consulting, Tulare (email)

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

October 20, 2025

Victor Hernandez
County of Kings
Community Development
1400 W. Lacey Blvd, Building 6
Hanford, CA, 93230

Project: Notice of Preparation of a Draft Environmental Impact Report for Sozinho Dairy #4 Condition Use Permit Number 24-03

District CEQA Reference No: 20251170

Dear Mr. Hernandez:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the County of Kings (County) for the Sozinho Dairy #4 project. Per the NOP, the project consists of facility upgrades including organic matter processing areas, advanced process water treatment using BIDA beds with vermifiltration, and new animal housing and feed storage structures to enhance nutrient recycling, environmental management, and animal comfort without increasing herd size. (Project). The Project is located at 7205 Houston Avenue, in Hanford, CA.

The District offers the following comments at this time regarding the Project:

1) Project Related Emissions

At the federal level under the National Ambient Air Quality Standards (NAAQS), the District is designated as extreme nonattainment for the 8-hour ozone standards and serious nonattainment for the particulate matter less than 2.5 microns in size (PM2.5) standards. At the state level under California Ambient Air Quality Standards (CAAQS), the District is designated as nonattainment for the 8-hour ozone, PM10, and PM2.5 standards.

The District's initial review of the Project concludes that emissions resulting from construction and/or operation of the Project may exceed any of the following significance thresholds as identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

www.valleyair.org www.healthyairliving.com

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The District recommends that a more detailed preliminary review of the Project be conducted for the Project's construction and operational emissions.

1a) Construction Emissions

The District recommends, to reduce impacts from construction-related diesel exhaust emissions, the Project should utilize the cleanest available off-road construction equipment.

1b) Operational Emissions

Operational (ongoing) air emissions from mobile sources and stationary sources should be analyzed separately. For reference, the District's significance thresholds are identified in the District's Guidance for Assessing and Mitigating Air Quality Impacts: https://ww2.valleyair.org/media/g4nl3p0g/gamaqi.pdf.

Recommended Mitigation Measure: At a minimum, project related impacts on air quality should be reduced to levels below the District's significance thresholds through incorporation of design elements such as the use of cleaner Heavy Heavy-Duty (HHD) trucks and vehicles, measures that reduce Vehicle Miles Traveled (VMTs), and measures that increase energy efficiency. More information on transportation mitigation measures can be found at: https://ww2.valleyair.org/media/ob0pweru/clean-air-measures.pdf

1c) Recommended Model for Quantifying Air Emissions

Project-related criteria pollutant emissions from construction and operational sources should be identified and quantified. Emissions analysis should be performed using the California Emission Estimator Model (CalEEMod), which uses the most recent CARB-approved version of relevant emissions models and emission factors. CalEEMod is available to the public and can be downloaded from the CalEEMod website at: www.caleemod.com.

2) Health Risk Screening/Assessment

The County should evaluate the risk associated with the Project for sensitive receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) in the area and mitigate any potentially significant risk to help limit exposure of sensitive receptors to emissions.

To determine potential health impacts on surrounding receptors (residences, businesses, hospitals, day-care facilities, health care facilities, etc.) a Prioritization and/or a Health Risk Assessment (HRA) should be performed for the Project. These health risk determinations should quantify and characterize potential Toxic Air

Contaminants (TACs) identified by the Office of Environmental Health Hazard Assessment/California Air Resources Board (OEHHA/CARB) that pose a present or potential hazard to human health.

Health risk analyses should include all potential air emissions from the project, which include emissions from construction of the project, including multi-year construction, as well as ongoing operational activities of the project. Note, two common sources of TACs can be attributed to diesel exhaust emitted from heavy-duty off-road earth moving equipment during construction, and from ongoing operation of heavy-duty on-road trucks.

Prioritization (Screening Health Risk Assessment):
A "Prioritization" is the recommended method for a conservative screening-level health risk assessment. The Prioritization should be performed using the California Air Pollution Control Officers Association's (CAPCOA) methodology. Please contact the District for assistance with performing a Prioritization analysis.

The District recommends that a more refined analysis, in the form of an HRA, be performed for any project resulting in a Prioritization score of 10 or greater. This is because the prioritization results are a conservative health risk representation, while the detailed HRA provides a more accurate health risk evaluation.

Health Risk Assessment:
Prior to performing an HRA, it is strongly recommended that land use agencies/ project proponents develop and submit for District review a health risk modeling protocol that outlines the sources and methodologies that will be used to perform the HRA.

A development project would be considered to have a potentially significant health risk if the HRA demonstrates that the health impacts would exceed the District's established risk thresholds, which can be found here: https://ww2.valleyair.org/permitting/ceqa/.

A project with a significant health risk would trigger all feasible mitigation measures. The District strongly recommends that development projects that result in a significant health risk not be approved by the land use agency.

The District is available to review HRA protocols and analyses. For HRA submittals please provide the following information electronically to the District for review:

- HRA (AERMOD) modeling files
- HARP2 files
- Summary of emissions source locations, emissions rates, and emission factor calculations and methodologies.

For assistance, please contact the District's Technical Services Department by:

- E-Mailing inquiries to: hramodeler@valleyair.org
- Calling (559) 230-5900

Recommended Measure: Development projects resulting in TAC emissions should be located an adequate distance from residential areas and other sensitive receptors to prevent the creation of a significant health risk in accordance to CARB's Air Quality and Land Use Handbook: A Community Health Perspective located at https://ww2.arb.ca.gov/our-work/programs/resource-center/strategy-development/land-use-resources.

3) Ambient Air Quality Analysis

An Ambient Air Quality Analysis (AAQA) uses air dispersion modeling to determine if emissions increases from a project will cause or contribute to a violation of State or National Ambient Air Quality Standards. The District recommends an AAQA be performed for the Project if emissions exceed 100 pounds per day of any pollutant.

An AAQA uses air dispersion modeling to determine if emission increase from a project will cause or contribute to a violation of State or National Ambien Air Quality Standards. An acceptable analysis would include emissions from both project-specific permitted and non-permitted equipment and activities. The District recommends consultation with District staff to determine the appropriate model and input data to use in the analysis.

Specific information for assessing significance, including screening tools and modeling guidance, is available online at the District's website: https://ww2.valleyair.org/permitting/ceqa/.

4) Voluntary Emission Reduction Agreement

Criteria pollutant emissions may result in emissions exceeding the District's significance thresholds, potentially resulting in a significant impact on air quality. When a project is expected to have a significant impact, the District recommends the DEIR also include a discussion on the feasibility of implementing a Voluntary Emission Reduction Agreement (VERA) for this Project.

A VERA is a mitigation measure by which the project proponent provides pound-for-pound mitigation of emissions increases through a process that develops, funds, and implements emission reduction projects, with the District serving a role of administrator of the emissions reduction projects and verifier of the successful mitigation effort. To implement a VERA, the project proponent and the District enter into a contractual agreement in which the project proponent agrees to mitigate project specific emissions by providing funds for the District's incentives programs.

The funds are disbursed by the District in the form of grants for projects that achieve emission reductions. Thus, project-related impacts on air quality can be mitigated. Types of emission reduction projects that have been funded in the past include electrification of stationary internal combustion engines (such as agricultural irrigation pumps), replacing old heavy-duty trucks with new, cleaner, more efficient heavy-duty trucks, and replacement of agricultural equipment with the latest generation technologies.

In implementing a VERA, the District verifies the actual emission reductions that have been achieved as a result of completed grant contracts, monitors the emission reduction projects, and ensures the enforceability of achieved reductions. After the project is mitigated, the District certifies to the Lead Agency that the mitigation is completed, providing the Lead Agency with an enforceable mitigation measure demonstrating that project-related emissions have been mitigated. To assist the Lead Agency and project proponent in ensuring that the environmental document is compliant with CEQA, the District recommends the environmental document includes an assessment of the feasibility of implementing a VERA.

5) Vegetative Barriers and Urban Greening

There are residential units located north of the Project. The District suggests the County consider the feasibility of incorporating vegetative barriers and urban greening as a measure to further reduce air pollution exposure on sensitive receptors (e.g., residential units).

While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, vegetative barriers have been shown to be an additional measure to potentially reduce a population's exposure to air pollution through the interception of airborne particles and the update of gaseous pollutants. Examples of vegetative barriers include, but are not limited to the following: trees, bushes, shrubs, or a mix of these. Generally, a higher and thicker vegetative barrier with full coverage will result in greater reductions in downwind pollutant concentrations. In the same manner, urban greening is also a way to help improve air quality and public health in addition to enhancing the overall beautification of a community with drought tolerant, low-maintenance greenery.

6) On-Site Solar Deployment

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the County consider incorporating solar power systems as an emission reduction strategy for the Project.

7) Nuisance Odors

While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress among the public and often resulting in citizen complaints.

The County should consider all available pertinent information to determine if the Project could have a significant impact related to nuisance odors. Nuisance odors may be assessed qualitatively taking into consideration the proposed business or industry type and its potential to create odors, as well as proximity to off-site receptors that potentially would be exposed to objectionable odors. The intensity of an odor source's operations and its proximity to receptors influences the potential significance of malodorous emissions. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact.

According to the District Guidance for Assessing and Mitigating air Quality Impacts (GAMAQI), a significant odor impact is defined as more than one confirmed complaint per year averaged over a three-year period, or three unconfirmed complaints per year averaged over a three-year period. An unconfirmed complaint means that either the odor or air contaminant release could not be detected, or the source of the odor could not be determined.

The District is available to assist the County with information regarding specific facilities and categories of facilities, and associated odor complaint records.

8) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

8a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888.

8b) District Rule 9510 - Indirect Source Review (ISR)

Per District Rule 9510 section 4.4.3, a development project on a facility whose primary functions are subject to District Rule 2201 or District Rule 2010 are exempt from the requirements of the rule. The District has reviewed the information provided and has determined that the primary functions of this Project are subject to District Rule 2201 (New and Modified Stationary Source Review Rule) or District Rule 2010 (Permits Required). As a result, District Rule 9510 requirements and related fees do not apply to the Project referenced above.

8c) District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002. This rule requires a thorough inspection for asbestos to be conducted before any regulated facility is demolished or renovated. Information on how to comply with District Rule 4002 can be found online at: https://ww2.valleyair.org/compliance/demolition-renovation/

8d) District Rule 4601 (Architectural Coatings)

The Project may be subject to District Rule 4601 since it may utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings. In addition, this rule specifies architectural coatings storage, cleanup and

labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at: https://ww2.valleyair.org/media/tkgjeusd/rule-4601.pdf

8e) District Regulation VIII (Fugitive PM10 Prohibitions)

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at: https://ww2.valleyair.org/media/fm3jrbsq/dcp-form.docx

Information about District Regulation VIII can be found online at: https://ww2.valleyair.org/dustcontrol

8f) Other District Rules and Regulations

The Project may also be subject to the following District rules: Rule 4102 (Nuisance) and Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt, Paving and Maintenance Operations).

The following rules are specific to confined animal operations:

- Rule 4102 (Nuisance) – This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the Project or construction of the Project creates a public nuisance, it could be in violation and be subject to District enforcement action.

- Rule 4550 (Conservation Management Practices) – The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. These sites include areas of crop production, animal feeding operations and unpaved roads/equipment areas. The District's CMP handbook can be found online at the District's website at: https://ww2.valleyair.org/media/ec4byngx/cmp_handbook.pdf.

- Rule 4570 (Confined Animal Facilities) – District Rule 4570 was adopted by the District's Governing Board on June 15, 2006. Dairies with greater than or equal to 500 milk cows are subject to the requirements of District Rule 4570. Therefore, a Rule 4570 application shall also be submitted to the District.

9) District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Eric McLaughlin by e-mail at eric.mclaughlin@valleyair.org or by phone at (559) 230-5808.

Sincerely,

Mark Montelongo
Director of Policy and Government Affairs



For: Daniel Martinez
Program Manager

Letter Number 3

TULARE COUNTY
HEALTH & HUMAN SERVICES AGENCY

Donna Ortiz
Agency Director

Karen M. Elliott, MBA • Director • Public Health Branch
Nilsa Gonzalez, REHS • Public Health Branch Deputy Director • Environmental Health Director

May 29, 2025

Victor Hernandez
Kings County Comm. Dev. Agency – Planning Div.
1400 W. Lacey Blvd. Engineering Bldg. #6
Hanford, CA 93230

Subject Property:
Sozinho Dairy No. 5
7205 Houston Avenue
Hanford, CA
APN: 016-200-005, 016-200-028 & 016-200-035

RE: Kings County Conditional Use Permit, CUP 24-03

This office has reviewed the above-referenced matter. Based upon our review, we have no comments for this project at this time.

Regards,

Kevin Bangsund, REHS
Environmental Health Specialist III
Environmental Health Services

cc: J. Gocke – TCEH

Letter Number 4

KINGS COUNTY FIRE DEPARTMENT
Community Risk Reduction Bureau
Education-Engineering-Enforcement

Fire Chief Luis Nevarez
Battalion Chief Blake Adney, Fire Marshal

FIRE DEPARTMENT COMMENT SHEET

Project Name: 4Creeks / Sozinho Dairy No. 5
Project Number: Conditional Use Permit No. 24-03
Address: 12252 7th Ave., Hanford, APN 016-200-005, 028, 029 and 035

☐ The Fire Department requires a supply of firefighting water available in a storage tank on the site. The amount of water required will be in accordance with NFPA 1142, and is dependent on building volume, construction type, and exact use.

☐ See Attachment for instructions on storage tank fire suppression requirements.

☐ See Attachment for instructions on swimming pool fire suppression requirements.

☐ Spacing for fire hydrants shall be no more than 500 feet.

☐ No structure shall be more than feet from a fire hydrant.

☐ Fire hydrants shall have two, two and one half inch outlets and one four and one half inch outlet. Outlets shall be equipped with national hose standard thread. All outlets shall be provided with caps to prevent debris from accumulating within the hydrant.

☐ Fire hydrants shall have a minimum of 36 inches of clear space around the hydrant and shall be a minimum of 6 inches above grade.

☐ Fire hydrants or water tank, and roads of an all weather surface capable of supporting heavy fire apparatus, shall be in place before combustible construction materials begin to accumulate.

☑ All weather access roads capable of supporting heavy fire apparatus, of not less than twenty feet width and thirteen feet six inches of vertical clearance, must be provided. Roads must comply with the California Fire Code.

☑ A 2A 10BC fire extinguisher is required to be located in plain sight not more than 75 feet from any point in the structure. The location of fire extinguishers must be easily accessible, be easily visible, and be near entrances or exit doors. All extinguishers shall be mounted to walls or columns with securely fastened hangers so that the weight of the extinguisher is adequately supported, and at a height compliant with the California Fire Code. Additional extinguishers may be required based upon special hazards or conditions.

- [x] Employees should be familiar with the use of fire safety equipment.
- [ ] A set of building plans must be reviewed by the Kings County Fire Department.
- [ ] The plot plan is inadequate to make a determination and the applicant should meet with the Kings County Fire Department for further information.
- [x] The fire protection system, if provided, must be up to date on required inspections and tests and be approved by the Kings County Fire Department.
- [x] All plans shall comply with the California Fire Code and all regulations of the Kings County Fire Department.
- [ ] Building must meet CFC requirements for emergency responder radio coverage. (CFC 510.1)
- [ ] Property must be equipped with a Knox Box for Fire Department access.
- [x] Adjustment shall not interfere with fire department access. No structure or future structure shall be farther than 150 feet from fire apparatus access. Access roads and adequate turnaround provisions shall be provided if fire apparatus access distance is exceeded.
- [x] Address identification required per Section 505.1 of the CFC.
- [x] Any future development must comply with applicable Fire Code, including rural firefighting water supply requirements.
- [ ] Other specifically:

Blake Adney — Battalion Chief/Fire Marshal

Name — **Title**

09/30/2024

Date

Letter Number 5

From: Yelton, Elizabeth@DOT
To: Hernandez, Victor
Cc: Padilla, Dave@DOT
Subject: Request for Comment - CUP 24-03 - Caltrans
Date: Tuesday, May 27, 2025 12:41:13 PM
Attachments: image001.png
image002.png
image003.png

Good afternoon Victor,

Regarding CUP 24-03, the conditional use permit for the expansion of an existing dairy plant operation located at 12252 7th Ave, Hanford, Caltrans has completed a review of the application. Given the nature of the proposed project, it is anticipated that the proposed project will have minimal impact on the State Highway System and Caltrans has no comment.

If you have any questions or comments, please contact me.

Thank you,

Elizabeth Yelton
Transportation Planner
California Department of Transportation
Office of Regional and Community Planning,
Local Development Review
Caltrans District 6
Phone: (559) 365-5140
1352 W. Olive Avenue
Fresno, CA 93778-2616

EXTERNAL EMAIL: Do not click any links or open any attachments unless you trust the sender and know the contents are safe.

Letter Number 6

From: Hullinger, Lindsay
To: Hernandez, Victor
Subject: RE: Request for Comments- CUP No. 24-03
Date: Tuesday, June 3, 2025 4:09:05 PM
Attachments: image002.png
image003.png
image004.png
image005.png

Good afternoon,

Kings County Environmental Health Services has the following comments for this project:

1. Agricultural Material Composting Operations:
   - Currently, the proposed project meets the definition of an excluded activity per Title 14 of the California Code of Regulations (CCR) §17855(a)(1): An activity is excluded if it handles agricultural material, derived from an agricultural site, and returns a similar amount of the material produced to that same agricultural site, or an agricultural site owned or leased by the owner, parent, or subsidiary of the composting activity. No more than an incidental amount of up to 1,000 cubic yards of compost product may be given away or sold annually.
   - Kings County Environmental Health Services acts as the Local Enforcement Agency (LEA) of solid waste handling operations. The LEA or a representative of CalRecycle are not precluded from conducting an inspection to verify that the activity is being conducted in a manner that qualifies as an excluded activity or from taking any appropriate enforcement action.
2. CUPA Program
   - The Hazardous Materials Business Plan (HMBP) included in this proposal, which has been submitted to the California Environmental Reporting System, has been marked as **NOT ACCEPTED** by this agency. Please access the submittal to review the comments. Dairies do tend to have reportable quantities of hazardous materials and are required to make annual submittals. The definition of "Hazardous Material" can be found in California Health & Safety Code (HSC) §25501(n), but generally includes substances commonly used for dairy operations, such as bulk quantities on fuel, lube oils, waste oil, teat dip, welding gases etc. The reportable quantity threshold (RQ) of most hazardous substances are 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of a gas. [HSC, Chapter 6.95; Title 19 CCR (§5030.1 - §5030.11)]
   - Any quantity of hazardous wastes generated by this operation, such as used oil, used oil filters, waste antifreeze, waste batteries, etc., must be managed in accordance with all applicable laws and regulations. Hazardous wastes cannot be disposed of into the municipal waste stream, storm sewer system, etc. The owner/operator must contact our office prior to operation to register with us as a hazardous waste generator if the facility will generate any hazardous wastes. [HSC, Chapter 6.5; Title 22 CCR, Division 4.5: Environmental Health Standards for the Management of Hazardous Waste]
   - Additional regulations may apply to this facility, however, the HMBP and hazardous waste programs are commonly required by dairy operations.
   - If this dairy does indeed have materials at or above reporting thresholds onsite, please make a complete submittal in CERS of all applicable elements (e.g., Facility, Inventory and site map, Hazardous Waste, Aboveground petroleum storage, Emergency Response plan) **within 30 days.**
3. Valley Fever
   - *Coccidiodes immiti,* the fungus that causes valley fever, a serious and potentially long-term respiratory illness, is endemic in the soils of Kings County. Construction activities that disturb soils containing the spores of the fungus can put workers and the nearby public at risk. Effective dust control must be always maintained on the job site in order to reduce the risk of valley fever to workers and nearby residents. More information regarding the prevention of work related valley fever is available at https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf . Contact the San Joaquin Valley Air Pollution Control District for more information on dust control techniques.

Please contact Lindsay Hullinger at lindsay.hullinger@co.kings.ca.us or (559) 852-4654 with any questions regarding these comments or requirements.

Thank you,

Lindsay Hullinger, MRC, REHS
Environmental Health Specialist II

Office Hours**: Mon.-Fri.:** 8:30am-5:00pm
Kings County Department of Public Health
Office: (559) 584-1411
Address: 460 Kings County Dr., Suite 102, Hanford, CA 93230
Email: lindsay.hullinger@co.kings.ca.us

www.kcdph.com

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"If we intend to provide a better life, and a better world, for future generations, we cannot ignore the quality of the environment we leave them." – J. Kasich

Letter Number 7

PUBLIC WORKS DEPARTMENT COMMENT SHEET

Project: CUP 24-03
Comments by: MRH
Date: 250611

General

	No Comments
X	That all requirements required hereafter conform to the Kings County Improvement Standards.
X	That all other alternatives to Public Works requirements must be approved by the Kings County Public Works Department.
	That a Deferred Improvement Agreement be entered into with the Kings County Public Works Department for completion of the following improvement(s):
	NO BUILDING PERMITS OR ZONING PERMIT SHALL BE ISSUED UNTIL RIGHT-OF-WAY HAS BEEN DEDICATED
	All improvements shall be constructed to meet City of Hanford standards. A copy of improvement drawings is to be sent to the City of Hanford.
X	Applicant shall secure an encroachment permit for any work in county r/w.
X	Applicant shall provide asphalt concrete drive approach(es).

Tentative Maps

	All proposals of the applicant are conditions of approval unless otherwise mentioned.
	A parcel map is required.
	A final map is required.
	A field survey may be required.
	Payment or Segregation required for Assessment district

	Road Right-of-Way and Access
	That access to the site from a public road must be provided and must be approved by the County.
	Additional right-of-way shall be dedicated. Right-of-way, access lanes and easements shall be cleared of all obstructions. The clearing of all right of way obstructions shall be at the expense of the owner. If dedication is not made within 30 days of approval of project any zoning permit*s* shall be revoked. R/W shall be dedicated at the following location(s):
	Traffic ingress and egress shall be _____.
	On site traffic circulation and parking shall be _____.
	Right-of-way will be dedicated to the County on behalf of the public and will not be accepted into the County maintained mileage.
	Maintenance of roads must be provided for in accordance with the Kings County Improvement Standard.
	Durable and dustless drive shall be constructed.

Street Appurtenances

	Curbs and gutters must be constructed in accordance with Design Tables 2011 and 2012 of the Kings County Improvement Standards.
	Curbs and gutters shall be installed but may be deferred until installation becomes feasible. In the interim, however, the developer shall provide for drainage water by containment on site.
	Sidewalks shall be constructed along _____, as shown in Design Table 2011 and 2012 of the Kings County Improvement Standards.
	That the developer must furnish and place _____ sign(s) installed in accordance with the Kings County Public Works Department.
	That the applicant is required to construct road in accordance with Section 302 of the Kings County Improvement Standards and it shall be _____.
	Developer shall provide a 100% Performance Bond for work done in the right-of-way when the value of the work is $10,000 or more, except when a) the work consists of only a drive approach or b) the work is

	covered under a subdivision improvement agreement. The value of the work will be determined by an Engineer's Estimate provided by the developer's engineer and approved by the County. Said bond will be provided on a form approved by the county and submitted prior to the granting of a building or zoning permit.

Drainage

X	All drainage shall be contained on-site
	That drainage for the site be into the storm drain system of the community.
	Developer shall be required to design and furnish drainage systems in accordance with Article 4 of the Kings County Improvement Standards.
	Drainage shall be into an existing ditch or slough as required in Section 404-A.
	Where there is no storm drainage system available, the development will be required to comply with the following: a) Drainage water will be contained on site in a private basin or sump in conforming to design standards set forth in Kings County Improvement Standards. b) Curbs, gutters, drainage fees and sidewalks shall be required, but shall be deferred in accordance with Section 110 of the Improvement Standards. The developer shall enter into an agreement with the County to install these improvements when a drainage system is available.

	Public Utilities
	The applicant is required to connect to the public agency (district) water supply system.
	The applicant is required to connect to the public agency (district) waste disposal system.
	Streetlights shall be installed at the following location(s) and shall conform to: _____

Miscellaneous

X	DRIVE APPROACHES SHALL BE CONSTRUCTED AT ALL POINTS OF INGRESS FROM A COUNTY MAINTAINED ROAD. APPROACHES SHALL BE SLOPED SO AS NOT TO ALLOW WATER TO RUN TOWARDS THE ROADWAY.
	Environmental issues
	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 the mitigation measures described on an attached sheet have been added to the project. A 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 significant effect(s) 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, if the effect is a "potentially significant impact" or "potentially significant unless mitigated." 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, there will not be a significant effect in this case because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project.

Solid Waste – Recycling – For establishment or expansion of a commercial operation.

	The applicant is required to acknowledge receipt of Notice of State Mandatory Organic and Commercial Requirement
	The applicant is to submit the County of Kings Public Works Department Commercial/Organics Recycling Form
	The applicant is to submit the County of Kings Request for Exemption from Mandatory Commercial/Organics Recycling Form if they are not making provision for commercial and/or organic recycling

California
Department of Conservation
Geologic Energy Management Division

Gavin Newsom, Governor
Jennifer Lucchesi, Director

October 17, 2025

VIA ELECTRONIC MAIL

Kings County Community Development Agency
Victor Hernandez
1400 W. Lacey Blvd., Building No. 6
Hanford, CA 93230

victor.hernandez@co.kings.ca.us

Assessor Parcel Number(s): 016200005, 016200028, 016200029, 016200035
Project Location Address: 7th Avenue & Houston Avenue

PROJECT TITLE: Conditional Use Permit No. 24-03 (4Creeks / Sozinho Dairy No. 5)

Public Resources Code (PRC) section 3208.1 establishes re-abandonment responsibility when previously plugged and abandoned oil, gas or geothermal wells will be impacted by planned property development or construction activities. Local permitting agencies, property owners, and/or developers should be aware of, and fully understand, that significant and potentially dangerous issues may be associated with development near previously abandoned oil, gas, and geothermal wells.

The California Geologic Energy Management Division (CalGEM) has received the above-referenced project dated October 9, 2025. To assist local permitting agencies, property owners, and developers in making safe and practical land use decisions regarding potential development near oil, gas, or geothermal wells, CalGEM provides a table in the attached enclosure of the wells within the parcel boundary or in its vicinity, based on CalGEM's Well Finder database (https://maps.conservation.ca.gov/doggr/wellfinder/).

CalGEM categorically advises against building over, or in any way impeding access to, oil, gas, or geothermal wells. Impeding access to a well could result in the need to remove any structure or obstacle that prevents or impedes access including, but not limited to, buildings, housing, fencing, landscaping, trees, pools, patios, sidewalks, roadways, and decking at the landowner's expense if there is a need to access a well. Maintaining sufficient access is considered the ability for a well servicing unit and associated necessary equipment (consisting of well servicing rig, pumping equipment, pipe trailer) to reach a well from a public street or access way, solely over the parcel on which the well is located. A well servicing unit, and any necessary equipment, should be able to pass unimpeded along and over the route, and should be able to access the well without disturbing the integrity of surrounding infrastructure. Impermeable barriers such as asphalt, concrete, and plastic may trap hazardous gases and liquids

underneath and could create a safety hazard if built over a well that later develops a leak.

CalGEM recommends that any well for which access is impeded or built over, against CalGEM's advice, should be evaluated by a qualified petroleum professional for compliance with the statutory objectives of isolating all hydrocarbon-bearing strata; protecting underground and surface waters; prevention of subsequent damage to life, health, property, and other resources; and prevention of loss of oil, gas, or reservoir energy. CalGEM recommends that wells that do not meet these standards are abandoned or re-abandoned prior to construction. The well information can be accessed through CalGEM's Well Finder database mentioned above. PRC section 3208, subdivision (a), provides the primary statutory authority for CalGEM to oversee adequate abandonment of wells. Additionally, CalGEM has developed the regulatory guidance for operators to be followed during well abandonment, which are listed within California Code of Regulation, title 14 (CCR) section 1723 and associated sub-sections (for onshore wells), and section 1745 and associated sub-sections (for offshore wells).

There is no guarantee that a well abandoned in compliance with current Division requirements as prescribed by law will not start leaking in the future. Due to the inability to predict all subsurface conditions or changes, it always remains a possibility that any well may start to leak oil, gas, and/or water after abandonment, no matter how thoroughly the well was plugged and abandoned. CalGEM acknowledges wells plugged and abandoned to the most current Division requirements as prescribed by law have a lower probability of leaking in the future, however there is no guarantee that such abandoned wells will not leak.

CalGEM advises that all wells identified on the development parcel prior to, or during, development activities be tested for liquid and gas leakage. Surveyed locations in Latitude and Longitude, NAD 83 decimal format, and leak testing results should be provided to CalGEM. CalGEM expects any wells found leaking to be reported to CalGEM immediately.

PRC section 3208.1 gives CalGEM the authority to order or permit the re-abandonment of any well where it has reason to question the integrity of the previous abandonment. Responsibility for re-abandonment costs may be affected by the choices made by the local permitting agency, property owner, and/or developer in considering the general advice set forth in this letter. The PRC continues to define the person or entity responsible for re-abandonment as:

1. The property owner - If the well was plugged and abandoned in conformance with Division requirements at the time of abandonment, and in its current condition does not pose an immediate danger to life, health, and property, but requires additional work solely because the owner of the property on which the well is located proposes construction on the property that would prevent or impede access to the well for purposes of remedying a currently perceived future problem, then the owner of the property on which the well is located shall obtain all rights necessary to re-abandon the well and be responsible for the re-

abandonment.

2. The person or entity causing construction over or near the well - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and the property owner, developer, or local agency permitting the construction failed either to obtain an opinion from the supervisor or district deputy as to whether the previously abandoned well is required to be re-abandoned, or to follow the advice of the supervisor or district deputy not to undertake construction that impedes access, then the person or entity causing the construction over or near the well shall obtain all rights necessary to re-abandon the well and be responsible for the re-abandonment.

3. The party or parties responsible for disturbing the integrity of the abandonment - If the well was plugged and abandoned in conformance with Division requirements at the time of plugging and abandonment, and after that time someone other than the operator or an affiliate of the operator disturbed the integrity of the abandonment in the course of developing the property, then the party or parties responsible for disturbing the integrity of the abandonment shall be responsible for the re-abandonment.

Should any wells require abandonment or re-abandonment, the responsible party must submit a Notice of Intention (NOI) to CalGEM through WellSTAR. The NOI form can be accessed in the 'Plugging and Abandonment' section of the following link: https://www.conservation.ca.gov/calgem/for_operators.

No well work may be performed on any oil, gas, or geothermal well without written approval from CalGEM. Well work requiring approval includes, but is not limited to, mitigating leaking gas or other fluids from abandoned wells, modifications to well casings, and/or any other re-abandonment work. CalGEM also regulates the top of a plugged and abandoned well's minimum and maximum depth below final grade. CCR section1723.5 states well casings shall be cut off at least 5 feet but no more than 10 feet below the surface of the ground. If any well needs to be lowered or raised (i.e. casing cut down or casing riser added) to meet this regulation, a permit from CalGEM is required before work can start.

CalGEM makes the following additional recommendations to the local permitting agency, property owner, and developer:

1. To ensure that present and future property owners are aware of (a) the existence of all wells located on the property, and (b) potentially significant issues associated with any improvements near oil or gas wells, CalGEM recommends that information regarding the below identified well(s), and any other pertinent information obtained after the issuance of this letter, be communicated to the appropriate county recorder for inclusion in the title information of the subject real property.

2. CalGEM recommends that any soil containing hydrocarbons be disposed of in accordance with local, state, and federal laws. Please notify the appropriate

authorities if soil containing significant amounts of hydrocarbons is discovered during development.

As indicated in PRC section 3106, CalGEM has statutory authority over the drilling, operation, maintenance, and abandonment of oil, gas, and geothermal wells, and attendant facilities, to prevent, as far as possible, damage to life, health, property, and natural resources; damage to underground oil, gas, and geothermal deposits; and damage to underground and surface waters suitable for irrigation or domestic purposes. In addition to CalGEM's authority to order work on wells pursuant to PRC sections 3208.1 and 3224, it has authority to issue civil and criminal penalties under PRC sections 3236, 3236.5, and 3359 for violations within CalGEM's jurisdictional authority. CalGEM does not regulate grading, excavations, or other land use issues.

Should you have any questions, or if any wells are encountered that were not part of this letter, contact CalGEM at (661) 322-4031 or via email at CalGEMCentralCSWR@conservation.ca.gov.

Sincerely,

Jeff Kimber

Jeff Kimber
Supervising Oil and Gas Engineer

Enclosure

Enclosure: The wells listed below are reported to be located within and nearby the parcel boundary and may have future access impeded.

Township, Range, Section	API No.	Well Name
T19S/ R22E/ Sec. 9	No wells found	

Docusign Envelope ID: 293DBEDE-5539-4073-8EC1-8E1E2020683F

Letter Number 9

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

November 7, 2025

Victor Hernandez, Planner IV
Kings County Community Development Agency
1400 West Lacey Blvd., Building #6
Hanford, California 93230
(559) 852-2685
victor.hernandez@co.kings.ca.us

Subject: Conditional Use Permit No. 24-03 (4Creeks / Sozinho Dairy No. 5) Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) SCH No. 2025100441

Dear Victor Hernandez:

The California Department of Fish and Wildlife (CDFW) received a NOP from Kings County (County) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession, or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Sozinho Dairy No. 5, Inc.

Objective: The Project proposes to expand an existing dairy facility. The Project includes the construction of a manure processing area (200,000-square feet.), a post manure organic matter processing area (40,000-square feet), a post biodynamic aerobic bed organic matter processing area (150,000-square feet), a processing and product storage area (30,000-square feet), one reception pit, two mechanical separators, one 14-foot by 20-foot tank on a concrete pad for solid separation and collection, two earthen berms, two lift stations and five water processing beds. The proposal also includes improvements to the animal housing and operations areas of the dairy such as three new feed storage areas, twelve rows of calf hutches, one freestall barn, one maternity barn, twelve shade structures over existing corrals, one commodity barn, one shop, and one open lot corral.

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Location: The proposed Project site is located in a rural unincorporated area of Kings County, just east of Hanford, on the southwest corner of Houston Avenue and 7th Avenue at address 12252 7th Avenue. The Project site consists of Assessor's Parcel Numbers (APNs): 016-200-005, -028, -029 and -035.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the DEIR prepared for the Project.

The Initial Study prepared for the Project (IS) states the site is topographically flat and surrounded by agricultural uses and some rural residences to the north. Aerial imagery shows the Project site is comprised of agricultural row crops and an active dairy facility. Agricultural lands are also present outside of the Project site to the south, east and west.

Based on a review of California Natural Diversity Database (CNDDB) (CDFW 2025) records, and the surrounding habitat, the Project is within the geographic range of several special-status animal species including, but not limited to: the State threatened Swainson's hawk (*Buteo Swainsoni*) and tricolored blackbird (*Agelaius tricolor*); and the State candidate western burrowing owl (*Athene cunicularia hypugaea*) and Crotch's bumble bee (*Bombus crotchii*).

CDFW has the following recommendations and comments to either inform the biological technical studies conducted in support of the DEIR or to be incorporated as measures within the DEIR and implemented prior to initiating ground disturbance activities associated with the Project.

Swainson's Hawk

The IS provides Mitigation Measures (MM) BIO-1.1, BIO-1.2, and BIO-1.3 to mitigate for potentially significant impacts to Swainson's hawk (SWHA) and requires that a qualified biologist conduct pre-construction nesting bird surveys within 10 days prior to initiating construction activities during the SWHA breeding season. CDFW does not concur that these measures are sufficient to mitigate for potentially significant impacts to SWHA and avoid unauthorized take. As such, CDFW recommends that a qualified biologist conduct surveys for nesting SWHA following the entire survey methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) as part of the biological technical studies conducted in support of the DEIR.

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In addition to conducting SWHA surveys, CDFW recommends the DEIR include the following measures:

Recommended Mitigation Measure 1: SWHA Surveys Prior to Construction
Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the survey methodology developed by the SWHA Technical Advisory Committee, be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 2: SWHA Avoidance Buffer
If Project-specific activities will take place during the SWHA nesting season (i.e., March 1 through September 15), and active SWHA nests are present, CDFW recommends a minimum ½-mile no-disturbance buffer be delineated and maintained around each nest, regardless of whether it was detected by surveys or observed incidentally. These buffers would remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities.

Recommended Mitigation Measure 3: SWHA Take Authorization
CDFW also recommends that in the event an active SWHA nest is detected, and a ½-mile no-disturbance buffer is not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Tricolored Blackbird

The IS provides MM BIO-3.1, BIO-3.2, and BIO-3.3 to mitigate for potentially significant impacts to tricolored blackbird (TRBL) and requires that a qualified biologist conduct pre-construction nesting bird surveys within 15 days prior to initiating construction activities during the nesting season. CDFW concurs with conducting pre-construction nesting bird surveys but recommends a qualified wildlife biologist conduct focused surveys for nesting TRBL no more than 10 days prior to the start of construction to evaluate presence/absence of TRBL nesting colonies in proximity to Project activities and to evaluate potential Project-related impacts. These measures also require that a qualified biologist implement an appropriate no-disturbance buffer around active nests based on applicable CDFW guidelines and/or the biology of the affected species. CDFW concurs with this portion of the measures and recommends implementation of a minimum 300-foot no-disturbance buffer around the colony in accordance with CDFW's "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015" (CDFW 2015). CDFW recommends that this

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buffer remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged and are no longer reliant upon the colony or parental care for survival. CDFW also recommends if a TRBL nesting colony is detected during surveys and avoidance is not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Western Burrowing Owl

The California Fish and Game Commission (FGC) approved western burrowing owl (BUOW) as a candidate for potential listing as a protected species under CESA on October 10, 2024, and published these findings in the California Regulatory Notice Register (Notice Register) on October 25, 2024. As such, BUOW is now a candidate under CESA and receives the same legal protection afforded to an endangered or threatened species (Fish & G. Code, §§ 2074.2 & 2085).

The IS provides MM BIO-2.1, BIO-2.2, and BIO-2.3 to mitigate for potential Project related impacts to BUOW and requires that a qualified biologist conduct pre-construction clearance surveys following the methods outlined in the Staff Report on Burrowing Owl Mitigation (CDFG 2012), no less than 14 days prior to the initiation of construction activities. The measures also require that a qualified biologist implement a no-disturbance buffer of 250 feet around active BUOW nest burrows during the breeding season (Feb 1 through Aug 31). CDFW does not concur that the proposed survey measures and no-disturbance buffer distance are sufficient to mitigate for potentially significant impacts to BUOW and avoid unauthorize take of the species absent an ITP.

MM BIO-2.3 also states that, “If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.” CDFW does not concur MM BIO-2.3 is sufficient to mitigate for potentially significant impacts to BUOW and avoid unauthorized take. Passive relocation in particular would have a strong likelihood in result in the unauthorized take of the species absent an ITP being issued for the Project. As such, CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) as part of the biological studies conducted in support of the DEIR. In addition to the habitat assessment and focused surveys for BUOW, CDFW recommends the DEIR include the following:

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Recommended Mitigation Measure 4: BUOW Pre-construction Surveys
Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 5: BUOW Avoidance Buffer
Should a BUOW or known BUOW den (active or inactive) be detected, either during pre-construction surveys or construction activities, CDFW recommends that no-disturbance buffers, as outlined in the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012), be implemented prior to and during any ground-disturbing activities. CDFW also recommends that these buffers be implemented for both wintering and breeding BUOW.

Recommended Mitigation Measure 6: BUOW Take Authorization
If a BUOW or known BUOW den (active or inactive) is detected, and the no-disturbance buffers outlined in the 2012 Staff Report on Burrowing Mitigation are not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Crotch's Bumble Bee

The Project site is within the known geographical range of Crotch's bumble bee (CBB) and a historical occurrence has been documented within 1 ½ miles of the Project site (CDFW 2025). CBB are known to inhabit areas of grasslands and scrub that contain requisite habitat elements for nesting, such as small mammal burrows and bunch/thatched grasses, and these habitat elements may be present within the Project site. As such, CDFW recommends a qualified biologist conduct a habitat assessment as part of the biological studies conducted in support of the DEIR to determine if the Project site and the immediate surrounding vicinity contain habitat suitable to support CBB. Potential nesting sites, which include all small mammal burrows, perennial bunch grasses, thatched annual grasses, brush piles, old bird nests, would need to be documented as part of the assessment. If potentially suitable habitat is identified, CDFW recommends that a qualified biologist conduct focused surveys for CBB, and their requisite habitat features following the methodology outlined in the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023). If surveys indicate the presence or potential presence of CBB, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

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Editorial Comments and/or Suggestions

Nesting birds: CDFW encourages that all ground-disturbing activities occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February 15 through September 15), the Project applicant is responsible for ensuring that implementation of the Project does not result in a violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above.

CDFW recommends that a qualified biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction areas would be concealed from a nest site by topography. CDFW recommends that a qualified biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project. Including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the Project, even if those impacts are relatively small (i.e., less than significant). CDFW recommends cumulative impacts be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on

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resources and be focused specifically on the resource, not the Project. An appropriate resource study area identified and utilized for this analysis is advised. CDFW staff are available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

Project Alternatives Analysis: CDFW recommends that the information and results obtained from the biological technical surveys, studies, and analysis conducted in support of the DEIR be used to develop and modify the Project's alternatives to avoid and minimize impacts to biological resources to the maximum extent possible. When efforts to avoid and minimize have been exhausted, remaining impacts to sensitive biological resources should be mitigated to reduce impacts to a less than significant level, if feasible.

California Natural Diversity Database: Please note that the CNDDB is populated by voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record, or lack of recent occurrence records, in the CNDDB does not mean that a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified biologist during the appropriate survey period(s) and using the appropriate protocol survey methodology are warranted to determine whether or not any special-status species are present.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database. The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

If it is determined that the Project has the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

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CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the County in identifying and mitigating Project impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Please see the enclosed Mitigation Monitoring and Reporting Program (MMRP) table (Attachment 1) which corresponds with the recommended mitigation measures in this comment letter. Questions regarding this letter or further coordination should be directed to John Riedel, Environmental Scientist, at (559) 807-1453 or john.riedel@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

ATTACHMENT 1 - MMRP

ec: State Clearinghouse
Governor's Office of Land Use and Climate Innovation
state.clearinghouse@lci.ca.gov

Docusign Envelope ID: 293DBEDE-5539-4073-8EC1-8E1E2020683F

REFERENCES

California Department of Fish and Game. 2012. Staff report on burrowing owl mitigation. Sacramento, California, USA.

California Department of Fish and Wildlife. 2015. Staff guidance regarding avoidance of impacts to tricolored blackbird breeding colonies on agricultural fields in 2015. Sacramento, California, USA.

California Department of Fish and Wildlife. 2023. Survey considerations for California Endangered Species Act (CESA) candidate bumble bee species. Sacramento, California, USA.

California Department of Fish and Wildlife. 2025. Biogeographic information and observation system (BIOS). https://www.wildlife.ca.gov/Data/BIOS. Accessed 28 October 2025.

Swainson's Hawk Technical Advisory Committee. 2000. Recommended timing and methodology for Swainson's hawk nesting surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee.

Docusign Envelope ID: 293DBEDE-5539-4073-8EC1-8E1E2020683F

Attachment 1

Docusign Envelope ID: 293DBEDE-5539-4073-8EC1-8E1E2020683F

Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Conditional Use Permit No. 24-03 (4Creeks / Sozinho Dairy No. 5)

SCH No.: 2025100441

RECOMMENDED MITIGATION MEASURE	**STATUS/DATE/INITIALS**
Before Disturbing Soil or Vegetation	
Swainson's Hawk (SWHA)	
Recommended Mitigation Measure 1: SWHA surveys prior to construction	
Recommended Mitigation Measure 3: SWHA take authorization	
Western Burrowing Owl (BUOW)	
Recommended Mitigation Measure 4: BUOW preconstruction surveys	
Recommended Mitigation Measure 6: BUOW take authorization	
During Construction	
Swainson's Hawk (SWHA)	
Recommended Mitigation Measure 2: SWHA avoidance buffer	
Western Burrowing Owl (BUOW)	
Recommended Mitigation Measure 5: BUOW avoidance buffer	

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Letter 10

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
MEGHAN HERTEL, Director

March 26, 2026

Victor Hernandez, Planner IV
Kings County Community Development Agency
1400 West Lacey Boulevard, Building #6
Hanford, California 93230
(559) 852-2685
victor.hernandez@co.kings.ca.us

Subject: **Sozinho Dairy #5 Project (Project)**
Draft Environmental Impact Report (DEIR)
SCH: 2025100441

Dear Victor Hernandez:

The California Department of Fish and Wildlife (CDFW) received a DEIR from Kings County (County) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

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CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the project proponent may seek related take authorization as provided by the Fish and Game Code.

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession, or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Sozinho Dairy No. 5, Inc.

Objective: The Project proposes to expand an existing dairy operation and includes the construction of new animal housing structures, expanded feed storage areas, manure processing areas, and wastewater treatment systems using vermifiltration and mechanical separation.

Location: The Project site is located in a rural unincorporated area of Kings County, just east of the city of Hanford, on the southwest corner of Houston Avenue and 7th Avenue at 12252 7th Avenue. The Project site is located within Assessor's Parcel Numbers (APNs) 016-200-005, -029, -028, and -035.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources.

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Editorial comments or other suggestions may also be included to improve the DEIR prepared for the Project.

The DEIR notes the Project site consists primarily of active dairy operations, agricultural lands comprised of cultivated wheat (*Triticum aestivum*), and disturbed areas, and has existing features such as process water retention ponds, open lot corrals, freestall barns, a milk barn, a maternity barn, multiple residences, a hay barn, a shop, and a manure stacking area. The DEIR also notes the Project site is surrounded by agricultural uses and some rural residences to the north. Aerial imagery shows the Project site is bordered by Houston Avenue to the north and 7th Avenue to the east, with several residential units also to the south of the Project site.

CDFW submitted a comment letter for the Notice of Preparation on November 7, 2025 (2025 NOP letter) (Attachment 1). Based on a review of the DEIR, it appears that most of CDFW comments were incorporated. As such, CDFW has few comments, which are provided below.

The DEIR acknowledges that the Project site is within the geographic range of special-status species and proposes specific mitigation measures for some species to reduce impacts to less than significant. CDFW has concerns about the ability of some the proposed mitigation measures to reduce potential impacts to less than significant and avoid unauthorized take for special-status species including, but not limited to, the State threatened tricolored blackbird (*Agelaius tricolor*); the State candidate Crotch's bumble bee (*Bombus crotchii*); and the State species of special concern and federally proposed threatened western spadefoot (*Spea hammondii*).

Tricolored Blackbird

The DEIR includes Mitigation Measures (MM) BIO-3.3 and BIO-3.4 to mitigate for potential significant impacts to tricolored blackbird (TRBL), which requires a qualified biologist to conduct a focused colony survey of all potential nesting substrate, during the TRBL nesting season (March 1 – August 15), within the Project site. CDFW concurs with conducting pre-construction focused surveys but advises expanding the defined nesting season dates to (February 1 – September 15). CDFW also recommends that these focused surveys be conducted no more than 10 days prior to the start of Project construction.

Crotch's Bumble Bee

The DEIR includes MM BIO-4.1 and BIO-4.2 to mitigate for potential significant impacts to Crotch's bumble bee (CBB) which requires a qualified biologist to conduct a habitat assessment and if potential suitable habitat is present, conduct protocol-level surveys following the Approved Survey Methodology for Crotch's Bumble Bee (CDFW 2023)

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during the appropriate seasonal survey window. CDFW concurs with conducting protocol-level surveys and would like to clarify the recommended survey protocol is titled, Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023). MM BIO-4.2 states, "If Crotch's bumble bee is detected and impacts cannot be fully avoided through project design or timing, the Project proponent shall consult with CDFW and obtain an Incidental Take Permit (ITP) prior to any activity that could result in take." CDFW concurs with this portion of MM BIO-4.2, and recommends that if CBB is detected, a 50-foot no-disturbance buffer be implemented around all small mammal burrows and thatched/bunch grasses and that consultation with CDFW occur to discuss how to implement the Project and avoid take or acquire appropriate take authorization through a CESA ITP.

Western Spadefoot

The Project is within the geographic range of western spadefoot (WESP) and there are multiple occurrences of WESP located approximately seven miles east of the Project site (CDFW 2026). WESP are known to occur within grassland and agricultural habitats, including agricultural canals, ditches, pumps, and sumps, and these features may be present within the Project site. As such, CDFW recommends the DEIR include the following:

Recommended Mitigation Measure 1: WESP Habitat Assessment

CDFW recommends a qualified biologist conduct a habitat assessment to determine if the Project site and the immediate surrounding vicinity contain habitat suitable to support WESP.

Recommended Mitigation Measure 2: WESP Surveys

If potentially suitable habitat is identified, CDFW recommends that a qualified biologist conduct focused surveys for WESP, using appropriate survey methodologies, prior to any ground-disturbing activities that may occur as part of the Project.

Recommended Mitigation Measure 3: WESP Minimization

If WESP burrows, cracks, loose soil areas or other refugia are found to be used by WESP during focused surveys, avoidance whenever possible is encouraged via delineation and observance of a 50-foot no-disturbance buffer around these resources, including all potential breeding habitat, which can include agricultural sumps and irrigation ditches in addition to any areas that pool water for only a few weeks. Avoidance of potential breeding habitat should occur even when dry, since post-metamorphic WESP juveniles have a unique adaptation to the drying of their

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temporary breeding pools; they utilize the dried pond bottom as a refuge, burying themselves in the dessication cracks and damp soil beneath the surface crust (Baumberger et al., 2020). If any lifestage of WESP are observed on the Project site, Project activities in their immediate vicinity should cease, allowing individuals to leave the Project site on their own accord.

On September 24, 2025, the California Fish and Game Commission (Commission) received a petition to list the northern population of WESP as threatened species and the southern population of WESP as an endangered species under CESA. If the Commission takes action and WESP becomes listed as a Candidate for listing pursuant to CESA (possible in 2026), or ultimately becomes listed as threatened or endangered pursuant to CESA, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081, subdivision (b), is necessary to comply with CESA if full avoidance of WESP could not be achieved. Please note that implementation of the above recommended measures would help minimize impacts to WESP as required by CEQA, but would not fully avoid impacts and thus take; additional measures would need to be implemented to avoid take of WESP. In the event that WESP becomes protected under CESA, CDFW recommends early consultation to help identify if avoidance is feasible or if not, to initiate discussions regarding the need for ITP acquisition.

Editorial comments and/or suggestions

Nesting Birds: CDFW encourages that Project ground-disturbing activities occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the nesting season (February 1st through September 15th), the Project proponent is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or relevant Fish and Game Code sections as referenced above.

CDFW further recommends that a qualified biologist conduct a pre-construction survey for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected, either directly or indirectly, by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. CDFW recommends that a qualified biologist establish a behavioral baseline of all identified nests. Once Project activities begin, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

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If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is a compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. CDFW recommends that a qualified biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

California Natural Diversity Database (CNDDB) Positive Submission of Data: Please note that the California Natural Diversity Database (CNDDB) is populated by voluntary record submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record, or lack of recent occurrence records, in the CNDDB does not mean that a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified biologist/botanist during the appropriate protocol survey methodology are warranted in order to determine whether or not any special-status species are present at or near the Project site.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the CNDDB. The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of environmental document filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final.

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(Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

CONCLUSION

CDFW appreciates the opportunity to comment on the DEIR to assist the County in identifying and mitigating Project impacts on biological resources. A Mitigation and Monitoring Program (MMRP) (Attachment 2) is included to assist the County with incorporating the recommended mitigation measures provided above. Questions regarding this letter or further coordination should be directed to John Riedel, Environmental Scientist, at (559) 807-1453, or john.riedel@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...
Julie A. Vance
Regional Manager

ATTACHMENT 1- 2025 NOP Letter
ATTACHMENT 2- MMRP Table

ec: State Clearinghouse
Land Use and Climate Innovation
state.clearinghouse@lci.ca.gov

U.S. Fish and Wildlife Service
Justin Sloan
justin_sloan@fws.gov

Docusign Envelope ID: 805FA530-E76D-4538-915F-EBEF2A7119E0

References

Baumberger, K., A. Backlin, E. Gallegos, C. Hitchcock, and R. Fisher. Mitigation ponds offer drought resiliency for western spadefoot (*Spea hammondii*) populations. Southern California Academy of Sciences, 119(1), pp. 6-17.

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Attachment 1

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State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
Fresno, California 93710
(559) 243-4005
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

November 7, 2025

Victor Hernandez, Planner IV
Kings County Community Development Agency
1400 West Lacey Blvd., Building #6
Hanford, California 93230
(559) 852-2685
victor.hernandez@co.kings.ca.us

Subject: Conditional Use Permit No. 24-03 (4Creeks / Sozinho Dairy No. 5) Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) SCH No. 2025100441

Dear Victor Hernandez:

The California Department of Fish and Wildlife (CDFW) received a NOP from Kings County (County) for the Project pursuant to the California Environmental Quality Act (CEQA) and CEQA Guidelines.[1]

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, CDFW appreciates the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; CEQA Guidelines § 15386, subd. (a)). CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological

[1] CEQA is codified in the California Public Resources Code in section 21000 et seq. The "CEQA Guidelines" are found in Title 14 of the California Code of Regulations, commencing with section 15000.

Docusign Envelope ID: 805FA530-E76D-4538-915F-EBEF2A7119E0

expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect fish and wildlife resources.

CDFW is also submitting comments as a **Responsible Agency** under CEQA. (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381) CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code. As proposed, for example, the Project may be subject to CDFW's lake and streambed alteration regulatory authority. (Fish & G. Code, § 1600 et seq.) Likewise, to the extent implementation of the Project as proposed may result in "take" as defined by State law of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 et seq.), the Project proponent may seek related take authorization as provided by the Fish and Game Code.

Unlisted Species: Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines section 15380, CDFW recommends it be fully considered in the environmental analysis for the Project.

Nesting Birds: CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, their eggs and nests include sections 3503 (regarding unlawful take, possession, or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).

PROJECT DESCRIPTION SUMMARY

Proponent: Sozinho Dairy No. 5, Inc.

Objective: The Project proposes to expand an existing dairy facility. The Project includes the construction of a manure processing area (200,000-square feet.), a post manure organic matter processing area (40,000-square feet), a post biodynamic aerobic bed organic matter processing area (150,000-square feet), a processing and product storage area (30,000-square feet), one reception pit, two mechanical separators, one 14-foot by 20-foot tank on a concrete pad for solid separation and collection, two earthen berms, two lift stations and five water processing beds. The proposal also includes improvements to the animal housing and operations areas of the dairy such as three new feed storage areas, twelve rows of calf hutches, one freestall barn, one maternity barn, twelve shade structures over existing corrals, one commodity barn, one shop, and one open lot corral.

Docusign Envelope ID: 805FA530-E76D-4538-915F-EBEF2A7119E0

Location: The proposed Project site is located in a rural unincorporated area of Kings County, just east of Hanford, on the southwest corner of Houston Avenue and 7th Avenue at address 12252 7th Avenue. The Project site consists of Assessor's Parcel Numbers (APNs): 016-200-005, -028, -029 and -035.

COMMENTS AND RECOMMENDATIONS

CDFW offers the comments and recommendations below to assist the County in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions may also be included to improve the DEIR prepared for the Project.

The Initial Study prepared for the Project (IS) states the site is topographically flat and surrounded by agricultural uses and some rural residences to the north. Aerial imagery shows the Project site is comprised of agricultural row crops and an active dairy facility. Agricultural lands are also present outside of the Project site to the south, east and west.

Based on a review of California Natural Diversity Database (CNDDB) (CDFW 2025) records, and the surrounding habitat, the Project is within the geographic range of several special-status animal species including, but not limited to: the State threatened Swainson's hawk (*Buteo Swainsoni*) and tricolored blackbird (*Agelaius tricolor*); and the State candidate western burrowing owl (*Athene cunicularia hypugaea*) and Crotch's bumble bee (*Bombus crotchii*).

CDFW has the following recommendations and comments to either inform the biological technical studies conducted in support of the DEIR or to be incorporated as measures within the DEIR and implemented prior to initiating ground disturbance activities associated with the Project.

Swainson's Hawk

The IS provides Mitigation Measures (MM) BIO-1.1, BIO-1.2, and BIO-1.3 to mitigate for potentially significant impacts to Swainson's hawk (SWHA) and requires that a qualified biologist conduct pre-construction nesting bird surveys within 10 days prior to initiating construction activities during the SWHA breeding season. CDFW does not concur that these measures are sufficient to mitigate for potentially significant impacts to SWHA and avoid unauthorized take. As such, CDFW recommends that a qualified biologist conduct surveys for nesting SWHA following the entire survey methodology developed by the SWHA Technical Advisory Committee (SWHA TAC 2000) as part of the biological technical studies conducted in support of the DEIR.

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In addition to conducting SWHA surveys, CDFW recommends the DEIR include the following measures:

Recommended Mitigation Measure 1: SWHA Surveys Prior to Construction
Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the survey methodology developed by the SWHA Technical Advisory Committee, be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 2: SWHA Avoidance Buffer
If Project-specific activities will take place during the SWHA nesting season (i.e., March 1 through September 15), and active SWHA nests are present, CDFW recommends a minimum ½-mile no-disturbance buffer be delineated and maintained around each nest, regardless of whether it was detected by surveys or observed incidentally. These buffers would remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival, to prevent nest abandonment and other take of SWHA as a result of Project activities.

Recommended Mitigation Measure 3: SWHA Take Authorization
CDFW also recommends that in the event an active SWHA nest is detected, and a ½-mile no-disturbance buffer is not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Tricolored Blackbird

The IS provides MM BIO-3.1, BIO-3.2, and BIO-3.3 to mitigate for potentially significant impacts to tricolored blackbird (TRBL) and requires that a qualified biologist conduct pre-construction nesting bird surveys within 15 days prior to initiating construction activities during the nesting season. CDFW concurs with conducting pre-construction nesting bird surveys but recommends a qualified wildlife biologist conduct focused surveys for nesting TRBL no more than 10 days prior to the start of construction to evaluate presence/absence of TRBL nesting colonies in proximity to Project activities and to evaluate potential Project-related impacts. These measures also require that a qualified biologist implement an appropriate no-disturbance buffer around active nests based on applicable CDFW guidelines and/or the biology of the affected species. CDFW concurs with this portion of the measures and recommends implementation of a minimum 300-foot no-disturbance buffer around the colony in accordance with CDFW's "Staff Guidance Regarding Avoidance of Impacts to Tricolored Blackbird Breeding Colonies on Agricultural Fields in 2015" (CDFW 2015). CDFW recommends that this

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buffer remain in place until the breeding season has ended or until a qualified biologist has determined that nesting has ceased, the birds have fledged and are no longer reliant upon the colony or parental care for survival. CDFW also recommends if a TRBL nesting colony is detected during surveys and avoidance is not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Western Burrowing Owl

The California Fish and Game Commission (FGC) approved western burrowing owl (BUOW) as a candidate for potential listing as a protected species under CESA on October 10, 2024, and published these findings in the California Regulatory Notice Register (Notice Register) on October 25, 2024. As such, BUOW is now a candidate under CESA and receives the same legal protection afforded to an endangered or threatened species (Fish & G. Code, §§ 2074.2 & 2085).

The IS provides MM BIO-2.1, BIO-2.2, and BIO-2.3 to mitigate for potential Project related impacts to BUOW and requires that a qualified biologist conduct pre-construction clearance surveys following the methods outlined in the Staff Report on Burrowing Owl Mitigation (CDFG 2012), no less than 14 days prior to the initiation of construction activities. The measures also require that a qualified biologist implement a no-disturbance buffer of 250 feet around active BUOW nest burrows during the breeding season (Feb 1 through Aug 31). CDFW does not concur that the proposed survey measures and no-disturbance buffer distance are sufficient to mitigate for potentially significant impacts to BUOW and avoid unauthorize take of the species absent an ITP.

MM BIO-2.3 also states that, “If the applicant chooses to passively relocate owls during the non-breeding season, this activity shall be conducted in accordance with a relocation plan prepared by a qualified biologist.” CDFW does not concur MM BIO-2.3 is sufficient to mitigate for potentially significant impacts to BUOW and avoid unauthorized take. Passive relocation in particular would have a strong likelihood in result in the unauthorized take of the species absent an ITP being issued for the Project. As such, CDFW recommends assessing presence/absence of BUOW by having a qualified biologist conduct surveys following the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) as part of the biological studies conducted in support of the DEIR. In addition to the habitat assessment and focused surveys for BUOW, CDFW recommends the DEIR include the following:

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Recommended Mitigation Measure 4: BUOW Pre-construction Surveys
Depending on the time between the initial survey efforts conducted in support of the DEIR and Project construction, CDFW recommends that additional surveys, following the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012) be repeated the survey season immediately prior to construction.

Recommended Mitigation Measure 5: BUOW Avoidance Buffer
Should a BUOW or known BUOW den (active or inactive) be detected, either during pre-construction surveys or construction activities, CDFW recommends that no-disturbance buffers, as outlined in the 2012 Staff Report on Burrowing Owl Mitigation (CDFG 2012), be implemented prior to and during any ground-disturbing activities. CDFW also recommends that these buffers be implemented for both wintering and breeding BUOW.

Recommended Mitigation Measure 6: BUOW Take Authorization
If a BUOW or known BUOW den (active or inactive) is detected, and the no-disturbance buffers outlined in the 2012 Staff Report on Burrowing Mitigation are not feasible, consultation with CDFW is warranted to discuss how to implement the Project and avoid take. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

Crotch's Bumble Bee

The Project site is within the known geographical range of Crotch's bumble bee (CBB) and a historical occurrence has been documented within 1 ½ miles of the Project site (CDFW 2025). CBB are known to inhabit areas of grasslands and scrub that contain requisite habitat elements for nesting, such as small mammal burrows and bunch/thatched grasses, and these habitat elements may be present within the Project site. As such, CDFW recommends a qualified biologist conduct a habitat assessment as part of the biological studies conducted in support of the DEIR to determine if the Project site and the immediate surrounding vicinity contain habitat suitable to support CBB. Potential nesting sites, which include all small mammal burrows, perennial bunch grasses, thatched annual grasses, brush piles, old bird nests, would need to be documented as part of the assessment. If potentially suitable habitat is identified, CDFW recommends that a qualified biologist conduct focused surveys for CBB, and their requisite habitat features following the methodology outlined in the Survey Considerations for California Endangered Species Act Candidate Bumble Bee Species (CDFW 2023). If surveys indicate the presence or potential presence of CBB, consultation with the CDFW is recommended for guidance on the development of mitigation measures such as take avoidance, minimization, and mitigation. If take cannot be avoided, take authorization through the acquisition of an ITP, pursuant to Fish and Game Code section 2081 subdivision (b) is necessary to comply with CESA.

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Editorial Comments and/or Suggestions

Nesting birds: CDFW encourages that all ground-disturbing activities occur during the bird non-nesting season; however, if ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February 15 through September 15), the Project applicant is responsible for ensuring that implementation of the Project does not result in a violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes as referenced above.

CDFW recommends that a qualified biologist conduct pre-activity surveys for active nests no more than 10 days prior to the start of ground or vegetation disturbance to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. In addition to direct impacts (i.e., nest destruction), noise, vibration, and movement of workers or equipment could also affect nests. CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once construction begins, CDFW recommends having a qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures.

If continuous monitoring of identified nests by a qualified biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the construction areas would be concealed from a nest site by topography. CDFW recommends that a qualified biologist advise and support any variance from these buffers and notify CDFW in advance of implementing a variance.

Cumulative Impacts: CDFW recommends that a cumulative impact analysis be conducted for all biological resources that will either be significantly or potentially significantly impacted by implementation of the Project. Including those whose impacts are determined to be less than significant with mitigation incorporated or for those resources that are rare or in poor or declining health and will be impacted by the Project, even if those impacts are relatively small (i.e., less than significant). CDFW recommends cumulative impacts be analyzed using an acceptable methodology to evaluate the impacts of past, present, and reasonably foreseeable future projects on

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resources and be focused specifically on the resource, not the Project. An appropriate resource study area identified and utilized for this analysis is advised. CDFW staff are available for consultation in support of cumulative impacts analyses as a trustee and responsible agency under CEQA.

Project Alternatives Analysis: CDFW recommends that the information and results obtained from the biological technical surveys, studies, and analysis conducted in support of the DEIR be used to develop and modify the Project's alternatives to avoid and minimize impacts to biological resources to the maximum extent possible. When efforts to avoid and minimize have been exhausted, remaining impacts to sensitive biological resources should be mitigated to reduce impacts to a less than significant level, if feasible.

California Natural Diversity Database: Please note that the CNDDB is populated by voluntary submissions of species detections. As a result, species may be present in locations not depicted in the CNDDB but where there is suitable habitat and features capable of supporting species. A lack of an occurrence record, or lack of recent occurrence records, in the CNDDB does not mean that a species is not present. In order to adequately assess any potential Project-related impacts to biological resources, surveys conducted by a qualified biologist during the appropriate survey period(s) and using the appropriate protocol survey methodology are warranted to determine whether or not any special-status species are present.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special-status species and natural communities detected during Project surveys to the California Natural Diversity Database. The CNDDB field survey form can be filled out and submitted online at the following link: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data. The types of information reported to CNDDB can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

FILING FEES

If it is determined that the Project has the potential to impact biological resources, an assessment of filing fees will be necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the environmental document filing fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

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CONCLUSION

CDFW appreciates the opportunity to comment on the NOP to assist the County in identifying and mitigating Project impacts on biological resources. More information on survey and monitoring protocols for sensitive species can be found at CDFW's website (https://www.wildlife.ca.gov/Conservation/Survey-Protocols). Please see the enclosed Mitigation Monitoring and Reporting Program (MMRP) table (Attachment 1) which corresponds with the recommended mitigation measures in this comment letter. Questions regarding this letter or further coordination should be directed to John Riedel, Environmental Scientist, at (559) 807-1453 or john.riedel@wildlife.ca.gov.

Sincerely,

DocuSigned by:
Julie Vance
FA83F09FE08945A...

Julie A. Vance
Regional Manager

ATTACHMENT 1 - MMRP

ec: State Clearinghouse
Governor's Office of Land Use and Climate Innovation
state.clearinghouse@lci.ca.gov

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Attachment 1

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Attachment 1

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Conditional Use Permit No. 24-03 (4Creeks / Sozinho Dairy No. 5)

SCH No.: 2025100441

RECOMMENDED MITIGATION MEASURE	**STATUS/DATE/INITIALS**
Before Disturbing Soil or Vegetation	
Swainson's Hawk (SWHA)	
Recommended Mitigation Measure 1: SWHA surveys prior to construction	
Recommended Mitigation Measure 3: SWHA take authorization	
Western Burrowing Owl (BUOW)	
Recommended Mitigation Measure 4: BUOW preconstruction surveys	
Recommended Mitigation Measure 6: BUOW take authorization	
During Construction	
Swainson's Hawk (SWHA)	
Recommended Mitigation Measure 2: SWHA avoidance buffer	
Western Burrowing Owl (BUOW)	
Recommended Mitigation Measure 5: BUOW avoidance buffer	

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Attachment 2

Docusign Envelope ID: 805FA530-E76D-4538-915F-EBEF2A7119E0

Attachment 2

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE
RECOMMENDED MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

PROJECT: Sozinho Dairy #5 Project

SCH No.: 2025100441

RECOMMENDED MITIGATION MEASURE	STATUS/DATE/INITIALS
Western Spadefoot (WESP)	
Recommended Mitigation Measure 1: WESP habitat assessment	
Recommended Mitigation Measure 2: WESP Surveys	
Recommended Mitigation Measure 3: WESP Minimization	

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

HEALTHY AIR LIVING™

March 30, 2025

Victor Hernandez
County of Kings
Community Development Agency
1400 W. Lacey Blvd., Building 6
Hanford, CA 93230

Project: Environmental Impact Report to Conditional Use Permit 24-03 for Sozinho Dairy #5

District CEQA Reference No: 20260131

Dear Mr. Hernandez:

The San Joaquin Valley Air Pollution Control District (District) has reviewed the Environmental Impact Report (EIR) to Conditional Use Permit 24-03 (CUP) from the County of Kings (County) for Sozinho Dairy #5. Per the EIR, the project consists of expanding and existing dairy facility to provide animal housing for increased animal comfort and operational ease, feed storage, implement process water treatment infrastructure to manage existing on-site process water, and establish organic matter operations for nutrient recycling and drying materials generated from animal operations and process water treatment for land applications (Project). The facility is not proposing a herd expansion. The Project is located at 12252 7th Avenue, Hanford CA 93230.

The District offers the following comments at this time regarding the Project:

1) **Air Quality Mitigation Measures AQ-5, AQ-8, & AQ-11 Project**

The Mitigation Monitoring and Reporting Program table on page 9-1 of the DEIR lists both the Kings County Community Development Agency and the San Joaquin Valley Unified Air Pollution Control District (District) as responsible agencies for implementation and monitoring of mitigation measures AQ-5, AQ-8, and AQ-11. These mitigation measures require the applicant to develop and implement several plans to control emissions associated with project related activities.

Monitoring and inspecting the plans that are to be developed per these mitigation measures extend beyond the scope of the District's regulatory authority. While there may be overlap between the emission sources to be addressed in these mitigation

Samir Sheikh
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 FAX: (559) 230-6061

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 FAX: (661) 392-5585

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measures and the emission sources regulated through District permits, the District would like to clarify that the District's regulatory authority for enforcement is limited to the conditions contained within District issued permits and compliance with applicable District rules and regulations.

Therefore, to ensure enforceability of the mitigation measures, the District recommends that the DEIR be revised to clarify that responsibility for implementation and monitoring of these mitigation measures remains with Kings County Community Development Agency.

2) Air Quality Mitigation Measures AQ-12

In the DEIR, page 9-4, within the Mitigation Monitoring and Reporting Program table, the Monitoring/Verification Responsibility column for mitigation measure AQ-12 lists both the Kings County Community Development Agency and the District as responsible agencies for implementation and monitoring. This mitigation measure includes minimizing emissions from expanded operational activities by limiting idling times for vehicles and equipment and utilizing low-emission machinery where feasible.

Implementation and monitoring of these types of operational practices are outside the District's regulatory jurisdiction. The District's role is limited to enforcing applicable District rules and regulations and conditions included in District issued permits. The District does not have authority to regulate mobile sources. Regulating mobile sources are within the responsibility and jurisdiction of the State and not the District.

Therefore, to ensure enforceability of the mitigation measure, the District recommends revising the DEIR to clarify that responsibility for implementation and monitoring of mitigation measure AQ-12 rests with the Kings County Community Development Agency.

3) Health Risk Screening/Assessment

The District reviewed the Health Risk Assessment (HRA) for the Project and has the following comments:

- The HRA states that the project is less than significant; however, there are what appear to be multiple on-site residences that may need to be evaluated as receptors. The District recommends identifying if these residences are for employee use only, or are occupied by non-employees. If the residences are occupied by anyone other than dairy employees, then they should be treated as receptors and have the potential to have a significant impact.

Modifications to the HRA based on the comments listed above have the potential to cause the Project to exceed District health risk thresholds. Therefore, the District recommends revising the HRA, if it is determined on-site receptors are applicable to the project, to ensure the analysis accurately reflects the Project's potential air quality impacts.

4) On-Site Solar Deployment

It is the policy of the State of California that renewable energy resources and zero-carbon resources supply 100% of retail sales of electricity to California end-use customers by December 31, 2045. While various emission control techniques and programs exist to reduce air quality emissions from mobile and stationary sources, the production of solar energy is contributing to improving air quality and public health. The District suggests that the County consider incorporating solar power systems as an emission reduction strategy for the Project.

5) District Rules and Regulations

The District issues permits for many types of air pollution sources, and regulates some activities that do not require permits. A project subject to District rules and regulations would reduce its impacts on air quality through compliance with the District's regulatory framework. In general, a regulation is a collection of individual rules, each of which deals with a specific topic. As an example, Regulation II (Permits) includes District Rule 2010 (Permits Required), Rule 2201 (New and Modified Stationary Source Review), Rule 2520 (Federally Mandated Operating Permits), and several other rules pertaining to District permitting requirements and processes.

The list of rules below is neither exhaustive nor exclusive. Current District rules can be found online at: https://ww2.valleyair.org/rules-and-planning/current-district-rules-and-regulations. To identify other District rules or regulations that apply to future projects, or to obtain information about District permit requirements, the project proponents are strongly encouraged to contact the District's Small Business Assistance (SBA) Office at (559) 230-5888.

5a) District Rules 2010 and 2201 - Air Quality Permitting for Stationary Sources

Stationary Source emissions include any building, structure, facility, or installation which emits or may emit any affected pollutant directly or as a fugitive emission. District Rule 2010 (Permits Required) requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO) from the District. District Rule 2201 (New and Modified Stationary Source Review) requires that new and modified stationary sources of emissions mitigate their emissions using Best Available Control Technology (BACT).

This Project will be subject to District Rule 2010 (Permits Required) and Rule 2201 (New and Modified Stationary Source Review) and will require District permits. Prior to construction, the Project proponent should submit to the District an application for an ATC. For further information or assistance, the project proponent may contact the District's SBA Office at (559) 230-5888.

5b) District Rule 9510 - Indirect Source Review (ISR)

Per District Rule 9510 section 4.4.3, a development project on a facility whose primary functions are subject to District Rule 2201 or District Rule 2010 are exempt from the requirements of the rule. The District has reviewed the information provided and has determined that the primary functions of this Project are subject to District Rule 2201 (New and Modified Stationary Source Review Rule) or District Rule 2010 (Permits Required). As a result, District Rule 9510 requirements and related fees do not apply to the Project referenced above.

5c) District Rule 4002 (National Emissions Standards for Hazardous Air Pollutants)

In the event an existing building will be renovated, partially demolished or removed, the Project may be subject to District Rule 4002. This rule requires a thorough inspection for asbestos to be conducted before any regulated facility is demolished or renovated. Information on how to comply with District Rule 4002 can be found online at: https://ww2.valleyair.org/compliance/demolition-renovation/

5d) District Rule 4601 (Architectural Coatings)

The Project may be subject to District Rule 4601 since it may utilize architectural coatings. Architectural coatings are paints, varnishes, sealers, or stains that are applied to structures, portable buildings, pavements or curbs. The purpose of this rule is to limit VOC emissions from architectural coatings. In addition, this rule specifies architectural coatings storage, cleanup and labeling requirements. Additional information on how to comply with District Rule 4601 requirements can be found online at: https://ww2.valleyair.org/media/tkgjeusd/rule-4601.pdf

5e) District Regulation VIII (Fugitive PM10 Prohibitions)

The project proponent may be required to submit a Construction Notification Form or submit and receive approval of a Dust Control Plan prior to commencing any earthmoving activities as described in Regulation VIII, specifically Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities.*

Should the project result in at least 1-acre in size, the project proponent shall provide written notification to the District at least 48 hours prior to the project proponents intent to commence any earthmoving activities pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). Also, should the project result in the disturbance of 5-acres or more, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials, the project proponent shall submit to the District a Dust Control Plan pursuant to District Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities). For additional information regarding the written notification or Dust Control Plan requirements, please contact District Compliance staff at (559) 230-5950.

The application for both the Construction Notification and Dust Control Plan can be found online at: https://ww2.valleyair.org/media/fm3jrbsq/dcp-form.docx

Information about District Regulation VIII can be found online at: https://ww2.valleyair.org/dustcontrol

5f) Other District Rules and Regulations

As discussed in the DEIR, the Project will be subject to the following rules specific to confined animal operations:

- Rule 4102 (Nuisance) – This rule applies to any source operation that emits or may emit air contaminants or other materials. In the event that the Project or construction of the Project creates a public nuisance, it could be in violation and be subject to District enforcement action.

- Rule 4550 (Conservation Management Practices) – The purpose of this rule is to limit fugitive dust emissions from agricultural operation sites. These sites include areas of crop production, animal feeding operations and unpaved roads/equipment areas. The District's CMP handbook can be found online at the District's website at: https://ww2.valleyair.org/media/ec4byngx/cmp_handbook.pdf.

- Rule 4570 (Confined Animal Facilities) – District Rule 4570 was adopted by the District's Governing Board on June 15, 2006. Dairies with greater than or equal to 500 milk cows are subject to the requirements of District Rule 4570. Therefore, a Rule 4570 application shall also be submitted to the District.

6) District Comment Letter

The District recommends that a copy of the District's comments be provided to the Project proponent.

If you have any questions or require further information, please contact Michael Corder by e-mail at Michael.Corder@valleyair.org or by phone at (559) 230-5818.

Sincerely,

Mark Montelongo
Director of Policy and Government Affairs



Daniel Martinez
Program Manager

CALIFORNIA Water Boards

GAVIN NEWSOM
GOVERNOR

YANA GARCIA
SECRETARY FOR
ENVIRONMENTAL PROTECTION

Central Valley Regional Water Quality Control Board

19 March 2026

Victor Hernandez, Project Planner
1400 West lacey Boulevard, Engineering Building #6
Hanford, CA 93230
Email: Victor.hernandez@co.kings.ca.us

COMMENTS ON NOTICE OF AVAILIBLITY OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR CONDITIONAL USE PERMIT NO. 24-03 FOR SOZINHO DAIRY #5, 7205 HOUSTON AVENUE, HANFORD, KINGS COUNTY

Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff have received your Project Review – Consultation Notice for Conditional Use Permit No. 24-03 (CUP) that proposes to expand subject facility (Dairy) located at 7205 Houston Avenue in Hanford, Kings County. The Dairy is currently enrolled under Order No. R5-2013-0122, Reissued Waste Discharge Requirements General Order for Existing Milk Cow Dairies (Reissued General Order).

Based on the CUP, the proponent proposes expanding the footprint of the Dairy to install a post manure organic processing area, a post biodynamic aerobic (BIDA) bed organic matter processing area, a processing and product storage area, a reception pit, two mechanical separators, one tank on a concrete pad for solid separation and collection, two lift stations, and five process water processing beds (BIDA beds), twelve rows of calf hutches, one freestall barn, three new feed storage areas, one maternity barn, twelve shade structures over existing corrals, one commodity barn, one open lot corral, along with two earthen berms to trisect an existing wastewater pond. The project does not propose an expansion of the herd size.

Upon review of the project components, staff has determined that the information provided is insufficient to demonstrate the protective measures associated with the construction of the proposed reception pit. Central Valley Water Board staff contacted the project proponent, 4Creeks, and confirmed that the proposed reception pit is an existing structure located within the production area of the Dairy. The project proponent must provide additional documentation describing how the reception pit, as currently constructed or modified, incorporates preventative measures to minimize or eliminate the potential for dairy wastewater infiltration to groundwater.

Any questions regarding this matter should be directed to Lewis Lummen of this office at (559) 445-5561 or at Lewis.Lummen@waterboards.ca.gov.

Balraj Tammali
Senior Engineer
Confined Animals Facilities Unit - Fresno

cc: Sozinho Dairy #5, 12252 7th Avenue, Hanford
Kyle Parreira, 4Creeks Inc., Fresno (email)

Appendix C: Air Quality Report

1. Introduction

1.1. *Purpose of the Analysis*

This Air Quality Analysis has been prepared to address the requirements of the California Environmental Quality Act (CEQA) for evaluating air quality impacts associated with the Sozinho Dairy #5 Project as part of the Tiered Environmental Impact Report (EIR). The analysis aims to comprehensively assess the potential air quality impacts resulting from both the construction and operational phases of the proposed dairy expansion, ensuring compliance with CEQA guidelines and addressing environmental concerns raised by relevant regulatory agencies.

The analysis responds to comments provided by the San Joaquin Valley Air Pollution Control District (SJVAPCD) in their review of Conditional Use Permit No. 24-03 (CUP 24-03 Comments Received, dated June 3, 2025) and additional comments from Kings County Environmental Health Services. Specifically, this document addresses SJVAPCD's recommendations for a detailed review of construction and operational emissions, including the quantification of criteria pollutants, health risk assessments, and ambient air quality analysis, as well as Kings County's concerns regarding Valley Fever risks and hazardous materials management.

The primary objectives of this analysis are to evaluate the construction and operational air quality impacts of the Sozinho Dairy #5 expansion, located at 7205 Houston Avenue, Hanford, CA. This includes assessing emissions of criteria pollutants, toxic air contaminants, and potential odor impacts. The analysis will utilize methodologies such as the California Emissions Estimator Model (CalEEMod) and, where necessary, air dispersion modeling to quantify emissions and ensure compliance with federal and state ambient air quality standards. Additionally, the study incorporates mitigation measures to reduce impacts to less than significant levels, where feasible, and evaluates the feasibility of a Voluntary Emission Reduction Agreement (VERA) to address any exceedances of SJVAPCD significance thresholds. By addressing these components, the analysis ensures that the Project's air quality impacts are thoroughly evaluated and mitigated in accordance with CEQA and local regulatory requirements.

1.2. Project Overview

The Sozinho Dairy #5 Project, located at 7205 Houston Avenue, Hanford, CA (APNs: 016-200-005, -028, -029, -035), involves modifications to an existing dairy facility to enhance operational efficiency, animal welfare, and environmental management without expanding the herd size. The Project includes infrastructure upgrades for manure processing, process water treatment, animal housing, and operational improvements.

Existing Manure Processing Areas: The Project features a 200,000 square foot manure processing area to manage manure from proposed mechanical separators, a 40,000 square foot post-manure organic matter processing area utilizing worms to enhance nutrient availability for land application, a 150,000 square foot area for handling and drying material

from biodynamic aerobic (BIDA) beds, and a 30,000 square foot processing and product storage area for screening materials into smaller particle sizes for various land applications. Note that the organic matter operations and product storage areas are already constructed but are currently unpermitted, they will only need to be analyzed for their operating impact.

Process Water Treatment (BIDA Beds): The Project incorporates advanced wastewater treatment infrastructure, including one reception pit, two mechanical separators, a 14' x 20' tank on a concrete pad for solid separation, two earthen berms in the wastewater retention pond, two lift stations, and five BIDA beds. These beds use vermifiltration, combining worms, microbes, and wood chips to treat process water, improving its quality for reuse or land application without storage in the beds. The system operates 24 hours per day, with bi-weekly tillage to minimize odors and regular drainage channel maintenance to ensure proper function.

Animal Housing: To improve animal comfort and operational efficiency, the Project includes three feed storage areas (13,500, 84,000, and 185,400 square feet), twelve rows of calf hutches for calves aged 0-3 months, one freestall barn for heifers/cows, one maternity barn for calving cows, twelve shade structures over existing corrals, one 44,625 square foot open lot corral, one commodity barn for agricultural product storage, and one shop for equipment repair.

Operational Characteristics: The Project maintains existing dairy operations with minor increases in service and delivery vehicles for feed, milk hauling, animal transport, and maintenance. The addition of calf hutches requires one additional daily service vehicle but is expected to reduce truck trips by eliminating off-site calf transport. Every two years, BIDA bed cleaning will involve two trucks per day for 14 days to move processed wood chips for drying and land application. Two additional employees will be hired: one to monitor and maintain BIDA beds and another for calf hutch maintenance and feeding. The Project is designed to improve air and water quality through enhanced wastewater treatment and dust control measures, such as using gravel or decomposed granite around BIDA beds and implementing the Fugitive Dust Emissions Control Plan (Appendix H).

1.3. *Regulatory Framework*

The Project is subject to a comprehensive regulatory framework governing air quality at federal, state, and local levels. This framework ensures compliance with air quality standards, mitigates environmental impacts, and addresses public health concerns as required under CEQA and the Kings County Dairy Element. Below is a detailed overview of the applicable regulations, incorporating federal and state standards, San Joaquin Valley Air Pollution Control District (SJVAPCD) rules, and CEQA and Kings County requirements, as referenced in the provided IS/MND and comment letters.

Federal Regulations

- **National Ambient Air Quality Standards (NAAQS)**: Established under the Clean Air Act (CAA), the NAAQS set health-based standards for six criteria pollutants: ozone (O3), particulate matter (PM_{10} and $PM_{2.5}$), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. The San Joaquin Valley Air Basin (SJVAB), where the Project is located, is classified as **extreme nonattainment** for the 8-hour ozone standard and **serious nonattainment** for the $PM_{2.5}$ standard, reflecting significant challenges in meeting these federal thresholds. The Project has to ensure that its emissions do not exacerbate these nonattainment conditions, particularly for ozone precursors (NOx and VOCs) and $PM_{2.5}$, through compliance with federal permitting and mitigation requirements.

State Regulations

- **California Ambient Air Quality Standards (CAAQS)**: Administered by the California Air Resources Board (CARB), the CAAQS are generally more stringent than federal standards and include additional pollutants such as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The SJVAB is designated as **nonattainment** for 8-hour ozone, PM_{10}, and $PM_{2.5}$ under CAAQS, necessitating robust emission controls for the Project. The California Clean Air Act (CCAA) of 1988 mandates air districts to achieve and maintain CAAQS by the earliest practicable date, requiring a 5% annual reduction in nonattainment pollutant emissions or their precursors, averaged over three-year periods.
- **Toxic Air Contaminants (TACs)**: Under California's air toxics program (AB 1807, AB 2588, and SB 25), CARB regulates TACs, including diesel particulate matter (DPM), a significant concern for dairy operations due to emissions from heavy-duty equipment and trucks. The Project must assess TAC emissions and mitigate risks to sensitive receptors, such as the nearby residence 200 feet from the Project site, per CARB's Air Quality and Land Use Handbook.
- **California Energy Code (Title 24)**: As noted in the Energy Section of the IS/MND, Title 24 mandates energy efficiency standards for new and altered buildings, including those in dairy operations. The Project's infrastructure, such as the freestall barn and shop, must comply to minimize energy-related emissions.
- **California Green Building Standards Code (CALGreen)**: CALGreen promotes sustainable construction practices, including energy efficiency and environmental air quality. The Project's design, including wastewater treatment systems, aligns with CALGreen to reduce emissions and resource consumption

CEQA Guidelines

Under CEQA, the Project must evaluate air quality impacts, including criteria pollutants (NOx, VOCs, PM_{10}, $PM_{2.5}$, CO, SOx), TACs, and greenhouse gas (GHG) emissions, using SJVAPCD-recommended methods such as the Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI, March 2015). The Project requires a detailed emissions inventory using CalEEMod, a Health Risk Assessment (HRA) if prioritization scores exceed 10, and an Ambient Air Quality Analysis (AAQA) if emissions exceed 100 pounds per day for any pollutant (Air Quality Analysis Outline, pp. 2-4). Appendix G of the CEQA Guidelines provides significance thresholds for air quality and GHG impacts, emphasizing consistency with regional air quality plans and mitigation to less-than-significant levels (GHG from IS/MND, p. 7).

San Joaquin Valley Air Pollution Control District Rules

The SJVAPCD regulates air quality in the SJVAB and has established rules to control emissions from stationary and mobile sources, as referenced in the IS/MND and CUP 24-03 Comments Received. The following rules are applicable to the Project:

- **Rule 2010 (Permits Required)**: Requires operators of emission sources to obtain an Authority to Construct (ATC) and Permit to Operate (PTO). The Project has submitted an ATC application (C-1243237), but additional ATC applications may be required for new stationary sources, such as manure processing equipment and BIDA beds, prior to construction (CUP 24-03 Comments, p. 8).
- **Rule 2201 (New and Modified Stationary Source Review)**: Mandates Best Available Control Technology (BACT) for new or modified stationary sources to mitigate emissions. The Project's manure processing and wastewater treatment systems must incorporate BACT to comply with this rule (CUP 24-03 Comments, p. 8).
- **Rule 4102 (Nuisance)**: Prohibits operations that emit air contaminants causing public nuisance, such as odors impacting nearby receptors. The Project's odor control measures, including bi-weekly tillage of BIDA beds and drainage channel maintenance, are designed to comply with this rule (Sozinho Project Description, p. 3; CUP 24-03 Comments, p. 9).
- **Rule 4550 (Conservation Management Practices)**: Aims to reduce fugitive dust emissions from agricultural operations, including animal feeding operations and unpaved roads. The Project's Fugitive Dust Emissions Control Plan (Appendix H) aligns with this rule by implementing measures like regular corral cleaning and dust suppression (Air Quality from IS/MND, p. 11; CUP 24-03 Comments, p. 9).
- **Rule 4570 (Confined Animal Facilities)**: Applies to dairies with 500 or more milk cows, requiring a Rule 4570 application to address emissions from animal housing and

manure management. The Sozinho Dairy #5 Project, exceeding this threshold, must submit an application to ensure compliance.

- **Rule 4601 (Architectural Coatings)**: Limits volatile organic compound (VOC) emissions from architectural coatings used in construction. The Project's construction activities, such as painting new structures, must comply with VOC limits and storage/cleanup requirements.
- **Rule 4641 (Cutback, Slow Cure, and Emulsified Asphalt)**: Regulates emissions from asphalt paving and maintenance operations. If applicable, the Project must adhere to this rule for any paving activities.
- **Regulation VIII (Fugitive PM10 Prohibitions, Rule 8021)**: Requires control measures for fugitive dust from construction and earthmoving activities. For projects disturbing 1 acre or more, a Construction Notification Form is required, and for disturbances of 5 acres or more, or moving over 2,500 cubic yards of material daily, an SJVAPCD-approved Dust Control Plan is mandatory. The Project, involving significant earthmoving for manure processing and BIDA bed construction, must comply with these requirements.

Guidance for Assessing and Mitigating Air Quality Impacts (GAMAQI). SJVAPCD prepared GAMAQI to assist lead agencies and Project applicants in evaluating the potential air quality impacts of Projects in the SJVAB. GAMAQI provides SJVAPCD-recommended procedures for evaluating potential air quality impacts during the CEQA environmental review process. The GAMAQI guides short-term (construction) and long-term (operational) air emissions. The most recent version of GAMAQI, adopted on March 19, 2015, was used in this evaluation. It contains guidance on the following:

- Criteria and thresholds for determining whether a Project may have a significant adverse air quality impact;
- Specific procedures and modeling protocols for quantifying and analyzing air quality impacts;
- Methods to mitigate air quality impacts; and
- Information for air quality assessments and environmental documents, including air quality, regulatory setting, climate, and topography data.

2035 Kings County General Plan: The 2035 General Plan *Air Quality Element* includes the following goals, objectives, and policies, which reduce impacts associated with air quality that relate to the proposed Project:

AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the SJVAPCD and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.

- AQ Objective C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed Projects within the County.
  - ⇒ *AQ Policy C1.1.1*: Assess and mitigate Project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD.
  - ⇒ *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized, consistently, and reasonably mitigated at a minimum, to levels as required by CEQA.
  - ⇒ *AQ Policy C1.1.6*: Encourage and support the development of innovative and effective mitigation measures and programs to reduce air quality and climate change impacts through proactive coordination with the SJVAPCD, Project applicants, and other knowledgeable and interested parties.

AQ Goal F1: Minimize exposure of the public to hazardous air pollutant emissions, particulates and noxious odors from freeways, major arterial roadways, industrial, manufacturing, and processing facilities.

- AQ Objective F1.1: Locate adequate Sites for industrial development and roadway Projects away from existing and planned sensitive land uses which minimize or avoid potential health risks to people that might result from hazardous air pollutant emissions.
  - ⇒ *AQ Policy F2.1.1*: Coordinate with the SJVAPCD to ensure that construction, grading, excavation, and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.
  - ⇒ *AQ Policy F2.1.2*: Require all access roads, driveways, and parking areas serving new commercial and industrial development are constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.
  - ⇒ *AQ Policy C1.1.3*: Ensure that air quality and climate change impacts identified during CEQA review are minimized, consistently, and reasonably mitigated at a minimum, to levels as required by CEQA.
  - ⇒ *AQ Policy C1.1.6*: Encourage and support the development of innovative and effective mitigation measures and programs to reduce air quality and climate change impacts through proactive coordination with the SJVAPCD, Project applicants, and other knowledgeable and interested parties.

This regulatory framework ensures that the Sozinho Dairy #5 Project addresses air quality impacts through rigorous permitting, emission controls, and mitigation measures, aligning with federal, state, and local requirements to protect public health and the environment. The Project

will coordinate with SJVAPCD's Technical Services and Kings County agencies to ensure compliance.

2. Environmental Setting

2.1. Regional Air Quality Context

The San Joaquin Valley Air Basin (SJVAB) encompasses a large geographic area in central California, covering eight counties: Fresno, Kern, Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. The SJVAB is characterized by unique topographic and meteorological features that significantly influence its air quality, contributing to persistent challenges in meeting federal and state air quality standards.

Topography

The SJVAB is a broad, flat valley bordered by the Sierra Nevada mountains to the east, the Coastal Range to the west, and the Tehachapi Mountains to the south. This topography creates a bowl-like structure that traps air pollutants, limiting their dispersion. The surrounding mountains restrict airflow, causing pollutants to accumulate within the valley, particularly during periods of low wind or temperature inversions.

Meteorology

The SJVAB experiences a Mediterranean climate with hot, dry summers and mild, wet winters. High temperatures and abundant sunlight in the summer promote the formation of ground-level ozone through photochemical reactions involving volatile organic compounds (VOCs) and nitrogen oxides (NOx). During winter, temperature inversions—where a layer of warm air traps cooler air near the ground—are common, exacerbating the accumulation of particulate matter (PM_{10} and $PM_{2.5}$). Low wind speeds, particularly in the central and southern parts of the valley, further reduce pollutant dispersion, contributing to prolonged periods of poor air quality.

Air Quality Challenges

The SJVAB faces significant air quality challenges due to a combination of natural conditions, agricultural activities, industrial operations, and transportation-related emissions. The region is a major agricultural hub, with dairy operations, crop production, and associated activities contributing to emissions of ammonia, VOCs, and fugitive dust, which are precursors to ozone and particulate matter. Additionally, vehicle emissions, particularly from heavy-duty trucks, and stationary sources like industrial facilities further contribute to the pollutant load.

Nonattainment Status

The SJVAB is designated as nonattainment for several criteria pollutants under both federal and state standards, reflecting the severity of its air quality issues. Specifically:

Ozone (8-hour): The SJVAB is classified as extreme nonattainment under the National Ambient Air Quality Standards (NAAQS) for the 8-hour ozone standard (0.075 ppm) and as nonattainment under the California Ambient Air Quality Standards (CAAQS) for the 8-hour ozone standard (0.070 ppm). Ozone formation is driven by high levels of NOx and VOCs, exacerbated by the region's sunny and warm conditions.

PM_{10}: The SJVAB is in nonattainment for PM_{10} under the CAAQS (24-hour standard: 50 µg/m³; annual arithmetic mean: 20 µg/m³). Sources of PM10 include fugitive dust from agricultural operations, construction activities, and unpaved roads, as well as combustion processes.

$PM_{2.5}$: The SJVAB is classified as serious nonattainment for PM2.5 under the NAAQS (24-hour standard: 35 µg/m³; annual arithmetic mean: 15 µg/m³) and nonattainment under the CAAQS (annual arithmetic mean: 12 µg/m³). $PM_{2.5}$ is primarily generated from combustion sources, including diesel exhaust, and secondary formation from ammonia and other precursors.

These nonattainment designations reflect the SJVAB's ongoing struggle to meet health-based air quality standards, necessitating rigorous regulatory measures and mitigation strategies, as administered by the SJVAPCD, to reduce emissions and protect public health.

2.2. Local Air Quality Conditions

SJVAPCD and CARB maintain ambient air quality monitoring stations. The air quality monitoring station that monitors air pollutant data closest to the Site is the Hanford-S Irwin Street Monitoring Station. The air quality trends from this station are used to represent the ambient air quality in the Project area. The ambient air quality data below show that NO_2 levels are below the applicable State and Federal standards. However, annual average concentrations of PM_{10}, $PM_{2.5}$, and O_3 concentrations frequently exceed their respective standards. As CO ambient concentrations have become so low throughout the region, no station near the Project Site monitors CO.

Pollutant	Standard	2019	2020	2021
O_3				
Maximum 1-Hour Concentration (ppm)	State: 0.09 ppm	0.093	0.103	0.102
	No. of days exceeded	*0*	*6*	*2*
Max 8-hour concentration (ppm)	State: 0.07 ppm	0.076	0.088	0.095
	Federal: 0.07 ppm			
No. of days exceeded	State:	*13*	*26*	*16*
	Federal:	*13*	*26*	*16*
PM_{10}				
Maximum 24-hour concentration (µg/m³)	State: 50 µg/m³	211.7	180.4	175.0

	Federal: 150 μg/m³			
No. of days exceeded	State:	*17*	*22*	*146*
	Federal:	*1*	*3*	*2*
Annual avg. concentration (μg/m³)		45.2	ND	52.8
Exceeds Standard?	State: 20 μg/m³	*Yes*	*ND*	*Yes*
$PM_{2.5}$				
Maximum 24-Hour concentration (μg/m³)	Federal: 35 μg/m³	48.2	147.2	81.0
	No. of days exceeded	*20*	*52*	*31*
Annual avg. concentration (μg/m³)	State: 12 μg/m³	12.1	19.8	15.6
	Federal: 12 μg/m³			
NO_2				
Maximum 1-hour concentration (ppb):	State: 180 ppb	62.9	51.9	51.5
	Federal: 100 ppb			
No. of days exceeded	State:	*0*	*0*	*0*
	Federal:	*0*	*0*	*0*
Annual avg. concentration (ppb):	State: 30 ppb	8	8	8
	Federal: 53 ppb			
Exceeds Standard?	State:	*No*	*No*	*No*
	Federal:	*No*	*No*	*No*
Note: Pollutant concentration data from the Hanford-S Irwin Street Monitoring Station in Hanford, California.				
μg/m3 = micrograms per cubic meter *ND = No data available* *NO2 = nitrogen dioxide* *O3 = ozone*		*PM10 = particulate matter smaller than 10 microns in size* *ppb = parts per billion* *ppm = parts per million* *PM2.5 = particulate matter smaller than 2.5 microns in size*		

Sensitive Receptors and Land Uses in the Project Vicinity

Sensitive receptors include residences such as private homes, condominiums, apartments, living quarters, schools, preschools, daycare centers, in-home daycares, health facilities (e.g., hospitals, long-term care facilities, retirement, and nursing homes), community centers, places of worship, parks (excluding trails), prisons, and dormitories. The nearest sensitive receptors to the Project Site are the single-family residences located to the north and south of the Project.

3. Methodology

3.1. Construction and Operational Components

The following will be discuss the CalEEMod inputs for the construction and operational emissions projected from the Project.

Water Treatment Facilities

The following components of the project are related to process water treatment:

- One Reception Pit: 40' x 40' = 1,600 sq ft (a pit for receiving process water).
- Two Mechanical Separators: Each 300 sq ft, total 600 sq ft (machines removing solids from process water).
- One Tank and One Concrete Pad: 14' x 20' = 280 sq ft (for solid separation and collection).
- Two Lift Stations: Each 400 sq ft, total 800 sq ft (pits directing process water to treatment systems).
- Five Process Water Processing Beds: Each 1,032' x 40' = 41,280 sq ft, total 5 x 41,280 = 206,400 sq ft (BIDA beds for vermifiltration, within a 1,032' x 336' area = 346,752 sq ft).

These components collectively function as a water treatment system. The Reception Pit, Lift Stations, and Processing Beds are open areas (pits and beds), not buildings, while the

mechanical separators and tank are equipment or small structures. In CalEEMod, industrial subtypes like "General Light Industry" or "User Defined Industrial" typically apply to buildings, but these are mostly non-building areas. The "Other Non-Asphalt Surfaces" subtype is suitable for non-building, non-parking areas like pits and filtration beds, defined as "a non-asphalt area not used as a parking lot. The total area is:

1,600 + 600 + 280 + 800 + 206,400 = 209,680 sq ft.
Converted to 4.81 acres.

Feed Storage Areas

- Three (3) Feed Storage Areas: 13,500 sq ft, 84,000 sq ft, and 185,400 sq ft (open areas with concrete or packed earth bases and low walls for silage storage, not enclosed).

These are designated storage areas for animal feed, not enclosed buildings like "Unrefrigerated Warehouse." They resemble open lots with specific uses. "Other Non-Asphalt Surfaces" fits well here, as it accommodates non-building areas with concrete or earth surfaces.

Total area: 13,500 + 84,000 + 185,400 = 282,900 sq ft.
Converted to ≈ 6.5 acres.

Animal Housing and Storage Buildings

- Twelve Rows of Calf Hutches: Each 5' x 540' = 2,700 sq ft, total 12 x 2,700 = 32,400 sq ft (housing for calves).
- One Freestall Barn: 550' x 150' = 82,500 sq ft (housing for heifers/cows).
- One Maternity Barn: 300' x 160' = 48,000 sq ft (housing for calving cows).
- One Commodity Barn: 75' x 50' = 3,750 sq ft (storage for agricultural products).

These are buildings or structures for housing animals or storing commodities. The Calf Hutches are small, semi-enclosed units, while the Freestall and Maternity Barns are larger buildings. The Commodity Barn stores feed or products, akin to a warehouse. In CalEEMod, "Unrefrigerated Warehouse" is appropriate. Total building square footage:

32,400 + 82,500 + 48,000 + 3,750 = 166,650 sq ft.

Shade Structures

- Twelve Shade Structures: Over existing open lot corrals, various dimensions:
- 2 x (800' x 25') = 40,000 sq ft
- 960' x 20' = 19,200 sq ft
- 2 x (608' x 20') = 24,320 sq ft
- 3 x (85' x 30') = 7,650 sq ft
- 608' x 15' = 9,120 sq ft
- 500' x 20' = 10,000 sq ft
- 261' x 34' = 8,874 sq ft

- 262' x 42' = 11,004 sq ft

Total: 40,000 + 19,200 + 24,320 + 7,650 + 9,120 + 10,000 + 8,874 + 11,004 = 130,168 sq ft ≈ 3 acres

These are open structures over corrals for animal comfort, not enclosed buildings. They don't fit "Unrefrigerated Warehouse" due to their lack of enclosure and minimal energy use. "Other Non-Asphalt Surfaces" suits their open, functional nature.

Shop

- Shop: 45' x 25' = 1,125 sq ft (for equipment repair).

This is a building for equipment maintenance, aligning with "General Light Industry" It is distinct from storage or housing functions.

3.2. Operational Only Components

- Manure Processing Area: A 200,000 ft² area for managing manure off the proposed mechanical separators.
- Post Manure Organic Matter Processing Area: A 40,000 ft² area will be used to dry and improve manure for land application. Worms will be introduced to enhance nutrient availability and soil benefits.
- Post BIDA Bed Organic Matter Processing Area: A 150,000 ft² area for handling, storing, and drying material removed from the BIDA beds before land application.
- Processing and Product Storage Area: A 30,000 ft² area used for screening material from the organic matter areas into smaller particle sizes for various types of land application.

The Project's four areas, totaling 420,000 ft² (9.64 acres), are open, unpaved spaces for handling, drying, storing, and screening organic matter. In CalEEMod, "Other Non-Asphalt Surfaces" best fits these areas due to their outdoor, non-parking, working surface nature (e.g., dirt or gravel), capturing potential fugitive dust emissions. Other categories like General Light Industry or Unrefrigerated Warehouse imply buildings, which don't apply. Grouping all areas under this category simplifies modeling, with machinery emissions separately accounted for in CalEEMod "Off-Road Equipment" section.

3.3. Off Road Equipment

- Tractors/Loaders/Backhoes (2 units, 6 hours/day, 260 days/year): Used for moving manure in the Manure Processing Area and handling materials in the Post BIDA Bed Organic Matter Processing Area. These activities involve transporting manure and processed wood chips.
- Other Industrial Equipment (1 unit, 24 hours/day, 365 days/year): Mechanical separators operating continuously in the Manure Processing Area to separate solids from process water.
- Material Handling Equipment (1 unit, 4 hours/day, 260 days/year): Used for screening materials into smaller particle sizes in the Processing and Product Storage Area.

- Tractors/Loaders/Backhoes (1 unit, 112 hours/year): Accounts for periodic transport of processed wood chips from the Post BIDA Bed Organic Matter Processing Area, occurring two trucks per day for 14 days every other year.

4. Emissions Analysis

4.1 Construction Emissions

Construction activities for the Project will generate emissions from off-road equipment, fugitive dust, and worker vehicle trips. Emissions were quantified using the latest CARB-approved version of the CalEEMod, as recommended by the SJVAPCD. The pollutants evaluated include carbon monoxide (CO), nitrogen oxides (NOx), reactive organic gases (ROG), sulfur oxides (SOx), particulate matter less than 10 microns (PM_{10}), and particulate matter less than 2.5 microns ($PM_{2.5}$).

Based on CalEEMod outputs, the estimated annual construction emissions for the Project are as follows:

- CO: 2.34 tons per year (tpy)
- NOx: 1.82 tpy
- ROG: 0.55 tpy
- SOx: <0.005 tpy
- PM_{10}: 0.37 tpy
- $PM_{2.5}$: 0.180 tpy

The SJVAPCD significance thresholds for criteria pollutants, as outlined in the GAMAQI, are:

- CO: 100 tpy
- NOx: 10 tpy
- ROG: 10 tpy
- SOx: 27 tpy
- PM_{10}: 15 tpy
- $PM_{2.5}$: 15 tpy

All construction-related emissions for the Project are well below the SJVAPCD significance thresholds:

CO (2.34 tpy) is below the 100 tpy threshold.
NOx (1.82 tpy) is below the 10 tpy threshold.
ROG (0.55 tpy) is below the 10 tpy threshold.
SOx (<0.005 tpy) is below the 27 tpy threshold.
PM10 (0.37 tpy) and PM2.5 (0.180 tpy) are both below the 15 tpy thresholds.

To further minimize construction emissions, the Project will implement Mitigation Measure AQ-1, requiring the use of Tier 4 off-road equipment or equivalent emission controls Additionally, the Fugitive Dust Emissions Control Plan (Appendix ???) will be adhered to, incorporating measures such as regular watering of exposed areas, limiting vehicle speeds on unpaved roads, and using gravel or decomposed granite around construction sites to control fugitive dust, in compliance with SJVAPCD Regulation VIII (Rule 8011).

The construction emissions for the Project are less than significant, as they do not exceed the SJVAPCD significance thresholds. With the implementation of Mitigation Measure AQ-1 and adherence to the Fugitive Dust Emissions Control Plan, impacts from construction emissions are further reduced, ensuring compliance with regional air quality standards.

4.2. Operational Emissions

Operational emissions for the Project result from mobile sources (e.g., heavy-duty trucks for feed delivery, woodchip transport, as well as service vehicles) and stationary sources (e.g., manure processing equipment, BIDA beds, and other operational equipment). Emissions were quantified using CalEEMod, consistent with SJVAPCD guidance. The pollutants evaluated include CO, NOx, ROG, SOx, PM10, and PM2.5.

Based on CalEEMod outputs, the estimated annual operational emissions for the Project are as follows:

- CO: 3.43 tpy
- NOx: 0.79 tpy
- ROG: 1.05 tpy
- SOx: 0.015 tpy
- PM_{10}: 0.445 tpy
- $PM_{2.5}$: 0.125 tpy

The SJVAPCD significance thresholds for operational emissions, as per GAMAQI, are:

- CO: 100 tpy
- NOx: 10 tpy
- ROG: 10 tpy
- SOx: 27 tpy
- PM10: 15 tpy
- PM2.5: 15 tpy

All operational emissions for the Project are below the SJVAPCD significance thresholds:

- CO (3.43 tpy) is well below the 100 tpy threshold.
- NOx (0.79 tpy) is below the 10 tpy threshold.
- ROG (1.05 tpy) is below the 10 tpy threshold.

- SOx (0.015 tpy) is below the 27 tpy threshold.
- PM10 (0.445 tpy) and PM2.5 (0.125 tpy) are both below the 15 tpy thresholds.

The operational emissions for the Project are less than significant, as they do not exceed the SJVAPCD significance thresholds. Further analysis through an Ambient Air Quality Analysis (AAQA) is not required, as emissions do not exceed 100 pounds per day for any pollutant.

5. References

- SJVAPCD Guidance for Assessing and Mitigating Air Quality Impacts (https://www.valleyair.org/media/g4nl3p0g/gamaqi.pdf)
- CARB Air Quality and Land Use Handbook (https://www.aqmd.gov/docs/default-source/ceqa/handbook/california-air-resources-board-air-quality-and-land-use-handbook-a-community-health-perspective.pdf).
- SJVAPCD Rules and Regulations (https://www.valleyair.org/rules-and-planning/current-district-rules-and-regulations/).
- CDPH Valley Fever Fact Sheet (https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/ValleyFeverFactSheet.pdf).
- CalEEMod website (https://www.caleemod.com/).
- 2035 Kings County General Plan EIR (https://www.countyofkings.com/home/showpublisheddocument/5897/635342995809030000).

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4.2.1. Electricity Emissions By Land Use - Unmitigated

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

4.3. Area Emissions by Source

4.3.1. Unmitigated

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

5. Activity Data

5.1. Construction Schedule

5.2. Off-Road Equipment

5.2.1. Unmitigated

5.3. Construction Vehicles

5.3.1. Unmitigated

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

5.6.2. Construction Earthmoving Control Strategies

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

5.9. Operational Mobile Sources

5.9.1. Unmitigated

5.10. Operational Area Sources

5.10.1. Hearths

5.10.2. Architectural Coatings

5.10.3. Landscape Equipment

5.11. Operational Energy Consumption

5.11.1. Unmitigated

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

5.13. Operational Waste Generation

5.13.1. Unmitigated

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

5.18.2. Sequestration

5.18.2.1. Unmitigated

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

6.2. Initial Climate Risk Scores

6.3. Adjusted Climate Risk Scores

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

7.2. Healthy Places Index Scores

7.3. Overall Health & Equity Scores

7.4. Health & Equity Measures

7.5. Evaluation Scorecard

7.6. Health & Equity Custom Measures

8. User Changes to Default Data

8.1. Justifications

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sozinho Dairy #5 - Operational Only
Construction Start Date	7/1/2025
Operational Year	2025
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.4
Precipitation (days)	23
Location	36.29768911581168, -119.58477686118724
County	Kings
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2608
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.31

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	9.6	Acre	9.6	0.00	0.00	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	2.9	2.5	22	21	0.03	0.92	0.11	1.0	0.84	0.03	0.87	—	3,554	3,554	0.15	0.03	0.46	3,567
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.01	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.7	9.7	< 0.005	< 0.005	< 0.005	9.7
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.6	1.6	< 0.005	< 0.005	< 0.005	1.6

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	2.9	2.5	22	21	0.03	0.92	0.11	1.0	0.84	0.03	0.87	—	3,554	3,554	0.15	0.03	0.46	3,567
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2025	0.01	0.01	0.06	0.06	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	9.7	9.7	< 0.005	< 0.005	< 0.005	9.7
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2025	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	1.6	1.6	< 0.005	< 0.005	< 0.005	1.6

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.18	2.0	7.1	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.00	1,016	1,016	0.04	0.01	0.00	1,019
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.18	0.18	2.0	7.1	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.00	1,016	1,016	0.04	0.01	0.00	1,019
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.16	0.16	2.0	5.7	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	815	815	0.03	0.01	0.00	818
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.03	0.03	0.36	1.0	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	135	135	0.01	< 0.005	0.00	135

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	0.07	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.12	0.12	2.0	7.1	0.01	0.02	—	0.02	0.02	—	0.02	—	1,016	1,016	0.04	0.01	—	1,019
Total	0.18	0.18	2.0	7.1	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.00	1,016	1,016	0.04	0.01	0.00	1,019
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.12	0.12	2.0	7.1	0.01	0.02	—	0.02	0.02	—	0.02	—	1,016	1,016	0.04	0.01	—	1,019
Total	0.18	0.18	2.0	7.1	0.01	0.02	0.00	0.02	0.02	0.00	0.02	0.00	1,016	1,016	0.04	0.01	0.00	1,019
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	0.07	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.10	0.10	2.0	5.7	0.01	0.01	—	0.01	0.01	—	0.01	—	815	815	0.03	0.01	—	818
Total	0.16	0.16	2.0	5.7	0.01	0.01	0.00	0.01	0.01	0.00	0.01	0.00	815	815	0.03	0.01	0.00	818
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	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	0.00
Area	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	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

Water	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Off-Road	0.02	0.02	0.36	1.0	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	135	135	0.01	< 0.005	—	135
Total	0.03	0.03	0.36	1.0	< 0.005	< 0.005	0.00	< 0.005	< 0.005	0.00	< 0.005	0.00	135	135	0.01	< 0.005	0.00	135

3. Construction Emissions Details

3.1. N/A (2025) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.9	2.4	22	20	0.03	0.92	—	0.92	0.84	—	0.84	—	3,425	3,425	0.14	0.03	—	3,437
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.06	0.05	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	9.4	9.4	< 0.005	< 0.005	—	9.4
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—

Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.6	1.6	< 0.005	< 0.005	—	1.6
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.05	0.76	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	129	129	0.01	< 0.005	0.46	131
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.32	0.32	< 0.005	< 0.005	< 0.005	0.33
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.05	0.05	< 0.005	< 0.005	< 0.005	0.05
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Total	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	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Total	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
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	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
Total	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
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Total	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

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	0.07	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.03	0.03	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.07	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.01	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	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
Total	0.01	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Tractors/ Loaders/	0.04	0.04	0.23	3.3	< 0.005	0.01	—	0.01	0.01	—	0.01	—	472	472	0.02	< 0.005	—	474
Other General Industrial Equipment	0.06	0.06	1.7	2.6	< 0.005	0.01	—	0.01	0.01	—	0.01	—	370	370	0.02	< 0.005	—	372
Other Material Handling Equipment	0.02	0.02	0.09	1.2	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	173	173	0.01	< 0.005	—	174
Total	0.12	0.12	2.0	7.1	0.01	0.02	—	0.02	0.02	—	0.02	—	1,016	1,016	0.04	0.01	—	1,019
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.04	0.04	0.23	3.3	< 0.005	0.01	—	0.01	0.01	—	0.01	—	472	472	0.02	< 0.005	—	474
Other General Industrial Equipment	0.06	0.06	1.7	2.6	< 0.005	0.01	—	0.01	0.01	—	0.01	—	370	370	0.02	< 0.005	—	372
Other Material Handling Equipment	0.02	0.02	0.09	1.2	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	173	173	0.01	< 0.005	—	174
Total	0.12	0.12	2.0	7.1	0.01	0.02	—	0.02	0.02	—	0.02	—	1,016	1,016	0.04	0.01	—	1,019
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tractors/ Loaders/ Backhoes	0.01	0.01	0.03	0.41	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	53	53	< 0.005	< 0.005	—	53
Other General Industrial Equipment	0.01	0.01	0.32	0.47	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	61	61	< 0.005	< 0.005	—	62

Other Material Handling Equipment	< 0.005	< 0.005	0.01	0.16	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	20	20	< 0.005	< 0.005	—	21
Total	0.02	0.02	0.36	1.0	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	135	135	0.01	< 0.005	—	135

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
N/A	Demolition	7/1/2025	7/1/2025	5.0	1.00	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
N/A	Concrete/Industrial Saws	Diesel	Average	1.00	8.0	33	0.73

N/A	Excavators	Diesel	Average	3.0	8.0	36	0.38
N/A	Rubber Tired Dozers	Diesel	Average	2.0	8.0	367	0.40

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
N/A	Worker	15	11	LDA,LDT1,LDT2
N/A	Vendor	—	3.5	HHDT,MHDT
N/A	Hauling	0.00	20	HHDT
N/A	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
N/A	0.00	0.00	0.00	—	0.00

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2025	0.00	453	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Other Non-Asphalt Surfaces	Wood Fireplaces	0	0
Other Non-Asphalt Surfaces	Gas Fireplaces	0	0
Other Non-Asphalt Surfaces	Propane Fireplaces	0	0
Other Non-Asphalt Surfaces	Electric Fireplaces	0	0
Other Non-Asphalt Surfaces	No Fireplaces	0	0
Other Non-Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Non-Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

—	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
undefined	0.00	0.00	0.00	0.00	25,195

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	2.0	6.0	84	0.37
Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.00	1.00	84	0.37
Other General Industrial Equipment	Diesel	Tier 4 Final	1.00	24	35	0.34
Other Material Handling Equipment	Diesel	Tier 4 Final	1.00	4.0	93	0.40

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	31	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	85
AQ-PM	96
AQ-DPM	19
Drinking Water	72
Lead Risk Housing	68
Pesticides	84
Toxic Releases	42
Traffic	6.5
Effect Indicators	—
CleanUp Sites	81
Groundwater	100
Haz Waste Facilities/Generators	22
Impaired Water Bodies	24
Solid Waste	97
Sensitive Population	—
Asthma	88
Cardio-vascular	92
Low Birth Weights	37

Socioeconomic Factor Indicators	—
Education	72
Housing	39
Linguistic	81
Poverty	75
Unemployment	43

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	36.28897729
Employed	73.4377005
Median HI	39.08635955
Education	—
Bachelor's or higher	29.23136148
High school enrollment	6.018221481
Preschool enrollment	51.30245092
Transportation	—
Auto Access	64.27563198
Active commuting	73.79699731
Social	—
2-parent households	95.6242782
Voting	68.36904915
Neighborhood	—
Alcohol availability	97.0101373
Park access	2.194276915
Retail density	1.847812139

Supermarket access	11.89529065
Tree canopy	3.990760939
Housing	—
Homeownership	40.15141794
Housing habitability	71.25625561
Low-inc homeowner severe housing cost burden	93.62248171
Low-inc renter severe housing cost burden	96.00923906
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	30.20659566
Arthritis	0.0
Asthma ER Admissions	5.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	15.1
Cognitively Disabled	72.6
Physically Disabled	68.4
Heart Attack ER Admissions	51.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	69.7
Physical Health Not Good	0.0
Stroke	0.0

Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	56.6
Elderly	59.3
English Speaking	25.3
Foreign-born	55.3
Outdoor Workers	2.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	99.5
Traffic Density	4.7
Traffic Access	0.0
Other Indices	—
Hardship	51.1
Other Decision Support	—
2016 Voting	60.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	90
Healthy Places Index Score for Project Location (b)	43
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Construction: Construction Phases	No Construction Needed
Operations: Off-Road Equipment	Tractors/Loaders/Backhoes: Used for moving manure in the Manure Processing Area and handling materials in the Post BIDA Bed Organic Matter Processing Area Tractors/Loaders/Backhoes:For periodic transport of processed wood chips from the Post BIDA Bed Organic Matter Processing Area, occurring two trucks per day for 14 days every other year. Other Industrial Equipment: mechanical separators operating continuously in the Manure Processing Area to separate solids from process water. Material Handling Equipment: Used for screening materials into smaller particle sizes in the Processing and Product Storage Area

Sozinho Dairy #5 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sozinho Dairy #5
Construction Start Date	1/1/2026
Operational Year	2027
Lead Agency	Kings County
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.4
Precipitation (days)	23
Location	36.29764652234978, -119.58534482273285
County	Kings
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2608
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.31

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	4.8	Acre	4.8	0.00	0.00	0.00	—	Water Treatment System Group

Other Non-Asphalt Surfaces	6.5	Acre	6.5	0.00	0.00	—	—	Feed Storage Areas
Unrefrigerated Warehouse-No Rail	167	1000sqft	3.8	166,650	0.00	—	—	Animal Housing and Storage Buildings
Other Non-Asphalt Surfaces	3.0	Acre	3.0	0.00	0.00	—	—	Shade Structures
General Light Industry	1.1	1000sqft	0.03	1,125	0.00	—	—	Shop

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	48	48	11	17	0.03	0.38	0.59	0.97	0.35	0.15	0.50	—	3,304	3,304	0.13	0.09	2.7	3,336
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.8	3.2	29	29	0.06	1.2	20	21	1.1	10	11	—	6,747	6,747	0.27	0.09	0.07	6,772
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.1	3.0	10.0	13	0.02	0.38	1.6	2.0	0.35	0.66	1.0	—	2,670	2,670	0.10	0.06	0.67	2,689
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.55	1.8	2.3	< 0.005	0.07	0.30	0.37	0.06	0.12	0.18	—	442	442	0.02	0.01	0.11	445

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.6	1.4	11	17	0.03	0.38	0.59	0.97	0.35	0.15	0.50	—	3,304	3,304	0.13	0.09	2.7	3,336
2027	48	48	10	16	0.03	0.34	0.59	0.93	0.31	0.15	0.46	—	3,285	3,285	0.11	0.09	2.5	3,316
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.8	3.2	29	29	0.06	1.2	20	21	1.1	10	11	—	6,747	6,747	0.27	0.09	0.07	6,772
2027	1.5	1.3	10	16	0.03	0.34	0.59	0.93	0.31	0.15	0.46	—	3,220	3,220	0.12	0.09	0.06	3,249
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.4	1.2	10.0	13	0.02	0.38	1.6	2.0	0.35	0.66	1.0	—	2,670	2,670	0.10	0.06	0.67	2,689
2027	3.1	3.0	3.3	5.0	0.01	0.11	0.17	0.29	0.10	0.04	0.15	—	1,008	1,008	0.04	0.03	0.32	1,017
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.26	0.22	1.8	2.3	< 0.005	0.07	0.30	0.37	0.06	0.12	0.18	—	442	442	0.02	0.01	0.11	445
2027	0.57	0.55	0.60	0.92	< 0.005	0.02	0.03	0.05	0.02	0.01	0.03	—	167	167	0.01	< 0.005	0.05	168

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.6	6.3	2.3	18	0.03	0.10	2.4	2.5	0.09	0.60	0.69	160	5,288	5,448	16	0.34	9.5	5,970
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	5.2	5.0	2.4	9.4	0.03	0.08	2.4	2.4	0.08	0.60	0.68	160	5,014	5,173	16	0.35	0.53	5,689
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.8	5.6	2.3	13	0.03	0.09	2.3	2.4	0.09	0.59	0.67	160	5,093	5,253	16	0.35	4.3	5,771
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.1	1.0	0.43	2.4	0.01	0.02	0.42	0.44	0.02	0.11	0.12	26	843	870	2.7	0.06	0.71	955

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.3	1.2	1.5	10	0.03	0.03	2.4	2.4	0.02	0.60	0.62	—	3,045	3,045	0.09	0.15	9.2	3,101
Area	5.2	5.1	0.06	7.3	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30	30	< 0.005	< 0.005	—	30
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74	190	264	7.6	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85	0.00	85	8.5	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	6.6	6.3	2.3	18	0.03	0.10	2.4	2.5	0.09	0.60	0.69	160	5,288	5,448	16	0.34	9.5	5,970
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.2	1.1	1.6	8.7	0.03	0.03	2.4	2.4	0.02	0.60	0.62	—	2,800	2,800	0.10	0.16	0.24	2,850
Area	3.9	3.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74	190	264	7.6	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85	0.00	85	8.5	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

Total	5.2	5.0	2.4	9.4	0.03	0.08	2.4	2.4	0.08	0.60	0.68	160	5,014	5,173	16	0.35	0.53	5,689
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.2	1.1	1.6	8.9	0.03	0.03	2.3	2.3	0.02	0.59	0.61	—	2,865	2,865	0.10	0.15	4.0	2,917
Area	4.5	4.5	0.03	3.6	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	15	15	< 0.005	< 0.005	—	15
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74	190	264	7.6	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85	0.00	85	8.5	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	5.8	5.6	2.3	13	0.03	0.09	2.3	2.4	0.09	0.59	0.67	160	5,093	5,253	16	0.35	4.3	5,771
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.22	0.20	0.28	1.6	0.01	< 0.005	0.42	0.43	< 0.005	0.11	0.11	—	474	474	0.02	0.03	0.66	483
Area	0.83	0.82	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.4	2.4	< 0.005	< 0.005	—	2.5
Energy	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	335	335	0.03	< 0.005	—	336
Water	—	—	—	—	—	—	—	—	—	—	—	12	31	44	1.3	0.03	—	84
Waste	—	—	—	—	—	—	—	—	—	—	—	14	0.00	14	1.4	0.00	—	49
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.1	1.0	0.43	2.4	0.01	0.02	0.42	0.44	0.02	0.11	0.12	26	843	870	2.7	0.06	0.71	955

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.7	2.3	21	19	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.1	1.0	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31	31	< 0.005	< 0.005	—	31
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.06	0.06	0.05	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	111	111	< 0.005	< 0.005	0.01	113
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.3	6.3	< 0.005	< 0.005	0.01	6.4
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.0	1.0	< 0.005	< 0.005	< 0.005	1.1
Vendor	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	0.00
Hauling	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	0.00

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.7	3.1	29	29	0.05	1.2	—	1.2	1.1	—	1.1	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	20	20	—	10	10	—	—	—	—	—	—	—

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.80	0.79	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24	24	< 0.005	< 0.005	—	24
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	130	130	< 0.005	0.01	0.01	132
Vendor	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	0.00
Hauling	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.7	3.7	< 0.005	< 0.005	0.01	3.7
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
Vendor	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	0.00
Hauling	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	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.6	3.0	27	28	0.06	1.1	—	1.1	1.0	—	1.0	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.2	9.2	—	3.7	3.7	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.30	0.25	2.2	2.3	0.01	0.09	—	0.09	0.08	—	0.08	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	90	90	< 0.005	< 0.005	—	90
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.71	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	149	149	< 0.005	0.01	0.01	151
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	13	13	< 0.005	< 0.005	0.02	13
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.1	2.1	< 0.005	< 0.005	< 0.005	2.1
Vendor	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	0.00
Hauling	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	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.3	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.3	1.1	9.9	13	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	5.4	7.1	0.01	0.21	—	0.21	0.19	—	0.19	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.3	< 0.005	0.04	—	0.04	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.30	0.20	3.3	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	591	591	0.03	0.02	1.9	600
Vendor	0.03	0.02	0.54	0.26	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	316	316	0.01	0.05	0.79	330
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.26	0.26	2.5	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	524	524	0.02	0.02	0.05	531
Vendor	0.02	0.02	0.57	0.27	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	317	317	0.01	0.05	0.02	330
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.13	1.4	0.00	0.00	0.27	0.27	0.00	0.07	0.07	—	295	295	0.01	0.01	0.45	300
Vendor	0.01	0.01	0.30	0.15	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	172	172	< 0.005	0.02	0.18	180
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	49	49	< 0.005	< 0.005	0.08	50
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28	28	< 0.005	< 0.005	0.03	30
Hauling	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	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.2	1.0	9.4	13	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.2	1.0	9.4	13	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.6	3.6	0.01	0.09	—	0.09	0.09	—	0.09	—	671	671	0.03	0.01	—	673
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	111	111	< 0.005	< 0.005	—	111
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.28	0.18	3.0	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	579	579	0.01	0.02	1.7	587
Vendor	0.03	0.02	0.52	0.25	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	309	309	0.01	0.05	0.73	324
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.25	0.24	2.3	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	513	513	0.02	0.02	0.05	520
Vendor	0.02	0.02	0.55	0.27	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	310	310	0.01	0.05	0.02	324
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.68	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	149	149	< 0.005	0.01	0.21	151
Vendor	0.01	0.01	0.15	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	87	87	< 0.005	0.01	0.09	91
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	25	25	< 0.005	< 0.005	0.03	25
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14	14	< 0.005	< 0.005	0.01	15
Hauling	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	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.88	0.74	6.9	10.0	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	83	83	< 0.005	< 0.005	—	83
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	14	14	< 0.005	< 0.005	—	14
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.04	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	123	123	< 0.005	< 0.005	0.37	125
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.2	6.2	< 0.005	< 0.005	0.01	6.3
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.0	1.0	< 0.005	< 0.005	< 0.005	1.0
Vendor	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	0.00
Hauling	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	0.00

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.1	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	48	48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.3	7.3	< 0.005	< 0.005	—	7.3
Architectural Coatings	2.6	2.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.2	1.2	< 0.005	< 0.005	—	1.2
Architectural Coatings	0.48	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.61	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	116	116	< 0.005	< 0.005	0.35	117
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.8	5.8	< 0.005	< 0.005	0.01	5.9
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.98
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Unrefrigerated Warehouse-No Rail	1.3	1.2	1.4	10	0.03	0.02	2.3	2.3	0.02	0.59	0.61	—	2,987	2,987	0.09	0.15	9.1	3,042
General Light Industry	0.02	0.02	0.03	0.20	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	58	58	< 0.005	< 0.005	0.18	59
Total	1.3	1.2	1.5	10	0.03	0.03	2.4	2.4	0.02	0.60	0.62	—	3,045	3,045	0.09	0.15	9.2	3,101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00

Unrefrigerated	1.1	1.0	1.6	8.6	0.03	0.02	2.3	2.3	0.02	0.59	0.61	—	2,747	2,747	0.10	0.15	0.23	2,796
General Light Industry	0.02	0.02	0.03	0.17	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	53	53	< 0.005	< 0.005	< 0.005	54
Total	1.2	1.1	1.6	8.7	0.03	0.03	2.4	2.4	0.02	0.60	0.62	—	2,800	2,800	0.10	0.16	0.24	2,850
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Unrefrigerated Warehouse-No Rail	0.21	0.19	0.28	1.6	0.01	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	466	466	0.02	0.02	0.65	475
General Light Industry	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	8.2	8.2	< 0.005	< 0.005	0.01	8.4
Total	0.22	0.20	0.28	1.6	0.01	< 0.005	0.42	0.43	< 0.005	0.11	0.11	—	474	474	0.02	0.03	0.66	483

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Unrefrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	—	1,106	1,106	0.08	0.01	—	1,111
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	14	14	< 0.005	< 0.005	—	14
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,120	1,120	0.08	0.01	—	1,125
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,106	1,106	0.08	0.01	—	1,111
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	14	14	< 0.005	< 0.005	—	14
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,120	1,120	0.08	0.01	—	1,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	183	183	0.01	< 0.005	—	184
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	2.4	2.4	< 0.005	< 0.005	—	2.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	185	185	0.01	< 0.005	—	186

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.08	0.04	0.74	0.62	< 0.005	0.06	—	0.06	0.06	—	0.06	—	887	887	0.08	< 0.005	—	890
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16	16	< 0.005	< 0.005	—	16
Total	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	904	904	0.08	< 0.005	—	906
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.08	0.04	0.74	0.62	< 0.005	0.06	—	0.06	0.06	—	0.06	—	887	887	0.08	< 0.005	—	890
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16	16	< 0.005	< 0.005	—	16
Total	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	904	904	0.08	< 0.005	—	906
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.01	0.01	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	147	147	0.01	< 0.005	—	147
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.7	2.7	< 0.005	< 0.005	—	2.7
Total	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	150	150	0.01	< 0.005	—	150

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.6	3.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.3	1.2	0.06	7.3	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30	30	< 0.005	< 0.005	—	30
Total	5.2	5.1	0.06	7.3	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30	30	< 0.005	< 0.005	—	30

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.6	3.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.9	3.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.66	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.12	0.11	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.4	2.4	< 0.005	< 0.005	—	2.5
Total	0.83	0.82	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.4	2.4	< 0.005	< 0.005	—	2.5

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	74	188	262	7.6	0.18	—	506
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.50	1.3	1.8	0.05	< 0.005	—	3.4
Total	—	—	—	—	—	—	—	—	—	—	—	74	190	264	7.6	0.18	—	510
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	74	188	262	7.6	0.18	—	506
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.50	1.3	1.8	0.05	< 0.005	—	3.4
Total	—	—	—	—	—	—	—	—	—	—	—	74	190	264	7.6	0.18	—	510
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	12	31	43	1.3	0.03	—	84

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.08	0.21	0.29	0.01	< 0.005	—	0.57
Total	—	—	—	—	—	—	—	—	—	—	—	12	31	44	1.3	0.03	—	84

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	84	0.00	84	8.4	0.00	—	295
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.75	0.00	0.75	0.08	0.00	—	2.6
Total	—	—	—	—	—	—	—	—	—	—	—	85	0.00	85	8.5	0.00	—	298
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	84	0.00	84	8.4	0.00	—	295
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.75	0.00	0.75	0.08	0.00	—	2.6
Total	—	—	—	—	—	—	—	—	—	—	—	85	0.00	85	8.5	0.00	—	298
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	14	0.00	14	1.4	0.00	—	49
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.44
Total	—	—	—	—	—	—	—	—	—	—	—	14	0.00	14	1.4	0.00	—	49

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2026	1/29/2026	5.0	20	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.0	10.0	—
Grading	Grading	2/14/2026	3/28/2026	5.0	30	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.0	300	—
Paving	Paving	5/24/2027	6/21/2027	5.0	20	—
Architectural Coating	Architectural Coating	6/22/2027	7/20/2027	5.0	20	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.0	33	0.73
Demolition	Excavators	Diesel	Average	3.0	8.0	36	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.0	8.0	367	0.40

Site Preparation	Rubber Tired Dozers	Diesel	Average	3.0	8.0	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.0	8.0	84	0.37
Grading	Excavators	Diesel	Average	2.0	8.0	36	0.38
Grading	Graders	Diesel	Average	1.00	8.0	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.0	367	0.40
Grading	Scrapers	Diesel	Average	2.0	8.0	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.0	8.0	84	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.0	367	0.29
Building Construction	Forklifts	Diesel	Average	3.0	8.0	82	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.0	14	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.0	7.0	84	0.37
Building Construction	Welders	Diesel	Average	1.00	8.0	46	0.45
Paving	Pavers	Diesel	Average	2.0	8.0	81	0.42
Paving	Paving Equipment	Diesel	Average	2.0	8.0	89	0.36
Paving	Rollers	Diesel	Average	2.0	8.0	36	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.0	37	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15	11	LDA,LDT1,LDT2
Demolition	Vendor	—	3.5	HHDT,MHDT
Demolition	Hauling	0.00	20	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	18	11	LDA,LDT1,LDT2

Site Preparation	Vendor	—	3.5	HHDT,MHDT
Site Preparation	Hauling	0.00	20	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	20	11	LDA,LDT1,LDT2
Grading	Vendor	—	3.5	HHDT,MHDT
Grading	Hauling	0.00	20	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	70	11	LDA,LDT1,LDT2
Building Construction	Vendor	27	3.5	HHDT,MHDT
Building Construction	Hauling	0.00	20	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	15	11	LDA,LDT1,LDT2
Paving	Vendor	—	3.5	HHDT,MHDT
Paving	Hauling	0.00	20	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	14	11	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	3.5	HHDT,MHDT
Architectural Coating	Hauling	0.00	20	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	251,663	83,888	37,401

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	0.00
Site Preparation	—	—	15	0.00	0.00
Grading	—	—	90	0.00	0.00
Paving	0.00	0.00	0.00	0.00	14

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Other Non-Asphalt Surfaces	4.8	0%
Paving	Other Non-Asphalt Surfaces	6.5	0%
Paving	Unrefrigerated Warehouse-No Rail	0.00	0%
Paving	Other Non-Asphalt Surfaces	3.0	0%
Paving	General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	453	0.03	< 0.005
2027	0.00	453	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unrefrigerated Warehouse-No Rail	290	290	290	105,839	3,273	3,273	3,273	1,194,656
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	5.6	2.2	5.6	1,865	63	25	63	21,049

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Other Non-Asphalt Surfaces	Wood Fireplaces	0	0
Other Non-Asphalt Surfaces	Gas Fireplaces	0	0
Other Non-Asphalt Surfaces	Propane Fireplaces	0	0
Other Non-Asphalt Surfaces	Electric Fireplaces	0	0
Other Non-Asphalt Surfaces	No Fireplaces	0	0
Other Non-Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Non-Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Pellet Wood Stoves	0	0
Other Non-Asphalt Surfaces	Wood Fireplaces	0	0
Other Non-Asphalt Surfaces	Gas Fireplaces	0	0
Other Non-Asphalt Surfaces	Propane Fireplaces	0	0

Other Non-Asphalt Surfaces	Electric Fireplaces	0	0
Other Non-Asphalt Surfaces	No Fireplaces	0	0
Other Non-Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Non-Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Pellet Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Wood Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Gas Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Propane Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Electric Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	No Fireplaces	0	0
Unrefrigerated Warehouse-No Rail	Conventional Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Catalytic Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Non-Catalytic Wood Stoves	0	0
Unrefrigerated Warehouse-No Rail	Pellet Wood Stoves	0	0
Other Non-Asphalt Surfaces	Wood Fireplaces	0	0
Other Non-Asphalt Surfaces	Gas Fireplaces	0	0
Other Non-Asphalt Surfaces	Propane Fireplaces	0	0
Other Non-Asphalt Surfaces	Electric Fireplaces	0	0
Other Non-Asphalt Surfaces	No Fireplaces	0	0
Other Non-Asphalt Surfaces	Conventional Wood Stoves	0	0
Other Non-Asphalt Surfaces	Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Non-Catalytic Wood Stoves	0	0
Other Non-Asphalt Surfaces	Pellet Wood Stoves	0	0
General Light Industry	Wood Fireplaces	0	0
General Light Industry	Gas Fireplaces	0	0
General Light Industry	Propane Fireplaces	0	0
General Light Industry	Electric Fireplaces	0	0

General Light Industry	No Fireplaces	0	0
General Light Industry	Conventional Wood Stoves	0	0
General Light Industry	Catalytic Wood Stoves	0	0
General Light Industry	Non-Catalytic Wood Stoves	0	0
General Light Industry	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

—	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
undefined	0.00	0.00	251,663	83,888	37,401

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
Unrefrigerated Warehouse-No Rail	890,595	453	0.0330	0.0040	2,769,153
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
General Light Industry	11,463	453	0.0330	0.0040	50,572

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Unrefrigerated Warehouse-No Rail	38,537,813	0.00
Other Non-Asphalt Surfaces	0.00	0.00
General Light Industry	260,156	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Unrefrigerated Warehouse-No Rail	157	0.00
Other Non-Asphalt Surfaces	0.00	0.00
General Light Industry	1.4	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.0	4.0	18

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	31	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.

The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	85
AQ-PM	96
AQ-DPM	19
Drinking Water	72

Lead Risk Housing	68
Pesticides	84
Toxic Releases	42
Traffic	6.5
Effect Indicators	—
CleanUp Sites	81
Groundwater	100
Haz Waste Facilities/Generators	22
Impaired Water Bodies	24
Solid Waste	97
Sensitive Population	—
Asthma	88
Cardio-vascular	92
Low Birth Weights	37
Socioeconomic Factor Indicators	—
Education	72
Housing	39
Linguistic	81
Poverty	75
Unemployment	43

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	36.28897729
Employed	73.4377005
Median HI	39.08635955

Education	—
Bachelor's or higher	29.23136148
High school enrollment	6.018221481
Preschool enrollment	51.30245092
Transportation	—
Auto Access	64.27563198
Active commuting	73.79699731
Social	—
2-parent households	95.6242782
Voting	68.36904915
Neighborhood	—
Alcohol availability	97.0101373
Park access	2.194276915
Retail density	1.847812139
Supermarket access	11.89529065
Tree canopy	3.990760939
Housing	—
Homeownership	40.15141794
Housing habitability	71.25625561
Low-inc homeowner severe housing cost burden	93.62248171
Low-inc renter severe housing cost burden	96.00923906
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	30.20659566
Arthritis	0.0
Asthma ER Admissions	5.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0

Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	15.1
Cognitively Disabled	72.6
Physically Disabled	68.4
Heart Attack ER Admissions	51.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	69.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	56.6
Elderly	59.3
English Speaking	25.3
Foreign-born	55.3
Outdoor Workers	2.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	99.5

Traffic Density	4.7
Traffic Access	0.0
Other Indices	—
Hardship	51.1
Other Decision Support	—
2016 Voting	60.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	90
Healthy Places Index Score for Project Location (b)	43
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Appendix D: Health Risk Assessment Technical Report

Technical Report

Health Risk Assessment
For California Environmental Quality Act (CEQA)

Project Name:

Sozinho Dairy #5
Hanford, CA

Prepared for:

4Creeks, Inc.
Visalia, CA

Author:

Core Environmental Consul' ng
Clovis, CA

Lead Agency:

County of Kings

Date of Preparation:

November 2025

CORE
ENVIRONMENTAL
CONSULTING

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1 Executive Summary

This technical report has been prepared to summarize the background, methodology, and results of a Health Risk Assessment (HRA) for the Sozinho Dairy #5 project (Project). The HRA evaluates the poten' al significance of impacts to nearby sensi' ve receptors from Toxic Air Contaminant (TAC) emissions that could be released during Project construc' on and opera' on.

The Project would modify the exis' ng dairy facility in Hanford, California to enhance opera' onal efficiency, animal welfare, and environmental management, without expanding the herd size. Modifica' ons include infrastructure upgrades for manure processing, process water treatment, animal housing, and opera' onal improvements.

The Project is subject to the California Environmental Quality Act (CEQA), with County of Kings (County) serving as the Lead Agency. This HRA was completed to support the Ini' al Study and permi4 ng.

The San Joaquin Valley Air Pollu' on Control District (SJVAPCD) is tasked with developing and enforcing air pollu' on control regula' ons and programs within the San Joaquin Valley Air Basin (SJVAB), where the Project site is located. For Projects requiring any discre' onary approvals related to air quality (such as Permit to Operate), SJVAPCD serves as a Responsible Agency under CEQA and is responsible for providing guidance and reviewing air quality assessments.

SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in its *Guidance for Assessing and Mitigating Air Quality Impacts*[1] (GAMAQI). Projects that would either place a new source of TAC in the vicinity of exis' ng sensi' ve receptors, or would place new sensi' ve receptors in the vicinity of exis' ng sources of TAC, must be assessed to determine whether the resul' ng health risk to sensi' ve receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, acute, and chronic risk.

This HRA was prepared in accordance with the guidelines outlined in the Office of Environmental Health Hazard Assessment (OEHHA) *Guidance Manual for Preparation of Health Risk Assessments*[2], SJVAPCD Policy *APR 1906 – Framework for Performing Health Risk Assessments*[3], and SJVAPCD *Guidance for Air Dispersion Modeling*[4].

The health risk to nearby sensi' ve receptors due to emissions of diesel par' culate ma9 er (DPM), associated with construc' on vehicle and equipment use, was modeled using the USEPA *American Meteorological Society/EPA Regulatory model* (AERMOD) and CARB Hotspots Analysis and Repor' ng Program (HARP2) *Air Dispersion Modeling and Risk Tool*[5] (ADMRT). Opera' onal health risks were assessed qualita' vely because the Project would not introduce any new substan' al sources of TAC.

[1] (San Joaquin Valley Air Pollu' on Control District, 2015)
[2] (Office of Environmental Health Hazard Asssessment, 2015)
[3] (San Joaquin Valley Air Pollu' on Control District, 2020)
[4] (San Joaquin Valley Air Pollu' on Control District, 2022a)
[5] (California Air Resources Board, 2022a)

Calculated health risks to sensi' ve receptors from Project TAC emissions would not exceed the SJVAPCD thresholds of significance. Therefore, the Project would not expose sensi' ve receptors to substan' al pollutant concentra' ons. Impacts would be ***less than significant***.

An Ambient Air Quality Analysis (AAQA) screening was also performed. Project maximum daily emissions of criteria pollutants would not exceed 100 pounds per day, during construc' on or opera' on, and would therefore not create a localized exceedance of Na' onal or California Ambient Air Quality Standards. Impacts would be ***less than significant***.

2 Project Description

The Sozinho Dairy #5 Project, located at 7205 Houston Avenue, Hanford, CA (APNs: 016-200- 005, -028, -029, -035), involves modifica' ons to an exis' ng dairy facility to enhance opera' onal efficiency, animal welfare, and environmental management without expanding the herd size. The Project includes infrastructure upgrades for manure processing, process water treatment, animal housing, and opera' onal improvements.

Existing Manure Processing Areas (operational components to assess: The Project features a 200,000 square foot manure processing area to manage manure from proposed mechanical separators, a 40,000 square foot post-manure organic ma9 er processing area u' lizing worms to enhance nutrient availability for land applica' on, a 150,000 square foot area for handling and drying material from biodynamic aerobic (BIDA) beds, and a 30,000 square foot processing and product storage area for screening materials into smaller par' cle sizes for various land applica' ons. Note that the organic ma9 er opera' ons and product storage areas are already constructed but are currently unpermi9 ed, they will only need to be analyzed for their opera' ng impact.

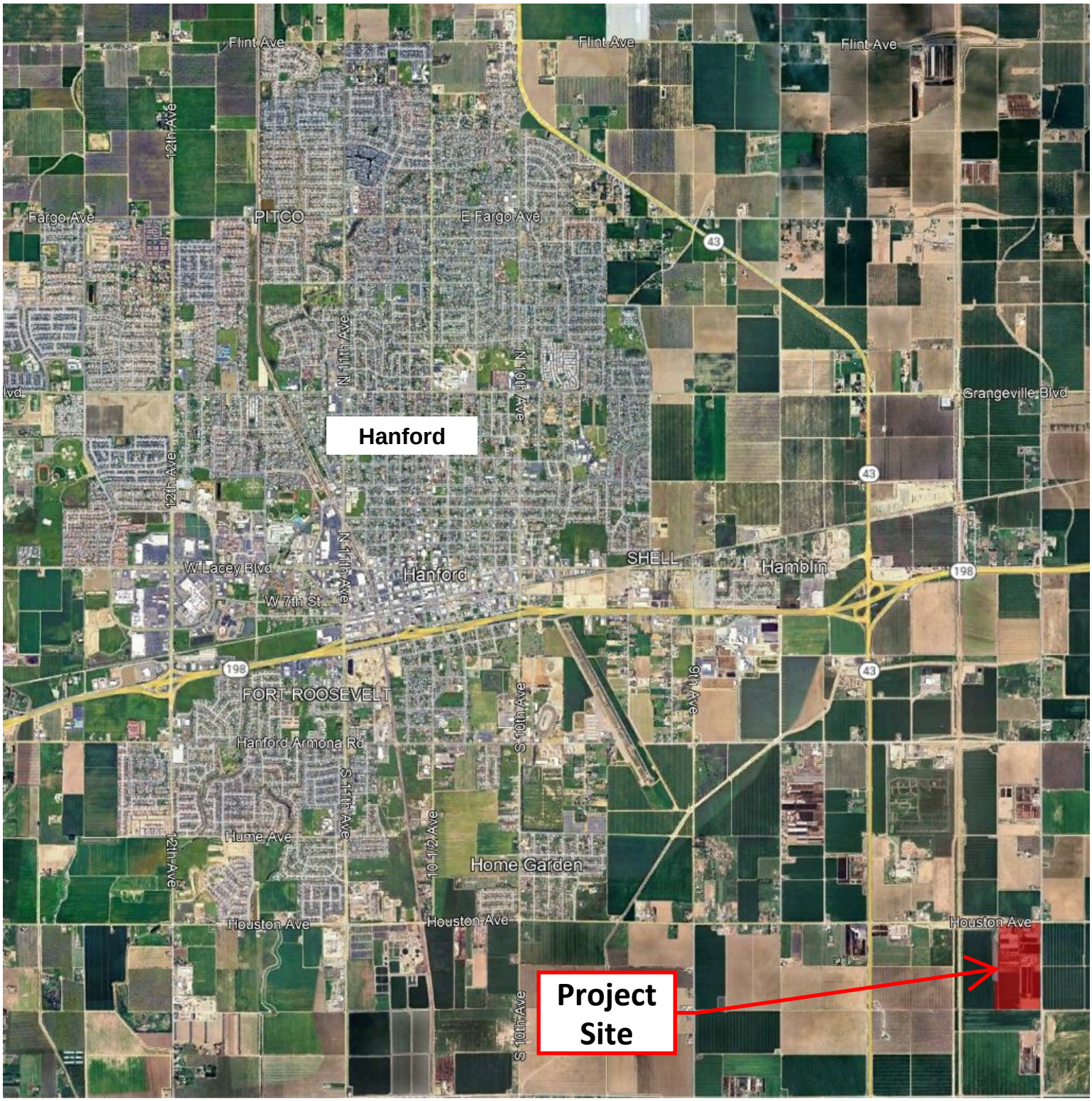
Process Water Treatment (BIDA Beds): The Project incorporates advanced wastewater treatment infrastructure, including one recep' on pit, two mechanical separators, a 14’ x 20’ tank on a concrete pad for solid separa' on, two earthen berms in the wastewater reten' on pond, two liJ sta' ons, and five BIDA beds. These beds use vermifiltra' on, combining worms, microbes, and wood chips to treat process water, improving its quality for reuse or land applica' on without storage in the beds. The system operates 24 hours per day, with bi-weekly ' llage to minimize odors and regular drainage channel maintenance to ensure proper func' on.

Animal Housing: To improve animal comfort and opera' onal efficiency, the Project includes three feed storage areas (13,500, 84,000, and 185,400 square feet), twelve rows of calf hutches for calves aged 0-3 months, one freestall barn for heifers/cows, one maternity barn for calving cows, twelve shade structures over exis' ng corrals, one 44,625 square foot open lot corral, one commodity barn for agricultural product storage, and one shop for equipment repair.

Operational Characteristics: The Project maintains exis' ng dairy opera' ons with minor increases in service and delivery vehicles for feed, milk hauling, animal transport, and maintenance. The addi' on of calf hutches requires one addi' onal daily service vehicle but is expected to reduce truck trips by elimina' ng off-site calf transport. Every two years, BIDA bed cleaning will involve two trucks per day for 14 days to move processed wood chips for drying and land applica' on. Two addi' onal employees will be hired: one to monitor and maintain BIDA beds and another for calf hutch maintenance and feeding. The Project is designed to improve air and water quality through enhanced wastewater treatment and dust control measures, such as using gravel or decomposed granite around BIDA beds and implemen' ng the Fugi' ve Dust Emissions Control Plan (Appendix H).

The project is located in an unincorporated area of Kings County, just southwest of Hanford. Surrounding land uses are primarily agricultural, with a few residences located throughout.

According to the default construc' on schedule predicted by the *California Emissions Estimator Model* (CalEEMod) analysis, construc' on is expected to last approximately 1.5 years, poten' ally star' ng as early as January 2026.



CORE ENVIRONMENTAL CONSULTING Core Environmental Consulting Clovis, CA 93612 (559) 202-3941	PROJECT NAME **Sozinho Dairy #5**	DATE **11/18/25**	SCALE **NOT TO SCALE**	**FIGURE 1** **VICINITY MAP**
	PROJECT NUMBER **25014**	DRAWN BY **JM**	LAT/LONG **36.294730, -119.585371**	

HIGH SPEED RAIL

881'
TO HIGH SPEED RAIL BOUNDARY

A.P.N.
016-200-035

A.P.N.
016-200-034

A.P.N.
016-130-097

ONGOING NEGOTIATION OF ACQUISITION AREA.
AREA TO BE FINALIZED AT A LATER DATE

POST BIDA BED ORGANIC MATTER
PROCESSING AREA (150,000 FT²)

WASTEWATER RETENTION POND 2

WASTEWATER RETENTION POND 1

27'
TO PROPERTY LINE

33'
TO PROPERTY LINE

PROPOSED 14' X 20' TANK AND CONCRETE PAD

PROPOSED MECHANICAL SEPARATOR

PROPOSED EARTHEN BERMS WITH OVERFLOW

MANURE STACKING AREA

453'
TO PROPERTY LINE

14'
TO PROPERTY LINE

40' TYP.

PROPOSED PROCESS WATER
PROCESSING BEDS (TYP. 5)

20' TYP.

PROPOSED CONTROL UNIT

PROPOSED LIFT STATION

PROPOSED LIFT STATIGN

PROPOSED MECHANICAL
SEPARATOR

PROPOSED
RECEPTION
PIT

CELL C

CELL A

CELL B

336'

1032'

A.P.N.
016-200-056

20'
TYP.

POST MANURE ORGANIC MATTER
PROCESSING AREA (40,000 FT²)

MANURE PROCESSING AREA
(200,000 FT²)

PROCESSING AND PRODUCT
STORAGE AREA (30,000 FT²)

FREESTALL
BARN
(600' X 88')

PROPOSED SHADE STRUCTURE
(261' X 34')

PROPOSED SHADE STRUCTURE
(262' X 42')

FREESTALL BARN
(537' X 127')

PROPOSED
FREESTALL BARN
(550' X 150')

FREESTALL BARN
(537' X 127')

MILK
BARN

PROPOSED FEED
STORAGE AREA

EXISTING DOMESTIC WELL
(UTILIZED FOR FIRE PROTECTION)

RECYCLED ROAD BASE
DAIRY ACCESS

750W 180° FLOOD LIGHT

100'
SETBACK

RECYCLED ROAD BASE
DAIRY ACCESS

80'
RIGHT OF WAY

A.P.N.
016-200-005

750W 360° FLOOD
LIGHT (HOODED)

PROPOSED
MATERNITY BARN
(300' X 160')

20'
TO PROPERTY LINE

A.P.N.
016-130-098

52'
TO PROPERTY LINE

A.P.N.
016-200-028

750W 180° FLOOD LIGHT

110'

125'

66'

137'

27'

248'
TO PROPERTY LINE

PROPOSED SHADE STRUCTURE (800' X 25')

100'
SETBACK

167'

OPEN LOT
CORRALS

HAY BARN
(188' X 82')

HAY
BARN
(100' X 54')

OPEN LOT
CORRAL

PROPOSED SHADE
STRUCTURE
(85' X 30')

750W 180° FLOOD LIGHT

PROPOSED SHOP
(45' X 25')

PROPOSED COMMODITY
BARN (75' X 50')

EXISTING UNPERMITTED CALF
HUTCHES TO BE REMOVED

PROPOSED SHADE STRUCTURE (800' X 25')

203'

PROPOSED CALF
HUTCHES

MATERNITY

750W 360° FLOOD LIGHT (HOODED)

750W 180° FLOOD LIGHT

MILK BARN

SHOP

EQUIPMENT
SHADES

PROPOSED SHADE STRUCTURE (608' X 20')

PROPOSED SHADE STRUCTURE (608' X 15')

PROPOSED SHADE STRUCTURE (608' X 20')

PROPOSED FEED STORAGE AREA

PROPOSED SHADE STRUCTURE (600' X 20')

PROPOSED CONCRETE SILAGE
STORAGE PAD (362'X512')
AREA TO BE REGRADED

600'
TO PROPERTY LINE

PROPOSED SHADE STRUCTURE (960' X 20')

EXISTING UNPERMITTED FENCELINE
TO BE RELOCATED 19' WEST

DIRT ROAD DAIRY
ACCESS

20'
TO PROPERTY LINE

100'
SETBACK

162'
TO PROPERTY LINE

43'
TO PROPERTY LINE

A.P.N.
016-200-029

PROPOSED
OPEN LOT CORRAL

RESIDENCE

A.P.N.
016-200-016

50'
RIGHT OF WAY

750W 360° FLOOD LIGHT (HOODED)
(TYP.4)

EXISTING IRRIGATION WELL

A.P.N.
016-200-012

EXISTING DOMESTIC WELL (UTILIZED FOR FIRE PROTECTION)

RECYCLED ROAD
BASE DAIRY ACCESS

30'
TO PROPERTY LINE

RECYCLED ROAD BASE DAIRY ACCESS

EXISTING IRRIGATION WELL

NORTH

100' 0' 100'

OWNER/OPERATOR	JOE SOZINHO
MAILING ADDRESS	12252 7TH AVENUE HANFORD, CA 93230
FACILITY ADDRESS	7205 HOUSTON AVENUE HANFORD, CA 93230
A.P.N	016-200-005, 016-200-028, 016-200-029
COUNTY	KINGS COUNTY

NOTE: FULL SIZE COPY AVAILABLE UPON REQUEST
HALF SIZE COPY DOES NOT SCALE, FULL SIZE
COPY WILL SCALE PROPERLY

REVISIONS

DESCRIPTION	BY	DATE

PREPARED BY:
4CREEKS
324 S. SANTE FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3315
www.4creeks.com
DRN BY: AC
CHK BY: TE

CONSTRUCTION PLAN
SOZINHO DAIRY #5
7205 HOUSTON AVENUE
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING
PROPOSED SITE PLAN

PLOT DATE:	MARCH 13, 2025
JOB NO.:	240504
FILE NAME:	240504 - SP
SCALE:	SEE SHEET
SHEET NO.:	1 OF 1

3 Health Risk Assessment Setting

3.1 San Joaquin Valley Air Pollution Control District

The Project is located in the San Joaquin Valley Air Basin (SJVAB), which consists of eight coun' es: Fresno, Kern (western and central), Kings, Madera, Merced, San Joaquin, Stanislaus, and Tulare. Air pollu' on in the SJVAB can be a9 ributed to both human-related (anthropogenic) and natural (biogenic) ac' vi' es that produce emissions.

Area and sta' onary sources within SJVAB are under the jurisdic' on of the San Joaquin Valley Air Pollu' on Control District (SJVAPCD). An overview of important air pollutants, and SJVPACD roles in controlling them, is provided in the SJVAPCD *Guidance for Assessing and Mitigating Air Quality Impacts*[6] (GAMAQI), along with in-depth discussions on the meteorology and geography that contribute to unhealthy levels of air pollu' on. This HRA focuses on Toxic Air Contaminants (TAC).

Toxic Air Contaminants (TAC), as defined by the California Health & Safety Code (CH&SC) §44321, are listed in Appendices AI and AII in AB 2588 Air Toxic "Hot Spots" and Assessment Act's Emissions Inventory Criteria and Guideline Regula' on document. Poten' al health impacts from TACs are generally categorized into two groups: carcinogenic (cancer causing) effects and non-carcinogenic (non-cancer-causing) effects.

The non-carcinogenic effects can be further divided into long-term (chronic) health effects such as birth defects, neurological damage, or gene' c damage; and short- term (acute) effects such as eye irrita' on, respiratory irrita' on, and nausea. The California TAC list iden' fies about 700 plus pollutants. Carcinogenic and/or non-carcinogenic toxicity criteria have been established for a subset of these pollutants by OEHHA, as required by CH&SC §44360. TACs used in determining the poten' al exposure to the public should not be confused with the 189 Hazardous Air Pollutants (HAP) listed in the Clean Air Act.

SJVAPCD oversees the assessment of health risk associated with TAC emissions from new development in the SJVAB. SJVAPCD lays out a basic framework for understanding and assessing health risk, under CEQA, in the GAMAQI.

The loca' on of a development project is a major factor in determining whether the project will result in localized air quality impacts. The poten' al for adverse air quality impacts increases as the distance between the source of emissions and receptors decreases. Receptors include sensi' ve receptors and worker receptors. Sensi' ve receptors refer to those segments of the popula' on most suscep' ble to poor air quality (i.e., children, the elderly, and those with pre-exis' ng serious health problems affected by air quality). Land uses where sensi' ve individuals are most likely to spend ' me include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residen' al communi' es (these sensi' ve land uses may also be referred to as sensi' ve receptors). Worker receptors refer to employees and loca' ons where people work. Impacts on sensi' ve receptors are of par' cular concern, because they are the people most vulnerable to the effects of air pollu' on.

[6] (San Joaquin Valley Air Pollu' on Control District, 2015)

From a health risk perspec' ve there are two types of land use projects that have the poten' al to cause long-term public health risk impacts:

> **Type A Projects**: Land use projects that will place new toxic sources in the vicinity of exis' ng receptors.
>
> **Type B Projects**: Land use projects that will place new receptors in the vicinity of exis' ng toxics sources.

Projects of either type must be assessed to determine whether the resul' ng health risk to sensi' ve receptors would exceed SJVAPCD established thresholds of significance for carcinogenic, non-carcinogenic acute, and non-carcinogenic chronic risk.

The OEHHA *Risk Assessment Guidelines* are the standards for es' ma' ng health risks. OEHHA is responsible for developing and providing toxicological and medical informa' on relevant to decisions involving public health to state and local government agencies. Historically, state laws have required OEHHA to develop Risk Assessment Guidelines for es' ma' ng health risk associated with various sources of air pollu' on. Furthermore, the Children's Environmental Health Protec' on Act (SB 25, Escu' a, 1999) requires OEHHA to biennially review risk assessment methods for air toxics, and related informa' on, to ensure that they adequately protect infants and children.

The SJVAPCD risk management policy works in conjunc' on with the OEHHA *Risk Assessment Guidelines*. The SJVAPCD risk management policy further clarifies and provides guidance on the appropriate op' ons to use, such as a longer exposure period and more conserva' ve air dispersion modeling.

SJVAPCD staff members are considered leading statewide experts in the field of health risk assessment and have developed significant resources from guidance documents to database tools to assist other agencies, consultants, and regulated sources. Therefore, the SJVAPCD concludes that use of its risk management policy and the OEHHA *Risk Assessment Guidelines* is appropriate in determining significance within the environmental review process.

3.2 Diesel Particulate Matter[7]

As described in Sec' on 5 (HRA Methodology), the Project could be a substan' al source of Diesel Par' culate Ma9er (DPM) during construc' on. DPM has been iden' fied as a toxic air contaminant by ARB based on its poten' al exposures and health concerns. OEHHA evaluated over 30 human epidemiological studies on the carcinogenic effects of diesel exhaust. These studies found that long-term occupa' onal exposures to diesel exhaust were associated with a 40 percent increase, on average, in the rela' ve risk of lung cancer. These epidemiological studies strongly suggest a causal rela' onship between occupa' onal diesel exhaust exposure and lung cancer.

A number of adverse long-term noncancer effects have been associated with exposure to diesel exhaust. Occupa' onal studies have shown that there may be a greater incidence of cough, phlegm and chronic bronchi' s among those exposed to diesel exhaust than among those not exposed. Reduc' ons in pulmonary func' on have also been reported following occupa' onal exposures in chronic studies.

[7] (California Air Pollu' on Control Officers Associa' on, 2024)

Adverse short-term health effects have also been associated with exposures to diesel exhaust. Occupa' onal exposures to DPM have been associated with significant cross-shiJ decreases in lung func' on. Increased cough, labored breathing, chest ' ghtness, and wheezing have been associated with exposure to diesel exhaust in bus garage workers. A significant increase in airway resistance and increases in eye and nasal irrita' on were observed in human volunteers following one-hour chamber exposure to diesel exhaust.

3.3 Ambient Air Quality

The SJVAPCD *GAMAQI* provides a framework for evalua' ng poten' al air quality impacts under CEQA. The GAMAQI includes in-depth discussions on geography, meteorology, pollutant sources, and other important factors that affect air quality within the SJVAB. It also describes the air pollutants required to be assessed under CEQA, along with the regulatory and environmental se4 ngs for each of those pollutants. This Technical Study provides a brief overview of ambient air quality analysis (AAQA) considera' ons; the reader is encouraged to refer to the *GAMAQI* for more background informa' on.

The United States Environmental Protec' on Agency (USEPA) established Na' onal Ambient Air Quality Standards (NAAQS) for six criteria pollutants including Ozone (O_3), Par' culate Ma9 er (PM), Carbon Monoxide (CO), Oxides of Nitrogen (NOx), Sulfur Oxides (Sox), and Lead. The California Air Resources Board (CARB) established California Ambient Air Quality Standards (CAAQS) for each of the criteria pollutants, along with addi' onal pollutants including hydrogen sulfide (H_2S), Sulfates (SO_4^{2-}), Visibility Reducing Par' cles, and Vinyl Chloride.

In addi' on to evalua' ng total Project emissions of criteria pollutants, SJVAPCD requires an evalua' on of the poten' al to cause localized exceedances of NAAQS or CAAQS. When assessing the significance of project-related impacts on ambient air quality, SJVPACD has concluded that the impacts may be significant when on-site emission increases from construc' on ac' vi' es or opera' onal ac' vi' es (either from permi9 ed equipment and ac' vi' es or non-permi9 ed equipment and ac' vi' es) exceed the 100 pounds per day (lb/day) screening level of any criteria pollutant aJ er implementa' on of all enforceable mi' ga' on measures. Under such circumstances, SJVAPCD recommends that an Ambient Air Quality Analysis (AAQA) be performed. An AAQA uses air dispersion modeling to determine if emission increases from a project will cause or contribute to a viola' on of the AAQS.

4 Thresholds of Significance

4.1 HRA Thresholds

This HRA focuses on answering the following ques' on from the Air Quality sec' on of Appendix G in the *CEQA Guidelines*[8]:

3. Would the Project expose sensitive receptors to substantial pollutant concentrations?

The *CEQA Guidelines* state that, where available, the significance criteria established by the applicable air quality management district or air pollu' on control district may be relied upon to make a significance determina' on.

SJVAPCD has established the following thresholds of significance for risk exposure to TAC:

Table 1 SJVPACD Thresholds of Significance – Toxic Air Contaminants

CARCINOGENS	Maximally Exposed Individual risk equals or exceeds 20 in one million
NON CARCINOGENS	**Acute**: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
	Chronic: Hazard Index equals or exceeds 1 for the Maximally Exposed Individual
Source: (San Joaquin Valley Air Pollu' on Control District, 2015)	

Therefore, if the calculated risk exposure from Project TAC emissions is below the SJVAPCD thresholds of significance, it can be concluded that the Project would not expose sensi' ve receptors to substan' al pollutant concentra' ons and this impact would be considered less than significant under CEQA.

4.2 Ambient Air Quality Thresholds

The thresholds of significance for ambient air quality are based on the NAAQS and CAAQS. A project would be considered to have a significant impact if its emissions are predicted to cause or contribute to a viola' on of an ambient air quality standard by crea' ng a localized exceedance of any of the CAAQS or any of the NAAQS and if available the associated Significant Impact Level (SIL).

The SJVAPCD Rule 9510 (Indirect Source Review) applicability thresholds, which are far more conserva' ve than the criteria pollutant significance thresholds or the AAQA applicability threshold, can be used to screen out development projects subject to CEQA. Projects below ISR applicability thresholds (i.e., “small projects”) would be expected to not violate any air quality standards or contribute substan' ally to an exis' ng or projected air quality viola' on and will not exceed the thresholds of significance for ambient air quality. In this case, SJVAPCD concludes no emission calcula' on is needed and no ambient air quality analysis is required. For projects equal to or above the applicability

[8] (Associa' on of Environmental Professionals, 2025)

thresholds, the District recommends that emissions from the project be quan' fied to determine if an AAQA is needed.

If maximum daily onsite emissions of all criteria pollutants, during construc' on and opera' on, are below 100 pounds per day, then the Project would not cause a localized exceedance of NAAQS or CAAQS, no further AAQA is required, and the associated impact would be less than significant.

5 Methodology

5.1 HRA Methodology

The impacts of toxic air contaminant (TAC) emissions from the Project were assessed for both construc' on and opera' on.

The primary TAC emissions resul' ng from Project construc' on would include diesel par' culate ma9er (DPM), exhausted during the opera' on of on- and-off road diesel-fueled vehicles and equipment.

DPM is the par' culate component of diesel exhaust and has been iden' fied as a TAC by the California Air Resources Board (CARB) based on its poten' al exposures and health concerns. Epidemiological studies strongly suggest a rela' onship between occupa' onal diesel exhaust exposure and lung cancer. A number of adverse acute and chronic effects have also been associated with exposure to diesel exhaust.[9]

Project opera' on would not introduce any new substan' al sources of TAC. The Project would not increase the herd size or opera' onal capacity of the exis' ng facility, or increase the amount of waste to be treated, and ac' vity increases would be limited to negligible increases in service and delivery vehicles and onsite equipment.

Mobile DPM emissions would be minimal (see Poten' al Impacts sec' on for a more detailed assessment) and the impacts to sensi' ve receptors would only occur from the frac' on of TAC emissions that are released within a short distance of the receptor loca' ons, rather than the total emissions that are es' mated for the en' re travel distance of modeled truck trips. For this reason, the SJVAPCD specifies that an HRA should evaluate mobile emissions onsite and within ¼ mile of the project. Es' mated Project emissions are below the computa' onal limit for the model used (CalEEMod; see below) and well below the level required to result in health risks that approach the SJVAPCD thresholds of significance.

The proposed facility enhancements have been constructed and operated at similar facili' es including mul' ple that have been evaluated for poten' al air quality impacts, permi9ed by SJVAPCD, and successfully operated in compliance. Extensive evalua' ons have been completed to assess the performance of the treatment systems, including technical evalua' ons and emissions tes' ng for criteria pollutants, TAC, and greenhouse gases. Numerous studies, and verified field data collected according to well established procedures, have concluded that the treatment system reduces nearly all pollutants, including Vola' le Organic Compounds (VOC) and other pollutants of concern for compos' ng and waste treatment opera' ons. The SJVAPCD permi4 ng process will further ensure that all pollutant sources and emissions are accounted for and monitored throughout opera' on.

Because there are no other substan' al sources of TAC expected, during construc' on or opera' on, modeling and calcula' ons were performed to quan' fy the es' mated health risk to nearby receptors due to construc' on DPM:

[9] (California Air Resources Board, 2024)

1. *Estimated DPM Emissions*. Project air pollutant emissions were es' mated using the latest version of the *California Emissions Estimator Model*[10] (CalEEMod). The CalEEMod analysis was performed by 4Creeks, Inc., and is a9ached as Appendix A. The Air Quality sec' on of the Ini' al Study includes a detailed descrip' on of the reasoning, assump' ons, and inputs used. The assessment was reviewed as part of this HRA and determined to be reasonable and accurate, based on the project informa' on available.

   SJVAPCD considers exhaust par' culate ma9er 10 microns and smaller (PM_{10} exhaust) to be a reasonable surrogate for DPM, and the maximum (worst year) annual construc' on emissions were used for subsequent modeling and calcula' on (described below).

2. *Modeled Air Dispersion*. The United States Environmental Protec' on Agency's (U.S. EPA) *American Meteorological Society/EPA Regulatory Model* (AERMOD) air dispersion model was used to model the annual downwind air concentra' on at nearby receptors, based on a normalized emission rate of one gram per second. Meteorological data were obtained from SJVAPCD (Hanford met site), along with required modeling parameters. Terrain was incorporated using the built-in WebGIS tool. Sensi' ve receptors include nearby residences to the north and east with the closest being approximately 250 feet (76 meters) from the Project site perimeter. A total of 17 receptors were selected for a representa' ve analysis, within a modeling domain radius of 1 kilometer.

3. *Calculated Risk*. Normalized downwind air concentra' ons for each receptor (modeled in the step above) were imported into the CARB Hotspots Analysis and Repor' ng Program (HARP2) *Air Dispersion Modeling and Risk Tool*[11] (ADMRT) and combined with the toxic emissions data (DPM emissions from the CalEEMod step described above) to es' mate the ground level concentra' ons of DPM at each receptor. Cancer risk and chronic hazard index (HI) were calculated in ADMRT using SJVAPCD-required exposure parameters and Project informa' on. OEHHA has not established a Reference Exposure Level (REL) for 8-hour chronic, or acute health risk from DPM. Thus, the 8-hour chronic and acute HI are not calculated for HRA where the only substan' al TAC is DPM, except in unusual situa' ons such as when a sensi' ve receptor is located directly above the emission release point (e.g., on a hillside or in a mul' story apartment building).[12]

SJVAPCD recommenda' ons were followed throughout both the AERMOD and HARP2 ADMRT analyses; results are a9ached as Appendix B, along with a map of receptors. Modeling files will be made available to reviewing agencies upon request.

5.2 AAQA Methodology

According to the SJVAPCD *GAMAQI*, the first step to determining whether a full Ambient Air Quality Analysis (AAQA) is required to evaluate the poten' al for the Project to cause localized exceedances of NAAQS or CAAQS is to assess the applicability of in SJVAPCD Rule 9510 (Indirect Source Review). The Project is specifically exempt from ISR (*Section 4.4.3 A development project on a facility whose primary functions are subject to Rule 2201 New and Modified Stationary Source Review Rule or Rule 2010 Permits Required*), but the reason ISR applicability is used for an ini' al screening is because the size thresholds defined in Rule 9510 are a health-conserva' ve threshold below which projects would be

[10] (California Air Pollu' on Control Officers Associa' on, 2022)
[11] (California Air Resources Board, 2022a)
[12] (California Air Resources Board, 2024)

confidently expected to not exceed significance thresholds. The exemp' on for the Project is not related to size but instead because the Project will be required to complete permi4 ng with SJVAPCD, which includes a comprehensive analysis of project emissions and applica' on of air pollu' on control measures.

Therefore, the second step in the AAQA process is to calculate construc' on and opera' on emissions (see HRA Methodology above) and compare the maximum daily emissions of each criteria pollutant to the quan' ta' ve screening threshold of 100 pounds per day. None of the Project emissions exceed the 100-pound-per day screening threshold (see Poten' al Impacts). Therefore, no further AAQA was required.

Emissions calcula' ons are a9 ached as Appendix A and a summary of results is presented in the following sec' on.

The AAQA screening focused on the federal criteria pollutants. The addi' onal California criteria pollutants – hydrogen sulfide (H_2S), Sulfates (SO_4^{2-}), Visibility Reducing Par' cles, and Vinyl Chloride – were not included because the Project would not include any substan' al sources during construc' on or opera' on.

6 Potential Impacts

6.1 HRA Results

Construction Impacts

The CalEEMod results (Appendix A) show that *unmitigated* maximum annual construc' on emissions of PM_{10} exhaust would be 0.07 tons per year (tpy), or approximately 140 pounds per year (lb/yr). The exposure period for sensi' ve receptors would be the construc' on dura' on of approximately 1.5 years, which is rounded up to 2 years in the HARP2 ADMRT.

Results of the construc' on HRA are a9ached as Appendix B and summarized and compared to SJVAPCD thresholds of significance in the table below. The highest risk exposure occurred at receptor 3, just over 100 meters south of the Project site boundary.

Table 2 HRA Results Compared to SJVAPCD Thresholds of Significance

RISK	CARCINOGEN (risk in one million)	CHRONIC HAZARD INDEX
Construc' on	11.3	0.007
Thresholds of Significance	20	1
Exceeds Threshold?	***NO***	***NO***
Hazard indices are for Maximally Exposed Individuals. No HI was calculated for 8-hour Chronic or Acute risk because OEHHA has not established REL. (California Air Resources Board, 2024)		

As shown in the Table above, the incremental health risk to sensi' ve receptors from Project construc' on emissions would not exceed the SJVAPCD Thresholds of Significance. Therefore, the Project would not expose sensi' ve receptors to substan' al pollutant concentra' ons. This impact would be considered ***less than significant***.

Operation Impacts

As discussed in the HRA Methodology sec' on, Project opera' on would not introduce any new substan' al sources of TAC. The Project would not increase the herd size or opera' onal capacity of the exis' ng facility, or increase the amount of waste to be treated, and ac' vity increases would be limited to negligible increases in service and delivery vehicles and onsite equipment.

Mobile DPM emissions would be minimal (see Poten' al Impacts sec' on for a more detailed assessment) and the impacts to sensi' ve receptors would only occur from the frac' on of TAC emissions that are released within a short distance of the receptor loca' ons, rather than the total emissions that are es' mated for the en' re travel distance of modeled truck trips. For this reason, the SJVAPCD specifies that an HRA should evaluate mobile emissions onsite and within ¼ mile of the project. Es' mated Project emissions are below the computa' onal limit for the model used (CalEEMod; see Methodology sec' on) and well below the level required to result in health risks that could approach the SJVAPCD thresholds of significance.

The proposed facility enhancements have been constructed and operated at similar facili' es including mul' ple that have been evaluated for poten' al air quality impacts, permi9 ed by SJVAPCD, and successfully operated in compliance. Extensive evalua' ons have been completed to assess the performance of the treatment systems, including technical evalua' ons and emissions tes' ng for criteria pollutants, TAC, and greenhouse gases. Numerous studies, and verified field data collected according to well established procedures, have concluded that the treatment system reduces nearly all pollutants, including Vola' le Organic Compounds (VOC) and other pollutants of concern for compos' ng and waste treatment opera' ons. The SJVAPCD permi4 ng process will further ensure that all pollutant sources and emissions are accounted for and monitored throughout opera' on.

Therefore, Project opera' on would not expose sensi' ve receptors to substan' al pollutant concentra' ons. ***This impact would be less than significant.***

6.2 AAQA Results

The CalEEMod results are a9 ached as Appendix A and summarized in the table below, along with comparison to the SJVAPCD threshold of significance for AAQA screening. As shown in the table, none of the maximum daily criteria pollutant emissions from the Project would exceed the 100-pound-per-day screening threshold for construc' on or opera' on. Therefore, no further AAQA is required and the Project would not expose sensi' ve receptors to substan' al pollutant concentra' ons by resul' ng in a localized exceedance of NAAQS or CAAQS. The associated impact would be ***less than significant***. No mi' ga' on is required outside of compliance with exis' ng regula' ons.

Table 3 Maximum Daily Criteria Pollutant Emissions Compared to AAQA Screening Threshold (lb/day)

CONSTRUCTION	CO	NOx	ROG	SOx	PM_{10}	$PM_{2.5}$
Construc' on Emissions	29.4	29.2	47.7	0.06	21.0	11.3
Exceeds 100 lb/day?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**
OPERATION	**CO**	**NOx**	**ROG**	**SOx**	**PM_{10}**	**$PM_{2.5}$**
Opera' on Emissions	18.4	2.41	6.33	0.0.3	2.45	0.69
Exceeds 100 lb/day?	**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

CO = carbon monoxide
NOx = oxides of nitrogen
ROG = reac' ve organic gases
SOx = oxides of sulfur
PM10 = par' culate ma9 er with an aerodynamic diameter less than 10 microns
PM2.5 = par' culate ma9 er with an aerodynamic diameter less than 2.5 microns

6.3 Mitigation

Project impacts would be *less than significant.* Therefore, there is no mi' ga' on required outside of compliance with exis' ng regula' ons.

The Air Quality sec' on of the Ini' al Study stated that the Project will implement Tier 4 Final Engine Controls during construc' on as a mi' ga' on measure. This measure would directly reduce construc' on health risk to sensi' ve receptors by 75-90%, further ensuring impacts would remain less than significant. Because the HRA did not iden' fy any poten' ally significant impacts, this mi' ga' on measure is not directly incorporated or reiterated as a commitment within this Technical Study.

Addi' onally, the proposed enhancements would reduce emissions during opera' on, and the SJVAPCD permi4 ng process will require all feasible control measures and best opera' ng procedures be strictly adhered to and monitored, with regular repor' ng and sampling to verify compliance.

No mitigation is required for the Project impacts to remain less than significant, outside of compliance with existing regulations.

7 References

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Appendix A. CalEEMod Results

Prepared by 4Creeks, Inc, July 2025

Sozinho Dairy #5 Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Sozinho Dairy #5
Construction Start Date	1/1/2026
Operational Year	2027
Lead Agency	Kings County
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.40
Precipitation (days)	22.6
Location	36.29764652234978, -119.58534482273285
County	Kings
City	Unincorporated
Air District	San Joaquin Valley APCD
Air Basin	San Joaquin Valley
TAZ	2608
EDFZ	9
Electric Utility	Eastside Power Authority
Gas Utility	Southern California Gas
App Version	2022.1.1.29

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	4.81	Acre	4.81	0.00	0.00	0.00	—	Water Treatment System Group

Other Non-Asphalt Surfaces	6.50	Acre	6.50	0.00	0.00	—	—	Feed Storage Areas
Unrefrigerated Warehouse-No Rail	167	1000sqft	3.83	166,650	0.00	—	—	Animal Housing and Storage Buildings
Other Non-Asphalt Surfaces	3.00	Acre	3.00	0.00	0.00	—	—	Shade Structures
General Light Industry	1.13	1000sqft	0.03	1,125	0.00	—	—	Shop

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	47.8	47.7	10.6	16.5	0.03	0.38	0.59	0.97	0.35	0.15	0.50	—	3,304	3,304	0.13	0.09	2.72	3,336
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.81	3.21	29.2	29.4	0.06	1.24	19.8	21.0	1.14	10.1	11.3	—	6,747	6,747	0.27	0.09	0.07	6,772
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.10	3.02	9.97	12.8	0.02	0.38	1.63	2.01	0.35	0.66	1.01	—	2,670	2,670	0.10	0.06	0.67	2,689
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.57	0.55	1.82	2.34	< 0.005	0.07	0.30	0.37	0.06	0.12	0.18	—	442	442	0.02	0.01	0.11	445

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.63	1.39	10.6	16.5	0.03	0.38	0.59	0.97	0.35	0.15	0.50	—	3,304	3,304	0.13	0.09	2.72	3,336
2027	47.8	47.7	10.1	16.2	0.03	0.34	0.59	0.93	0.31	0.15	0.46	—	3,285	3,285	0.11	0.09	2.48	3,316
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	3.81	3.21	29.2	29.4	0.06	1.24	19.8	21.0	1.14	10.1	11.3	—	6,747	6,747	0.27	0.09	0.07	6,772
2027	1.53	1.30	10.2	15.5	0.03	0.34	0.59	0.93	0.31	0.15	0.46	—	3,220	3,220	0.12	0.09	0.06	3,249
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	1.43	1.21	9.97	12.8	0.02	0.38	1.63	2.01	0.35	0.66	1.01	—	2,670	2,670	0.10	0.06	0.67	2,689
2027	3.10	3.02	3.27	5.03	0.01	0.11	0.17	0.29	0.10	0.04	0.15	—	1,008	1,008	0.04	0.03	0.32	1,017
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2026	0.26	0.22	1.82	2.34	< 0.005	0.07	0.30	0.37	0.06	0.12	0.18	—	442	442	0.02	0.01	0.11	445
2027	0.57	0.55	0.60	0.92	< 0.005	0.02	0.03	0.05	0.02	0.01	0.03	—	167	167	0.01	< 0.005	0.05	168

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	6.57	6.33	2.27	18.4	0.03	0.10	2.36	2.45	0.09	0.60	0.69	160	5,288	5,448	16.4	0.34	9.53	5,970
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Unmit.	5.15	5.01	2.41	9.38	0.03	0.08	2.36	2.44	0.08	0.60	0.68	160	5,014	5,173	16.4	0.35	0.53	5,689
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.80	5.61	2.34	13.1	0.03	0.09	2.32	2.41	0.09	0.59	0.67	160	5,093	5,253	16.4	0.35	4.27	5,771
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.06	1.02	0.43	2.39	0.01	0.02	0.42	0.44	0.02	0.11	0.12	26.4	843	870	2.72	0.06	0.71	955

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.29	1.19	1.45	10.5	0.03	0.03	2.36	2.38	0.02	0.60	0.62	—	3,045	3,045	0.09	0.15	9.23	3,101
Area	5.20	5.10	0.06	7.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74.3	190	264	7.64	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85.2	0.00	85.2	8.51	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	6.57	6.33	2.27	18.4	0.03	0.10	2.36	2.45	0.09	0.60	0.69	160	5,288	5,448	16.4	0.34	9.53	5,970
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.17	1.07	1.65	8.74	0.03	0.03	2.36	2.38	0.02	0.60	0.62	—	2,800	2,800	0.10	0.16	0.24	2,850
Area	3.90	3.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74.3	190	264	7.64	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85.2	0.00	85.2	8.51	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

Total	5.15	5.01	2.41	9.38	0.03	0.08	2.36	2.44	0.08	0.60	0.68	160	5,014	5,173	16.4	0.35	0.53	5,689
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.18	1.08	1.56	8.87	0.03	0.03	2.32	2.35	0.02	0.59	0.61	—	2,865	2,865	0.10	0.15	3.98	2,917
Area	4.54	4.49	0.03	3.60	< 0.005	0.01	—	0.01	< 0.005	—	< 0.005	—	14.8	14.8	< 0.005	< 0.005	—	14.9
Energy	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	2,024	2,024	0.16	0.01	—	2,031
Water	—	—	—	—	—	—	—	—	—	—	—	74.3	190	264	7.64	0.18	—	510
Waste	—	—	—	—	—	—	—	—	—	—	—	85.2	0.00	85.2	8.51	0.00	—	298
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	5.80	5.61	2.34	13.1	0.03	0.09	2.32	2.41	0.09	0.59	0.67	160	5,093	5,253	16.4	0.35	4.27	5,771
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.22	0.20	0.28	1.62	0.01	< 0.005	0.42	0.43	< 0.005	0.11	0.11	—	474	474	0.02	0.03	0.66	483
Area	0.83	0.82	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.45	2.45	< 0.005	< 0.005	—	2.46
Energy	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	335	335	0.03	< 0.005	—	336
Water	—	—	—	—	—	—	—	—	—	—	—	12.3	31.4	43.7	1.26	0.03	—	84.4
Waste	—	—	—	—	—	—	—	—	—	—	—	14.1	0.00	14.1	1.41	0.00	—	49.3
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	1.06	1.02	0.43	2.39	0.01	0.02	0.42	0.44	0.02	0.11	0.12	26.4	843	870	2.72	0.06	0.71	955

3. Construction Emissions Details

3.1. Demolition (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	2.72	2.29	20.7	19.0	0.03	0.84	—	0.84	0.78	—	0.78	—	3,427	3,427	0.14	0.03	—	3,438
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.15	0.13	1.13	1.04	< 0.005	0.05	—	0.05	0.04	—	0.04	—	188	188	0.01	< 0.005	—	188
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.03	0.02	0.21	0.19	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Demolition	—	—	—	—	—	—	0.00	0.00	—	0.00	0.00	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	0.06	0.06	0.05	0.53	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	111	111	< 0.005	< 0.005	0.01	113
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.33	6.33	< 0.005	< 0.005	0.01	6.43
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.05	1.05	< 0.005	< 0.005	< 0.005	1.06
Vendor	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	0.00
Hauling	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	0.00

3.3. Site Preparation (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.74	3.14	29.2	28.8	0.05	1.24	—	1.24	1.14	—	1.14	—	5,298	5,298	0.21	0.04	—	5,316
Dust From Material Movement	—	—	—	—	—	—	19.7	19.7	—	10.1	10.1	—	—	—	—	—	—	—

Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.10	0.09	0.80	0.79	< 0.005	0.03	—	0.03	0.03	—	0.03	—	145	145	0.01	< 0.005	—	146
Dust From Material Movement	—	—	—	—	—	—	0.54	0.54	—	0.28	0.28	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.02	0.02	0.15	0.14	< 0.005	0.01	—	0.01	0.01	—	0.01	—	24.0	24.0	< 0.005	< 0.005	—	24.1
Dust From Material Movement	—	—	—	—	—	—	0.10	0.10	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.07	0.06	0.62	0.00	0.00	0.13	0.13	0.00	0.03	0.03	—	130	130	< 0.005	0.01	0.01	132
Vendor	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	0.00
Hauling	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	0.00

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.02	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	3.69	3.69	< 0.005	< 0.005	0.01	3.75
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.61	0.61	< 0.005	< 0.005	< 0.005	0.62
Vendor	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	0.00
Hauling	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	0.00

3.5. Grading (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	3.62	3.04	27.2	27.6	0.06	1.12	—	1.12	1.03	—	1.03	—	6,599	6,599	0.27	0.05	—	6,621
Dust From Material Movement	—	—	—	—	—	—	9.20	9.20	—	3.65	3.65	—	—	—	—	—	—	—
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.30	0.25	2.24	2.27	0.01	0.09	—	0.09	0.08	—	0.08	—	542	542	0.02	< 0.005	—	544
Dust From Material Movement	—	—	—	—	—	—	0.76	0.76	—	0.30	0.30	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.05	0.41	0.41	< 0.005	0.02	—	0.02	0.02	—	0.02	—	89.8	89.8	< 0.005	< 0.005	—	90.1
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.05	0.05	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.07	0.71	0.00	0.00	0.15	0.15	0.00	0.04	0.04	—	149	149	< 0.005	0.01	0.01	151
Vendor	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	0.00
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.06	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	12.7	12.7	< 0.005	< 0.005	0.02	12.9
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	2.10	2.10	< 0.005	< 0.005	< 0.005	2.13
Vendor	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	0.00
Hauling	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	0.00

3.7. Building Construction (2026) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.28	1.07	9.85	13.0	0.02	0.38	—	0.38	0.35	—	0.35	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.70	0.58	5.36	7.05	0.01	0.21	—	0.21	0.19	—	0.19	—	1,304	1,304	0.05	0.01	—	1,309
Onsite truck	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	0.00

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.13	0.11	0.98	1.29	< 0.005	0.04	—	0.04	0.03	—	0.03	—	216	216	0.01	< 0.005	—	217
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.32	0.30	0.20	3.29	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	591	591	0.03	0.02	1.94	600
Vendor	0.03	0.02	0.54	0.26	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	316	316	0.01	0.05	0.79	330
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.29	0.26	0.26	2.50	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	524	524	0.02	0.02	0.05	531
Vendor	0.02	0.02	0.57	0.27	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	317	317	0.01	0.05	0.02	330
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.16	0.15	0.13	1.42	0.00	0.00	0.27	0.27	0.00	0.07	0.07	—	295	295	0.01	0.01	0.45	300
Vendor	0.01	0.01	0.30	0.15	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	172	172	< 0.005	0.02	0.18	180
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.03	0.03	0.02	0.26	0.00	0.00	0.05	0.05	0.00	0.01	0.01	—	48.9	48.9	< 0.005	< 0.005	0.08	49.6
Vendor	< 0.005	< 0.005	0.06	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	28.5	28.5	< 0.005	< 0.005	0.03	29.8
Hauling	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	0.00

3.9. Building Construction (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	1.23	1.03	9.39	12.9	0.02	0.34	—	0.34	0.31	—	0.31	—	2,397	2,397	0.10	0.02	—	2,405
Onsite truck	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.34	0.29	2.63	3.62	0.01	0.09	—	0.09	0.09	—	0.09	—	671	671	0.03	0.01	—	673
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.06	0.05	0.48	0.66	< 0.005	0.02	—	0.02	0.02	—	0.02	—	111	111	< 0.005	< 0.005	—	111
Onsite truck	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	0.00

Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.31	0.28	0.18	3.03	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	579	579	0.01	0.02	1.74	587
Vendor	0.03	0.02	0.52	0.25	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	309	309	0.01	0.05	0.73	324
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.27	0.25	0.24	2.31	0.00	0.00	0.51	0.51	0.00	0.12	0.12	—	513	513	0.02	0.02	0.05	520
Vendor	0.02	0.02	0.55	0.27	< 0.005	< 0.005	0.08	0.08	< 0.005	0.02	0.03	—	310	310	0.01	0.05	0.02	324
Hauling	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	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.07	0.06	0.68	0.00	0.00	0.14	0.14	0.00	0.03	0.03	—	149	149	< 0.005	0.01	0.21	151
Vendor	0.01	0.01	0.15	0.07	< 0.005	< 0.005	0.02	0.02	< 0.005	0.01	0.01	—	86.7	86.7	< 0.005	0.01	0.09	90.5
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	0.01	0.12	0.00	0.00	0.03	0.03	0.00	0.01	0.01	—	24.6	24.6	< 0.005	< 0.005	0.03	25.0
Vendor	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	14.3	14.3	< 0.005	< 0.005	0.01	15.0
Hauling	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	0.00

3.11. Paving (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.88	0.74	6.94	9.95	0.01	0.30	—	0.30	0.27	—	0.27	—	1,511	1,511	0.06	0.01	—	1,516
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.05	0.04	0.38	0.55	< 0.005	0.02	—	0.02	0.02	—	0.02	—	82.8	82.8	< 0.005	< 0.005	—	83.1
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.01	0.01	0.07	0.10	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	13.7	13.7	< 0.005	< 0.005	—	13.8
Paving	0.00	0.00	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.07	0.06	0.04	0.65	0.00	0.00	0.11	0.11	0.00	0.03	0.03	—	123	123	< 0.005	< 0.005	0.37	125
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	6.20	6.20	< 0.005	< 0.005	0.01	6.29
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	1.03	1.03	< 0.005	< 0.005	< 0.005	1.04
Vendor	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	0.00
Hauling	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	0.00

3.13. Architectural Coating (2027) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.14	0.11	0.83	1.13	< 0.005	0.02	—	0.02	0.02	—	0.02	—	134	134	0.01	< 0.005	—	134
Architectural Coatings	47.6	47.6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road	0.01	0.01	0.05	0.06	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	7.32	7.32	< 0.005	< 0.005	—	7.34
Architectural Coatings	2.61	2.61	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	1.21	1.21	< 0.005	< 0.005	—	1.22
Architectural Coatings	0.48	0.48	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Onsite truck	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	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.06	0.06	0.04	0.61	0.00	0.00	0.10	0.10	0.00	0.02	0.02	—	116	116	< 0.005	< 0.005	0.35	117
Vendor	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	0.00
Hauling	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	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.03	0.00	0.00	0.01	0.01	0.00	< 0.005	< 0.005	—	5.83	5.83	< 0.005	< 0.005	0.01	5.91
Vendor	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	0.00
Hauling	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	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	< 0.005	0.00	0.00	< 0.005	< 0.005	0.00	< 0.005	< 0.005	—	0.97	0.97	< 0.005	< 0.005	< 0.005	0.98
Vendor	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	0.00
Hauling	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	0.00

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Unrefrigerated Warehouse-No Rail	1.27	1.17	1.43	10.3	0.03	0.02	2.31	2.34	0.02	0.59	0.61	—	2,987	2,987	0.09	0.15	9.06	3,042
General Light Industry	0.02	0.02	0.03	0.20	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	57.9	57.9	< 0.005	< 0.005	0.18	59.0
Total	1.29	1.19	1.45	10.5	0.03	0.03	2.36	2.38	0.02	0.60	0.62	—	3,045	3,045	0.09	0.15	9.23	3,101
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00

Unrefrigerated	1.15	1.05	1.62	8.57	0.03	0.02	2.31	2.34	0.02	0.59	0.61	—	2,747	2,747	0.10	0.15	0.23	2,796
General Light Industry	0.02	0.02	0.03	0.17	< 0.005	< 0.005	0.04	0.05	< 0.005	0.01	0.01	—	53.3	53.3	< 0.005	< 0.005	< 0.005	54.2
Total	1.17	1.07	1.65	8.74	0.03	0.03	2.36	2.38	0.02	0.60	0.62	—	2,800	2,800	0.10	0.16	0.24	2,850
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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	0.00
Unrefrigerated Warehouse-No Rail	0.21	0.19	0.28	1.59	0.01	< 0.005	0.42	0.42	< 0.005	0.11	0.11	—	466	466	0.02	0.02	0.65	475
General Light Industry	< 0.005	< 0.005	< 0.005	0.03	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	8.21	8.21	< 0.005	< 0.005	0.01	8.36
Total	0.22	0.20	0.28	1.62	0.01	< 0.005	0.42	0.43	< 0.005	0.11	0.11	—	474	474	0.02	0.03	0.66	483

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Unrefrigerated Warehouse-No	—	—	—	—	—	—	—	—	—	—	—	—	1,106	1,106	0.08	0.01	—	1,111
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	14.2	14.2	< 0.005	< 0.005	—	14.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,120	1,120	0.08	0.01	—	1,125
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	1,106	1,106	0.08	0.01	—	1,111
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	14.2	14.2	< 0.005	< 0.005	—	14.3
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,120	1,120	0.08	0.01	—	1,125
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	—	183	183	0.01	< 0.005	—	184
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	2.36	2.36	< 0.005	< 0.005	—	2.37
Total	—	—	—	—	—	—	—	—	—	—	—	—	185	185	0.01	< 0.005	—	186

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.08	0.04	0.74	0.62	< 0.005	0.06	—	0.06	0.06	—	0.06	—	887	887	0.08	< 0.005	—	890
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.2	16.2	< 0.005	< 0.005	—	16.3
Total	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	904	904	0.08	< 0.005	—	906
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.08	0.04	0.74	0.62	< 0.005	0.06	—	0.06	0.06	—	0.06	—	887	887	0.08	< 0.005	—	890
General Light Industry	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	16.2	16.2	< 0.005	< 0.005	—	16.3
Total	0.08	0.04	0.76	0.64	< 0.005	0.06	—	0.06	0.06	—	0.06	—	904	904	0.08	< 0.005	—	906
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	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
Unrefrigerated Warehouse-No Rail	0.01	0.01	0.14	0.11	< 0.005	0.01	—	0.01	0.01	—	0.01	—	147	147	0.01	< 0.005	—	147
General Light Industry	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.68	2.68	< 0.005	< 0.005	—	2.69
Total	0.02	0.01	0.14	0.12	< 0.005	0.01	—	0.01	0.01	—	0.01	—	150	150	0.01	< 0.005	—	150

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.64	3.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.30	1.20	0.06	7.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1
Total	5.20	5.10	0.06	7.30	< 0.005	0.01	—	0.01	0.01	—	0.01	—	30.0	30.0	< 0.005	< 0.005	—	30.1

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	3.64	3.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.26	0.26	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	3.90	3.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	0.66	0.66	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	0.05	0.05	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.12	0.11	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.45	2.45	< 0.005	< 0.005	—	2.46
Total	0.83	0.82	0.01	0.66	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	—	2.45	2.45	< 0.005	< 0.005	—	2.46

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	73.8	188	262	7.59	0.18	—	506
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.50	1.27	1.77	0.05	< 0.005	—	3.42
Total	—	—	—	—	—	—	—	—	—	—	—	74.3	190	264	7.64	0.18	—	510
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	73.8	188	262	7.59	0.18	—	506
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.50	1.27	1.77	0.05	< 0.005	—	3.42
Total	—	—	—	—	—	—	—	—	—	—	—	74.3	190	264	7.64	0.18	—	510
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	12.2	31.2	43.4	1.26	0.03	—	83.8

General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.08	0.21	0.29	0.01	< 0.005	—	0.57
Total	—	—	—	—	—	—	—	—	—	—	—	12.3	31.4	43.7	1.26	0.03	—	84.4

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	84.4	0.00	84.4	8.44	0.00	—	295
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.75	0.00	0.75	0.08	0.00	—	2.63
Total	—	—	—	—	—	—	—	—	—	—	—	85.2	0.00	85.2	8.51	0.00	—	298
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	84.4	0.00	84.4	8.44	0.00	—	295
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.75	0.00	0.75	0.08	0.00	—	2.63
Total	—	—	—	—	—	—	—	—	—	—	—	85.2	0.00	85.2	8.51	0.00	—	298
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Unrefrigerated Warehouse-No Rail	—	—	—	—	—	—	—	—	—	—	—	14.0	0.00	14.0	1.40	0.00	—	48.9
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.44
Total	—	—	—	—	—	—	—	—	—	—	—	14.1	0.00	14.1	1.41	0.00	—	49.3

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.29	0.29
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
General Light Industry	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.05	0.05

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	1/1/2026	1/29/2026	5.00	20.0	—
Site Preparation	Site Preparation	1/30/2026	2/13/2026	5.00	10.0	—
Grading	Grading	2/14/2026	3/28/2026	5.00	30.0	—
Building Construction	Building Construction	3/29/2026	5/23/2027	5.00	300	—
Paving	Paving	5/24/2027	6/21/2027	5.00	20.0	—
Architectural Coating	Architectural Coating	6/22/2027	7/20/2027	5.00	20.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.00	8.00	33.0	0.73
Demolition	Excavators	Diesel	Average	3.00	8.00	36.0	0.38
Demolition	Rubber Tired Dozers	Diesel	Average	2.00	8.00	367	0.40

Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Grading	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Grading	Graders	Diesel	Average	1.00	8.00	148	0.41
Grading	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40
Grading	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Grading	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Building Construction	Cranes	Diesel	Average	1.00	7.00	367	0.29
Building Construction	Forklifts	Diesel	Average	3.00	8.00	82.0	0.20
Building Construction	Generator Sets	Diesel	Average	1.00	8.00	14.0	0.74
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00	7.00	84.0	0.37
Building Construction	Welders	Diesel	Average	1.00	8.00	46.0	0.45
Paving	Pavers	Diesel	Average	2.00	8.00	81.0	0.42
Paving	Paving Equipment	Diesel	Average	2.00	8.00	89.0	0.36
Paving	Rollers	Diesel	Average	2.00	8.00	36.0	0.38
Architectural Coating	Air Compressors	Diesel	Average	1.00	6.00	37.0	0.48

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	—	—	—	—
Demolition	Worker	15.0	10.6	LDA,LDT1,LDT2
Demolition	Vendor	—	3.50	HHDT,MHDT
Demolition	Hauling	0.00	20.0	HHDT
Demolition	Onsite truck	—	—	HHDT

Site Preparation	—	—	—	—
Site Preparation	Worker	17.5	10.6	LDA,LDT1,LDT2
Site Preparation	Vendor	—	3.50	HHDT,MHDT
Site Preparation	Hauling	0.00	20.0	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	—	—	—	—
Grading	Worker	20.0	10.6	LDA,LDT1,LDT2
Grading	Vendor	—	3.50	HHDT,MHDT
Grading	Hauling	0.00	20.0	HHDT
Grading	Onsite truck	—	—	HHDT
Building Construction	—	—	—	—
Building Construction	Worker	70.5	10.6	LDA,LDT1,LDT2
Building Construction	Vendor	27.5	3.50	HHDT,MHDT
Building Construction	Hauling	0.00	20.0	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	—	—	—	—
Paving	Worker	15.0	10.6	LDA,LDT1,LDT2
Paving	Vendor	—	3.50	HHDT,MHDT
Paving	Hauling	0.00	20.0	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	—	—	—	—
Architectural Coating	Worker	14.1	10.6	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	3.50	HHDT,MHDT
Architectural Coating	Hauling	0.00	20.0	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	0.00	0.00	251,663	83,888	37,401

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (cy)	Material Exported (cy)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Demolition	0.00	0.00	0.00	—	—
Site Preparation	—	—	15.0	0.00	—
Grading	—	—	90.0	0.00	—
Paving	0.00	0.00	0.00	0.00	14.3

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	4.81	0%
Other Non-Asphalt Surfaces	6.50	0%
Unrefrigerated Warehouse-No Rail	0.00	0%
Other Non-Asphalt Surfaces	3.00	0%
General Light Industry	0.00	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2026	0.00	453	0.03	< 0.005
2027	0.00	453	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Unrefrigerated Warehouse-No Rail	290	290	290	105,839	3,273	3,273	3,273	1,194,656
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
General Light Industry	5.58	2.24	5.63	1,865	63.0	25.3	63.5	21,049

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

0	0.00	251,663	83,888	37,401

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
Unrefrigerated Warehouse-No Rail	890,595	453	0.0330	0.0040	2,769,153
Other Non-Asphalt Surfaces	0.00	453	0.0330	0.0040	0.00
General Light Industry	11,463	453	0.0330	0.0040	50,572

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	0.00
Other Non-Asphalt Surfaces	0.00	0.00
Unrefrigerated Warehouse-No Rail	38,537,813	0.00
Other Non-Asphalt Surfaces	0.00	0.00
General Light Industry	260,156	0.00

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	—
Other Non-Asphalt Surfaces	0.00	—
Unrefrigerated Warehouse-No Rail	157	—
Other Non-Asphalt Surfaces	0.00	—
General Light Industry	1.40	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
General Light Industry	Other commercial A/C and heat pumps	R-410A	2,088	0.30	4.00	4.00	18.0

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit

Temperature and Extreme Heat	31.1	annual days of extreme heat
Extreme Precipitation	0.60	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	0	0	N/A
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	4	1	1	4
Extreme Precipitation	N/A	N/A	N/A	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	N/A	N/A	N/A	N/A
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	84.6
AQ-PM	95.9
AQ-DPM	18.6
Drinking Water	72.3
Lead Risk Housing	68.0
Pesticides	84.1
Toxic Releases	41.6

Traffic	6.54
Effect Indicators	—
CleanUp Sites	81.1
Groundwater	99.8
Haz Waste Facilities/Generators	22.0
Impaired Water Bodies	23.9
Solid Waste	97.3
Sensitive Population	—
Asthma	87.8
Cardio-vascular	92.2
Low Birth Weights	37.0
Socioeconomic Factor Indicators	—
Education	72.1
Housing	39.2
Linguistic	80.8
Poverty	74.9
Unemployment	43.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	36.28897729
Employed	73.4377005
Median HI	39.08635955
Education	—
Bachelor's or higher	29.23136148
High school enrollment	6.018221481

Preschool enrollment	51.30245092
Transportation	—
Auto Access	64.27563198
Active commuting	73.79699731
Social	—
2-parent households	95.6242782
Voting	68.36904915
Neighborhood	—
Alcohol availability	97.0101373
Park access	2.194276915
Retail density	1.847812139
Supermarket access	11.89529065
Tree canopy	3.990760939
Housing	—
Homeownership	40.15141794
Housing habitability	71.25625561
Low-inc homeowner severe housing cost burden	93.62248171
Low-inc renter severe housing cost burden	96.00923906
Uncrowded housing	65.16104196
Health Outcomes	—
Insured adults	30.20659566
Arthritis	0.0
Asthma ER Admissions	5.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0

Diagnosed Diabetes	0.0
Life Expectancy at Birth	15.1
Cognitively Disabled	72.6
Physically Disabled	68.4
Heart Attack ER Admissions	51.0
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	69.7
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	56.6
Elderly	59.3
English Speaking	25.3
Foreign-born	55.3
Outdoor Workers	2.5
Climate Change Adaptive Capacity	—
Impervious Surface Cover	99.5
Traffic Density	4.7
Traffic Access	0.0
Other Indices	—

Hardship	51.1
Other Decision Support	—
2016 Voting	60.5

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	90.0
Healthy Places Index Score for Project Location (b)	43.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

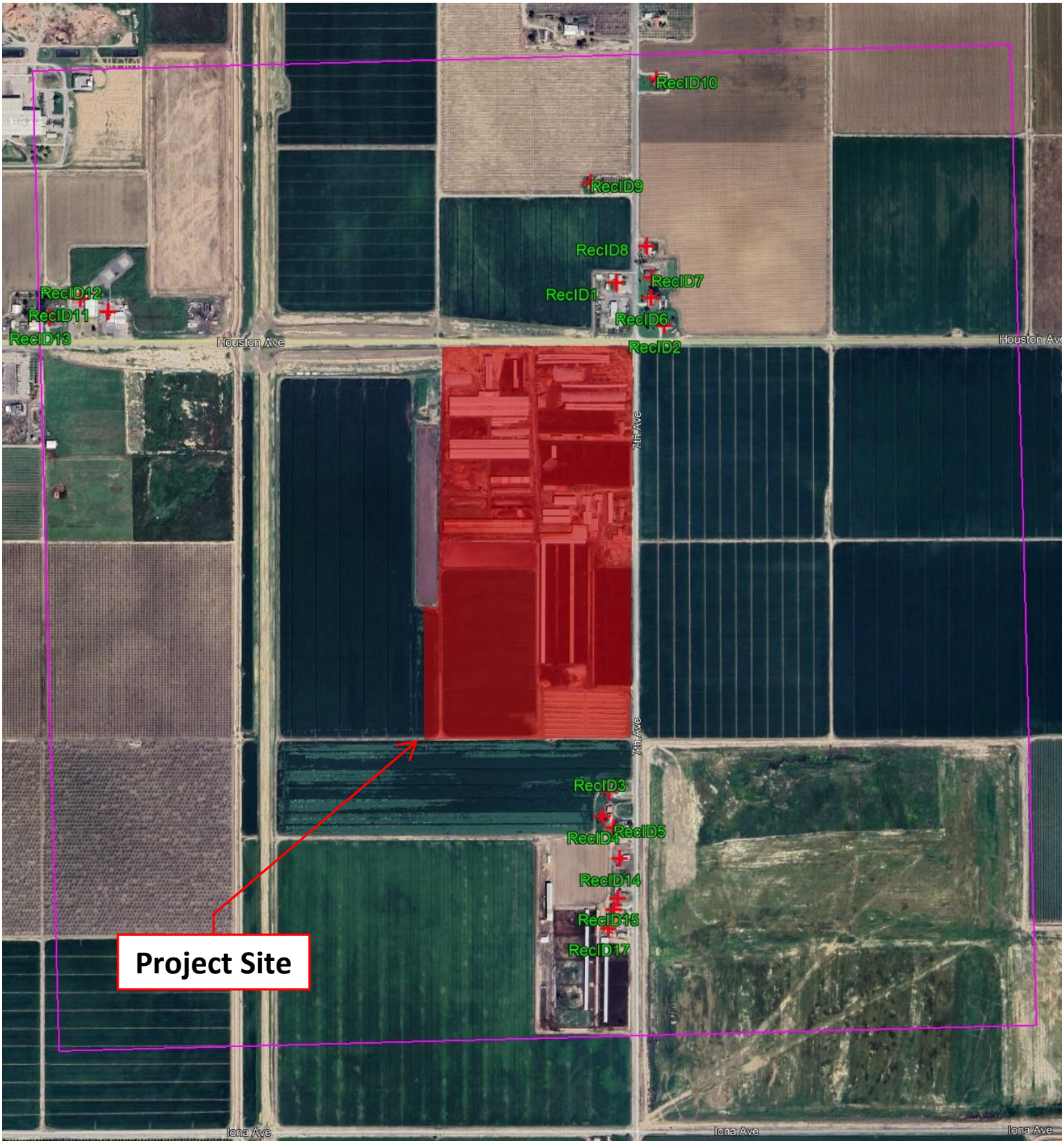
8. User Changes to Default Data

Appendix B. AERMOD and HARP2 ADMRT Results

Prepared by Core Environmental Consulting:

Jesse Madsen, Owner, Principal Scien' st
Clovis, CA

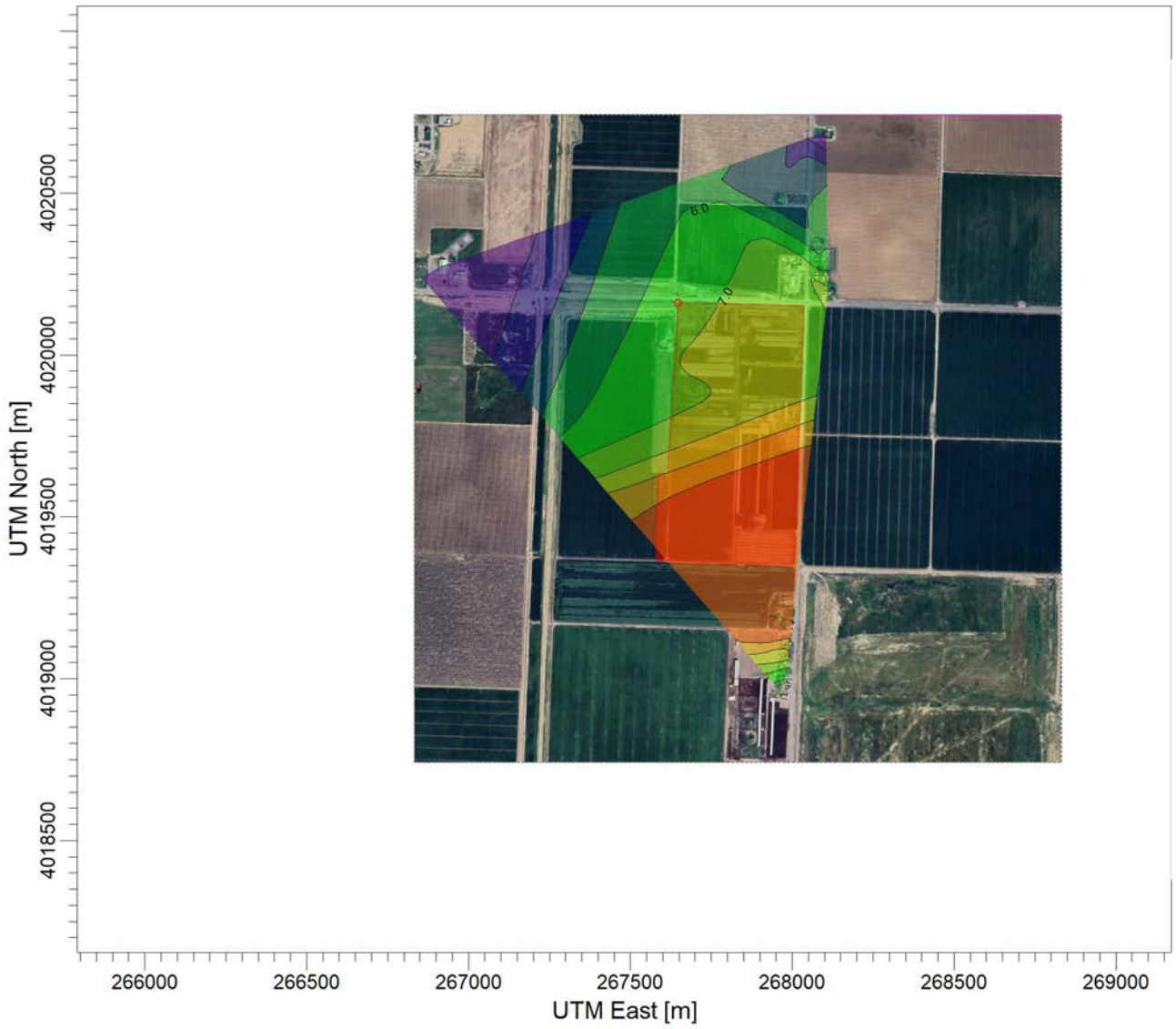
November 2025



Core Environmental Consulting Clovis, CA 93612 (559) 202-3941	PROJECT NAME **Sozinho Dairy #5**	DATE **11/22/25**	SCALE **NOT TO SCALE**	**RECEPTOR MAP**
	PROJECT NUMBER **25014**	DRAWN BY **JM**	LAT/LONG **36.294730, -119.585371**	

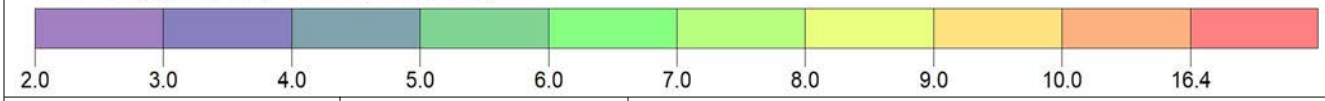
PROJECT TITLE:

C:\Lakes\AERMOD View\25014 - Sozinho Dairy 5 HRA\25014 - Sozinho Dai



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: PAREA1 ug/m^3

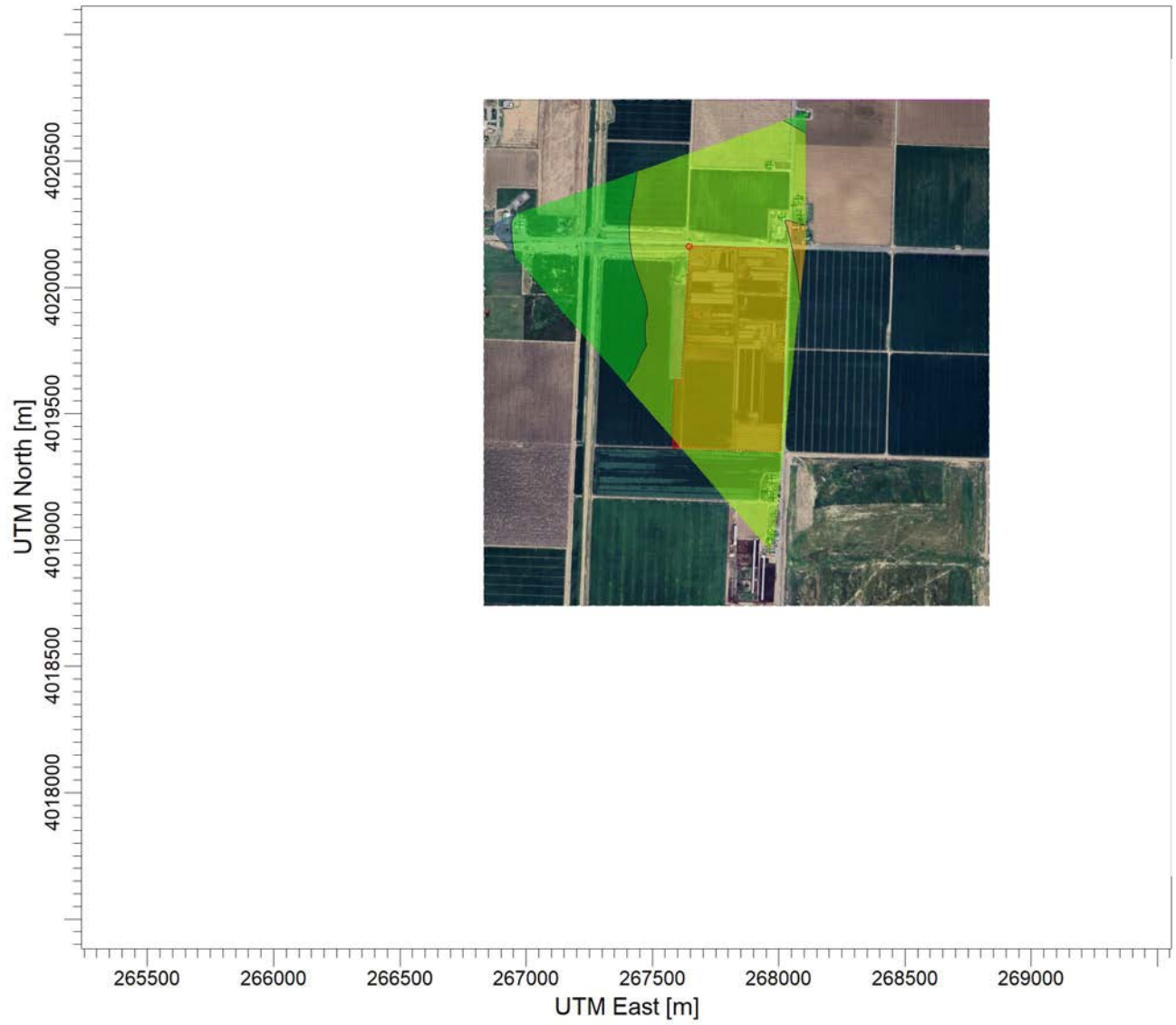
Max: 16.4 [ug/m^3] at (267970.87, 4019242.42)



COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **17**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:21,263 0 0.5 km	
	MAX: **16.4 ug/m^3**	DATE: **11/22/2025**	PROJECT NO.:

PROJECT TITLE:

C:\Lakes\AERMOD View\25014 - Sozinho Dairy 5 HRA\25014 - Sozinho Dai



PLOT FILE OF HIGH 1ST HIGH 1-HR VALUES FOR SOURCE GROUP: PAREA1 ug/m^3

Max: 353 [ug/m^3] at (268108.86, 4020188.00)



COMMENTS:	SOURCES: **1**	COMPANY NAME:	
	RECEPTORS: **17**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:27,142 0 1 km	
	MAX: **353 ug/m^3**	DATE: **11/22/2025**	PROJECT NO.:

```
**
**************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 13.0.0
** Lakes Environmental Software Inc.
** Date: 11/22/2025
** File: C:\Lakes\AERMOD View\25014 - Sozinho Dairy 5 HRA\25014 - Sozinho Dairy 5
HRA.ADI
**
**************************************
**
**
**************************************
** AERMOD Control Pathway
**************************************
**
**
CO STARTING
   TITLEONE C:\Lakes\AERMOD View\25014 - Sozinho Dairy 5 HRA\25014 - Sozinho Dai
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   POLLUTID OTHER
   RUNORNOT RUN
   ERRORFIL "25014 - Sozinho Dairy 5 HRA.err"
CO FINISHED
**
**************************************
** AERMOD Source Pathway
**************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION PAREA1       AREAPOLY   267646.074  4020161.522       71.390
** DESCRSRC Construction
** Source Parameters **
   SRCPARAM PAREA1       3.0792E-06     4.000         6     0.000
   AREAVERT PAREA1       267646.074 4020161.522 268036.261 4020152.176
   AREAVERT PAREA1       268005.888 4019353.109 267580.653 4019364.791
   AREAVERT PAREA1       267585.326 4019635.820 267615.700 4019633.483
   SRCGROUP PAREA1   PAREA1
SO FINISHED
**
**************************************
** AERMOD Receptor Pathway
**************************************
**
**
```

```
RE STARTING
** DESCRREC "" ""
   DISCCART    268013.33   4020278.18   71.40   71.40
   DISCCART    268108.86   4020188.00   71.76   71.76
   DISCCART    267970.87   4019242.42   70.26   70.26
   DISCCART    267956.42   4019191.51   70.11   70.11
   DISCCART    267978.01   4019167.77   70.17   70.17
   DISCCART    268083.21   4020245.51   71.93   71.93
   DISCCART    268085.46   4020287.08   71.65   71.65
   DISCCART    268077.59   4020351.12   71.38   71.38
   DISCCART    267966.35   4020483.71   71.40   71.40
   DISCCART    268106.26   4020691.34   70.78   70.78
   DISCCART    266973.34   4020246.84   70.82   70.82
   DISCCART    266916.64   4020274.87   69.86   69.86
   DISCCART    266853.10   4020238.74   70.70   70.70
   DISCCART    267988.90   4019104.28   69.87   69.87
   DISCCART    267982.69   4019023.54   69.76   69.76
   DISCCART    267974.41   4019000.77   70.15   70.15
   DISCCART    267961.99   4018962.47   70.25   70.25
RE FINISHED
**
**************************************
** AERMOD Meteorology Pathway
**************************************
**
**
ME STARTING
   SURFFILE hanford-muni-53119\Hanford_18-22.SFC
   PROFFILE hanford-muni-53119\Hanford_18-22.PFL
   SURFDATA 53119 2018
   UAIRDATA 23230 2018 OAKLAND/WSO_AP
   PROFBASE 74.0 METERS
ME FINISHED
**
**************************************
** AERMOD Output Pathway
**************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 PAREA1 1ST "25014 - Sozinho Dairy 5 HRA.AD\01H1G001.PLT" 31
   PLOTFILE ANNUAL PAREA1 "25014 - Sozinho Dairy 5 HRA.AD\AN00G001.PLT" 32
   SUMMFILE "25014 - Sozinho Dairy 5 HRA.sum"
OU FINISHED


  *** Message Summary For AERMOD Model Setup ***
```

```
 --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
 ME W186      82       MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
     0.50
 ME W187      82       MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET


 **********************************
 *** SETUP Finishes Successfully ***
 **********************************

↟ *** AERMOD - VERSION 24142  ***   *** C:\Lakes\AERMOD View\25014 - Sozinho Dairy
5 HRA\25014 - Sozinho Dai ***        11/22/25
 *** AERMET - VERSION  21112 ***   ***
                       ***        16:39:34

                                  PAGE   1
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                             ***     MODEL SETUP OPTIONS SUMMARY
 ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - -

 ** Model Options Selected:
      * Model Uses Regulatory DEFAULT Options
      * Model Is Setup For Calculation of Average CONCentration Values.
      * NO GAS DEPOSITION Data Provided.
      * NO PARTICLE DEPOSITION Data Provided.
      * Model Uses NO DRY DEPLETION. DDPLETE  =  F
      * Model Uses NO WET DEPLETION. WETDPLT  =  F
      * Stack-tip Downwash.
      * Model Accounts for ELEVated Terrain Effects.
      * Use Calms Processing Routine.
      * Use Missing Data Processing Routine.
      * No Exponential Decay.
      * Model Uses RURAL Dispersion Only.
      * ADJ_U*   - Use ADJ_U* option for SBL in AERMET
      * CCVR_Sub - Meteorological data includes CCVR substitutions
```

```
      * TEMP_Sub - Meteorological data includes TEMP substitutions
      * Model Assumes No FLAGPOLE Receptor Heights.
      * The User Specified a Pollutant Type of: OTHER

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and      17
Receptor(s)

                with:      0 POINT(s), including
                           0 POINTCAP(s) and      0 POINTHOR(s)
                 and:      0 VOLUME source(s)
                 and:      1 AREA type source(s)
                 and:      0 LINE source(s)
                 and:      0 RLINE/RLINEXT source(s)
                 and:      0 OPENPIT source(s)
                 and:      0 BUOYANT LINE source(s) with a total of     0 line(s)
                 and:      0 SWPOINT source(s)


 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  21112

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE
Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE
Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE
Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and
Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    74.00 ;  Decay
Coef. =    0.000     ;  Rot. Angle =     0.0
                  Emission Units = GRAMS/SEC                                ;
Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Input Runstream File:          aermod.inp

 **Output Print File:             aermod.out
```

*** AREAPOLY SOURCE DATA ***

SOURCE ID	NUMBER PART. CATS.	EMISSION RATE (GRAMS/SEC /METER**2)	LOCATION OF AREA X (METERS)	Y (METERS)	BASE ELEV. (METERS)	RELEASE HEIGHT (METERS)	NUMBER OF VERTS.	INIT. SZ BY	URBAN SOURCE	EMISSION RATE SCALAR VARY	AIRCRAFT
PAREA1	0	0.30792E-05	267646.1	4020161.5	71.4	4.00	6	0.00	NO	NO	

*** SOURCE IDs DEFINING SOURCE GROUPS ***

SRCGROUP ID	SOURCE IDs
PAREA1	PAREA1 ,

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** DISCRETE CARTESIAN RECEPTORS ***
(X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
(METERS)

```
     ( 268013.3, 4020278.2,      71.4,      71.4,       0.0);         ( 268108.9,
4020188.0,      71.8,      71.8,       0.0);
     ( 267970.9, 4019242.4,      70.3,      70.3,       0.0);         ( 267956.4,
4019191.5,      70.1,      70.1,       0.0);
     ( 267978.0, 4019167.8,      70.2,      70.2,       0.0);         ( 268083.2,
4020245.5,      71.9,      71.9,       0.0);
     ( 268085.5, 4020287.1,      71.6,      71.6,       0.0);         ( 268077.6,
4020351.1,      71.4,      71.4,       0.0);
     ( 267966.3, 4020483.7,      71.4,      71.4,       0.0);         ( 268106.3,
4020691.3,      70.8,      70.8,       0.0);
     ( 266973.3, 4020246.8,      70.8,      70.8,       0.0);         ( 266916.6,
4020274.9,      69.9,      69.9,       0.0);
     ( 266853.1, 4020238.7,      70.7,      70.7,       0.0);         ( 267988.9,
4019104.3,      69.9,      69.9,       0.0);
     ( 267982.7, 4019023.5,      69.8,      69.8,       0.0);         ( 267974.4,
4019000.8,      70.1,      70.1,       0.0);
     ( 267962.0, 4018962.5,      70.2,      70.2,       0.0);
```


*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***

(1=YES; 0=NO)

```
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1
1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
```

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

NOTE: METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***

(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: hanford-muni-53119\Hanford_18-22.SFC
Met Version: 21112
Profile file: hanford-muni-53119\Hanford_18-22.PFL

Surface format: FREE

Profile format: FREE

Surface station no.: 53119 Upper air station no.: 23230
Name: UNKNOWN Name: OAKLAND/WSO_AP
Year: 2018 Year: 2018

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
18	01	01	1	01	-10.1	0.132	-9.000	-9.000	-999.	115.	20.6	0.04	0.81	1.00	2.01	337.	10.0	278.8	2.0
18	01	01	1	02	-4.0	0.082	-9.000	-9.000	-999.	57.	12.5	0.03	0.81	1.00	1.31	69.	10.0	276.4	2.0
18	01	01	1	03	-4.1	0.082	-9.000	-9.000	-999.	56.	12.0	0.02	0.81	1.00	1.40	246.	10.0	275.4	2.0
18	01	01	1	04	-4.5	0.085	-9.000	-9.000	-999.	60.	12.4	0.02	0.81	1.00	1.47	266.	10.0	275.4	2.0

```
 18 01 01   1 05   -7.2  0.111 -9.000 -9.000 -999.   88.     17.0  0.04   0.81
1.00    1.71  330.   10.0  275.9    2.0
 18 01 01   1 06   -3.3  0.074 -9.000 -9.000 -999.   48.     11.1  0.02   0.81
1.00    1.23  241.   10.0  274.2    2.0
 18 01 01   1 07   -5.4  0.093 -9.000 -9.000 -999.   68.     13.5  0.02   0.81
1.00    1.62  176.   10.0  274.9    2.0
 18 01 01   1 08   -7.2  0.111 -9.000 -9.000 -999.   89.     17.2  0.03   0.81
0.64    1.77  114.   10.0  274.9    2.0
 18 01 01   1 09    7.8  0.118  0.205  0.006   40.   97.    -19.1  0.02   0.81
0.35    1.60  153.   10.0  277.0    2.0
 18 01 01   1 10   50.9  0.142  0.637  0.006  183.  128.     -5.1  0.02   0.81
0.26    1.64  201.   10.0  280.9    2.0
 18 01 01   1 11   82.6  0.123  1.024  0.016  471.  103.     -2.0  0.04   0.81
0.22    1.08   31.   10.0  284.9    2.0
 18 01 01   1 12   99.0  0.150  1.153  0.017  561.  139.     -3.1  0.03   0.81
0.21    1.50   62.   10.0  286.1    2.0
 18 01 01   1 13   99.9  0.149  1.209  0.019  640.  138.     -3.0  0.04   0.81
0.21    1.42  356.   10.0  287.5    2.0
 18 01 01   1 14   85.6  0.161  1.192  0.019  714.  156.     -4.4  0.02   0.81
0.22    1.93  293.   10.0  289.9    2.0
 18 01 01   1 15   55.9  0.189  1.041  0.019  728.  198.    -11.0  0.02   0.81
0.25    2.49  296.   10.0  290.4    2.0
 18 01 01   1 16   13.6  0.148  0.651  0.019  731.  136.    -21.3  0.02   0.81
0.34    1.98  328.   10.0  289.2    2.0
 18 01 01   1 17   -3.7  0.082 -9.000 -9.000 -999.   57.     13.4  0.04   0.81
0.61    1.26  340.   10.0  285.9    2.0
 18 01 01   1 18   -5.8  0.098 -9.000 -9.000 -999.   73.     14.4  0.02   0.81
1.00    1.67  230.   10.0  283.1    2.0
 18 01 01   1 19   -2.9  0.070 -9.000 -9.000 -999.   45.     11.0  0.02   0.81
1.00    1.13  202.   10.0  281.4    2.0
 18 01 01   1 20   -4.9  0.090 -9.000 -9.000 -999.   65.     13.7  0.03   0.81
1.00    1.45  110.   10.0  279.9    2.0
 18 01 01   1 21   -2.2  0.065 -9.000 -9.000 -999.   40.     11.6  0.03   0.81
1.00    0.89  107.   10.0  278.8    2.0
 18 01 01   1 22   -2.4  0.070 -9.000 -9.000 -999.   44.     12.8  0.06   0.81
1.00    0.87   15.   10.0  279.9    2.0
 18 01 01   1 23   -3.2  0.075 -9.000 -9.000 -999.   49.     11.8  0.03   0.81
1.00    1.16   85.   10.0  279.2    2.0
 18 01 01   1 24   -4.9  0.091 -9.000 -9.000 -999.   66.     14.1  0.04   0.81
1.00    1.40   53.   10.0  277.5    2.0


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 18 01 01 01   10.0 1  337.    2.01   278.8   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 24142  ***   *** C:\Lakes\AERMOD View\25014 - Sozinho Dairy
5 HRA\25014 - Sozinho Dai ***        11/22/25
 *** AERMET - VERSION  21112 ***   ***
```

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: PAREA1 ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
268013.33	4020278.18	7.74651	268108.86	4020188.00	8.54098
267970.87	4019242.42	16.39844	267956.42	4019191.51	12.69286
267978.01	4019167.77	11.69083	268083.21	4020245.51	7.43656
268085.46	4020287.08	6.35491	268077.59	4020351.12	5.24066
267966.35	4020483.71	4.07935	268106.26	4020691.34	2.30632
266973.34	4020246.84	2.30999	266916.64	4020274.87	2.07533
266853.10	4020238.74	1.98318	267988.90	4019104.28	9.10294
267982.69	4019023.54	6.65962	267974.41	4019000.77	6.07722
267961.99	4018962.47	5.20864			

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: PAREA1 ***
INCLUDING SOURCE(S): PAREA1 ,

*** DISCRETE CARTESIAN RECEPTOR POINTS

***

** CONC OF OTHER IN MICROGRAMS/M**3
**

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
268013.33	4020278.18	294.59513	(21061722)	268108.86	4020188.00	352.64825	(18111608)
267970.87	4019242.42	295.39513	(20020608)	267956.42	4019191.51	273.10724	(22121624)
267978.01	4019167.77	260.85428	(20020608)	268083.21	4020245.51	304.84471	(18111608)
268085.46	4020287.08	268.18357	(20041202)	268077.59	4020351.12	249.53696	(18020601)
267966.35	4020483.71	220.34466	(18120803)	268106.26	4020691.34	170.60042	(18012822)
266973.34	4020246.84	103.38437	(20011317)	266916.64	4020274.87	97.63940	(20011317)
266853.10	4020238.74	88.28240	(22120308)	267988.90	4019104.28	236.71719	(20020608)
267982.69	4019023.54	213.86392	(20020608)	267974.41	4019000.77	208.96990	(22121624)
267961.99	4018962.47	202.69590	(22121624)				

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER 5 YEARS ***

** CONC OF OTHER IN MICROGRAMS/M**3
**

GROUP ID	NETWORK AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG)	OF TYPE	GRID-ID
PAREA1	1ST HIGHEST VALUE IS	16.39844 AT (267970.87, 4019242.42, 70.26,		

```
   70.26,    0.00)  DC
       2ND HIGHEST VALUE IS      12.69286 AT (  267956.42,  4019191.51,    70.11,
   70.11,    0.00)  DC
       3RD HIGHEST VALUE IS      11.69083 AT (  267978.01,  4019167.77,    70.17,
   70.17,    0.00)  DC
       4TH HIGHEST VALUE IS       9.10294 AT (  267988.90,  4019104.28,    69.87,
   69.87,    0.00)  DC
       5TH HIGHEST VALUE IS       8.54098 AT (  268108.86,  4020188.00,    71.76,
   71.76,    0.00)  DC
       6TH HIGHEST VALUE IS       7.74651 AT (  268013.33,  4020278.18,    71.40,
   71.40,    0.00)  DC
       7TH HIGHEST VALUE IS       7.43656 AT (  268083.21,  4020245.51,    71.93,
   71.93,    0.00)  DC
       8TH HIGHEST VALUE IS       6.65962 AT (  267982.69,  4019023.54,    69.76,
   69.76,    0.00)  DC
       9TH HIGHEST VALUE IS       6.35491 AT (  268085.46,  4020287.08,    71.65,
   71.65,    0.00)  DC
      10TH HIGHEST VALUE IS       6.07722 AT (  267974.41,  4019000.77,    70.15,
   70.15,    0.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
↟ *** AERMOD - VERSION 24142  ***   *** C:\Lakes\AERMOD View\25014 - Sozinho Dairy
5 HRA\25014 - Sozinho Dai ***        11/22/25
 *** AERMET - VERSION  21112 ***   ***
                       ***        16:39:34

                                   PAGE  10
 *** MODELOPTs:    RegDFAULT  CONC  ELEV  RURAL  ADJ_U*

                                                *** THE SUMMARY OF HIGHEST  1-HR
RESULTS ***


                                     ** CONC OF OTHER    IN MICROGRAMS/M**3
              **

                                                    DATE
                                         NETWORK
GROUP ID                           AVERAGE CONC     (YYMMDDHH)             RECEPTOR
(XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - - - - - - - - - - - - - - - - - - - - - -

PAREA1   HIGH   1ST HIGH VALUE IS     352.64825  ON 18111608: AT (  268108.86,
4020188.00,    71.76,    71.76,    0.00)  DC
```

*** MODELOPTs: RegDFAULT CONC ELEV RURAL ADJ_U*

*** Message Summary : AERMOD Model Execution ***

 --------- Summary of Total Messages --------

A Total of   0 Fatal Error Message(s)
A Total of   2 Warning Message(s)
A Total of   1361 Informational Message(s)

A Total of   43824 Hours Were Processed

A Total of   680 Calm Hours Identified

A Total of   681 Missing Hours Identified (1.55 Percent)

   ******** FATAL ERROR MESSAGES ********
              *** NONE ***

   ********   WARNING MESSAGES   ********
ME W186   82   MEOPEN: THRESH_1MIN 1-min ASOS wind speed threshold used
    0.50
ME W187   82   MEOPEN: ADJ_U* Option for Stable Low Winds used in AERMET

   ****
   *** AERMOD Finishes Successfully ***
   ****

**HARP - Air Dispersion Modeling and Risk Tool v22118

**11/22/2025

**Exported Risk Results - CANCER

REC	X	Y	RISK_SUM	SCENARIO	INHAL_RISK
1	268013.3	4020278	5.34E-06	2YrCancerDerived_Inh	5.34E-06
2	268108.9	4020188	5.88E-06	2YrCancerDerived_Inh	5.88E-06
3	267970.9	4019242	1.13E-05	2YrCancerDerived_Inh	1.13E-05
4	267956.4	4019192	8.74E-06	2YrCancerDerived_Inh	8.74E-06
5	267978	4019168	8.05E-06	2YrCancerDerived_Inh	8.05E-06
6	268083.2	4020246	5.12E-06	2YrCancerDerived_Inh	5.12E-06
7	268085.5	4020287	4.38E-06	2YrCancerDerived_Inh	4.38E-06
8	268077.6	4020351	3.61E-06	2YrCancerDerived_Inh	3.61E-06
9	267966.4	4020484	2.81E-06	2YrCancerDerived_Inh	2.81E-06
10	268106.3	4020691	1.59E-06	2YrCancerDerived_Inh	1.59E-06
11	266973.3	4020247	1.59E-06	2YrCancerDerived_Inh	1.59E-06
12	266916.6	4020275	1.43E-06	2YrCancerDerived_Inh	1.43E-06
13	266853.1	4020239	1.37E-06	2YrCancerDerived_Inh	1.37E-06
14	267988.9	4019104	6.27E-06	2YrCancerDerived_Inh	6.27E-06
15	267982.7	4019024	4.59E-06	2YrCancerDerived_Inh	4.59E-06
16	267974.4	4019001	4.19E-06	2YrCancerDerived_Inh	4.19E-06

**HARP - Air Dispersion Modeling and Risk Tool v22118

**11/22/2025

**Exported Risk Results - CHRONIC

REC	X	Y	SCENARIO	RESP	MAXHI
1	268013.33	4020278.18	NonCancerChronicDerived_Inh	0.0031198	0.0031198
2	268108.86	4020188	NonCancerChronicDerived_Inh	0.0034397	0.0034397
3	267970.87	4019242.42	NonCancerChronicDerived_Inh	0.0066042	0.0066042
4	267956.42	4019191.51	NonCancerChronicDerived_Inh	0.0051118	0.0051118
5	267978.01	4019167.77	NonCancerChronicDerived_Inh	0.0047083	0.0047083
6	268083.21	4020245.51	NonCancerChronicDerived_Inh	0.0029949	0.0029949
7	268085.46	4020287.08	NonCancerChronicDerived_Inh	0.0025593	0.0025593
8	268077.59	4020351.12	NonCancerChronicDerived_Inh	0.0021106	0.0021106
9	267966.35	4020483.71	NonCancerChronicDerived_Inh	0.0016429	0.0016429
10	268106.26	4020691.34	NonCancerChronicDerived_Inh	0.00092883	0.00092883
11	266973.34	4020246.84	NonCancerChronicDerived_Inh	0.0009303	0.0009303
12	266916.64	4020274.87	NonCancerChronicDerived_Inh	0.0008358	0.0008358
13	266853.1	4020238.74	NonCancerChronicDerived_Inh	0.00079869	0.00079869
14	267988.9	4019104.28	NonCancerChronicDerived_Inh	0.003666	0.003666
15	267982.69	4019023.54	NonCancerChronicDerived_Inh	0.002682	0.002682
16	267974.41	4019000.77	NonCancerChronicDerived_Inh	0.0024475	0.0024475

HARP2 - HRACalc (dated 22118) 11/22/2025 4:50:45 PM - Output Log

GLCs loaded successfully
Pollutants loaded successfully
Pathway receptors loaded successfully
****
RISK SCENARIO SETTINGS

Receptor Type: Resident
Scenario: All
Calculation Method: Derived

****
EXPOSURE DURATION PARAMETERS FOR CANCER

Start Age: -0.25
Total Exposure Duration: 2

Exposure Duration Bin Distribution
3rd Trimester Bin: 0.25
0<2 Years Bin: 2
2<9 Years Bin: 0
2<16 Years Bin: 0
16<30 Years Bin: 0
16 to 70 Years Bin: 0

****
PATHWAYS ENABLED

NOTE: Inhalation is always enabled and used for all assessments. The remaining pathways are only used for cancer and noncancer chronic assessments.

Inhalation: True
Soil: False
Dermal: False
Mother's milk: False
Water: False
Fish: False
Homegrown crops: False
Beef: False
Dairy: False
Pig: False
Chicken: False
Egg: False

****
INHALATION

Daily breathing rate: LongTerm24HR

HARP Project Summary Report 11/22/2025 4:54:38 PM

PROJECT INFORMATION
HARP Version: 22118
Project Name: 25014 - SOZINHO DAIRY 5 HRA
Project Output Directory: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA
HARP Database: NA

FACILITY INFORMATION
Origin
X (m):0
Y (m):0
Zone:1
No. of Sources:0
No. of Buildings:0

EMISSION INVENTORY
No. of Pollutants:1
No. of Background Pollutants:0

Emissions

ScrID	StkID	ProID	PolID	PolAbbrev	Multi	Annual Ems (lbs/yr)	MaxHr Ems (lbs/hr)	MWAF
PAREA1	0	0	9901	DieselExhPM	1	140	0	1

Background

PolID	PolAbbrev	Conc (ug/m^3)	MWAF

Ground level concentration files (\glc\)

9901MAXHR.txt
9901PER.txt

POLLUTANT HEALTH INFORMATION
Health Database: C:\HARP2\Tables\HEALTH17320.mdb
Health Table Version: HEALTH22013
Official: True

PolID	PolAbbrev	InhCancer	OralCancer	AcuteREL	InhChronicREL	OralChronicREL	InhChronic8HRREL
9901	DieselExhPM	1.1					5

AIR DISPERSION MODELING INFORMATION
Versions used in HARP. All executables were obtained from USEPA's Support Center for Regulatory Atmospheric Modeling website (http://www.epa.gov/scram001/)
AERMOD: 18081
AERMAP: 18081
BPIPPRM: 04274
AERPLOT: 13329

METEOROLOGICAL INFORMATION
Version:
Surface File:
Profile File:
Surface Station:
Upper Station:
On-Site Station:

LIST OF AIR DISPERSION FILES
AERMOD Input File:
AERMOD Output File:
AERMOD Error File:
Plotfile list
_____

LIST OF RISK ASSESSMENT FILES
Health risk analysis files (\hra\)
_____
ConstructionCancerRisk.csv
ConstructionCancerRiskSumByRec.csv
ConstructionGLCList.csv
ConstructionHRAInput.hra
ConstructionNCAcuteRisk.csv
ConstructionNCAcuteRiskSumByRec.csv
ConstructionNCChronicRisk.csv
ConstructionNCChronicRiskSumByRec.csv
ConstructionOutput.txt
ConstructionPathwayRec.csv
ConstructionPolDB.csv

Spatial averaging files (\sa\)
_____

Worker Adjustment Factors
Worker adjustment factors enabled: NO

Fraction at time at home
3rd Trimester to 16 years: OFF
16 years to 70 years: OFF

****
TIER 2 SETTINGS

Tier2 adjustments were used in this assessment. Please see the input file for details.
Tier2 - What was changed: ED or start age changed|
Calculating cancer risk
Cancer risk breakdown by pollutant and receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionCancerRisk.csv
Cancer risk total by receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionCancerRiskSumByRec.csv
Calculating chronic risk
Chronic risk breakdown by pollutant and receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionNCChronicRisk.csv
Chronic risk total by receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionNCChronicRiskSumByRec.csv
Calculating acute risk
Acute risk breakdown by pollutant and receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionNCAcuteRisk.csv
Acute risk total by receptor saved to: C:\HARP2\Projects\25014 - SOZINHO DAIRY 5 HRA\hra\ConstructionNCAcuteRiskSumByRec.csv
HRA ran successfully

Appendix E: Biological Evaluation

SOZINHO #5 DAIRY IMPROVEMENTS
BIOLOGICAL EVALUATION
KINGS COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

Austin Pearson, Vice President
Natalie Neff, Staff Ecologist

Prepared for

Issac Garcia
4Creeks, Inc.
324 S. Santa Fe Suite A
Visalia, CA 93292

September 3, 2025 PN 2885-01

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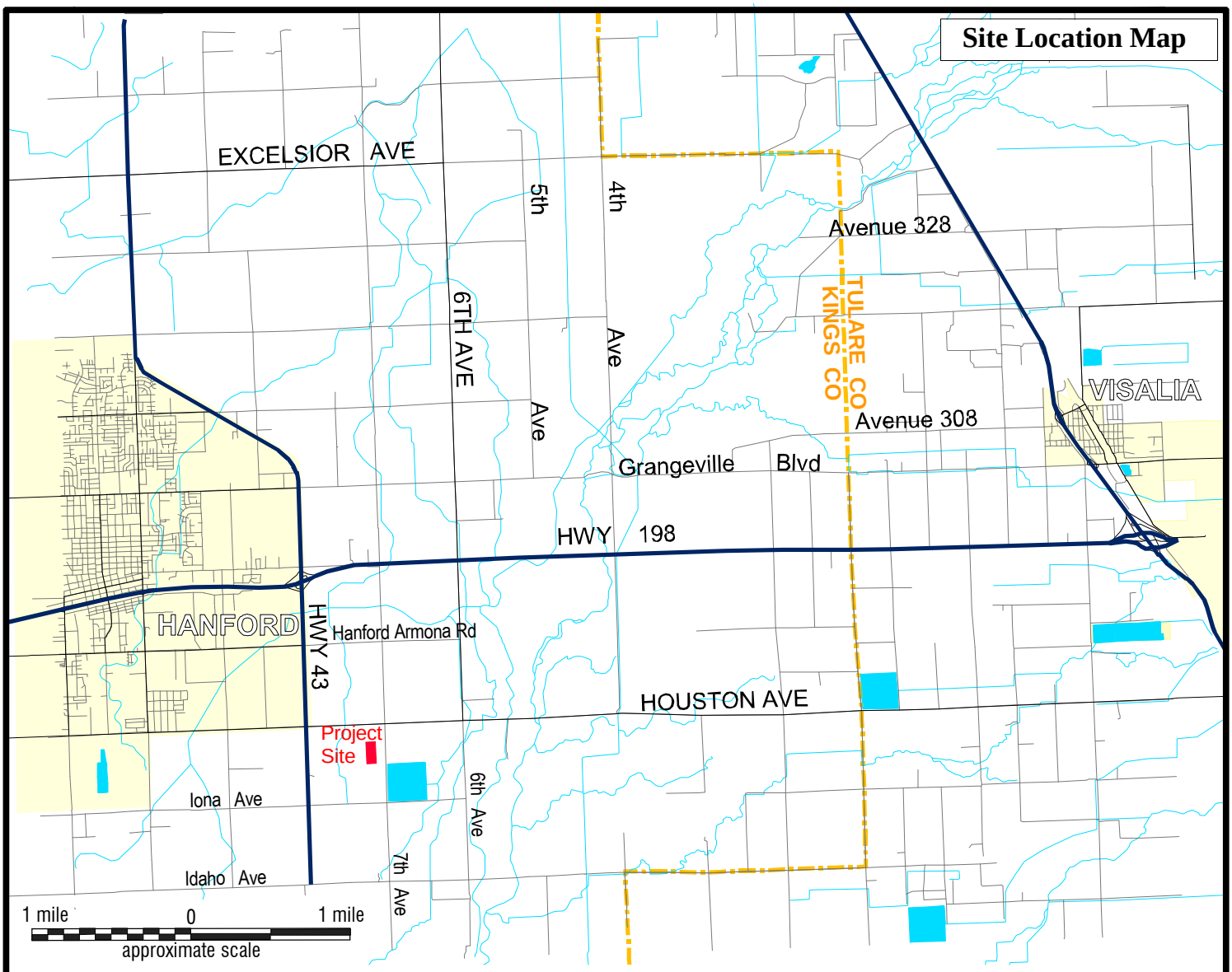
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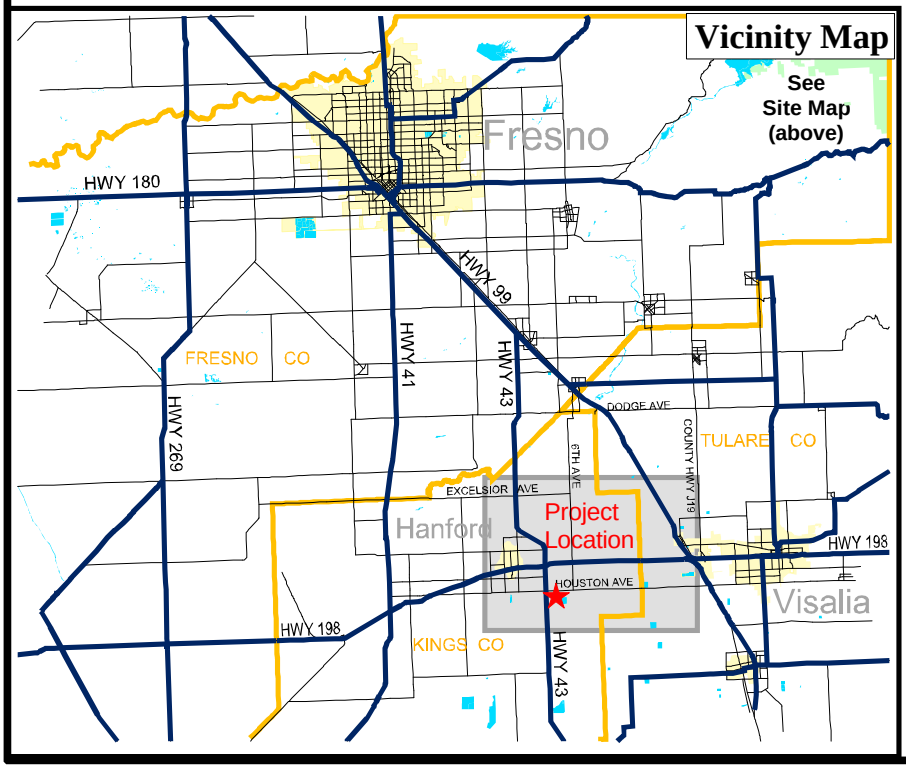
1.0 INTRODUCTION

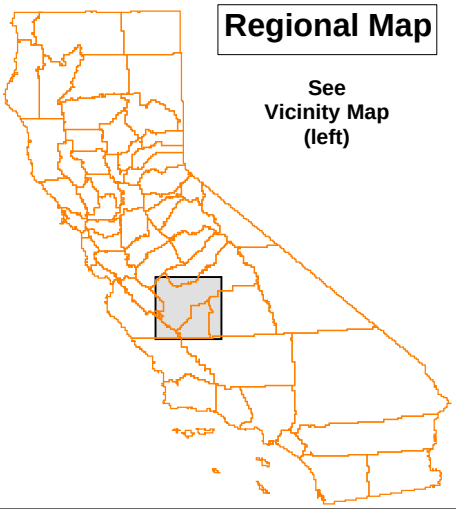
The technical report that follows describes the biotic resources of areas within and adjacent to the existing Sozinho #5 Dairy facility where improvements are proposed (hereafter referred to as the "site" or "project site") and evaluates possible impacts to sensitive or protected biological resources that could result from these improvements (hereafter referred to as the "project"). The project site is located in northeast Kings County approximately 0.75 miles east of State Route 43 and 2.25 miles south of State Route 198, southwest of the intersection of Houston Avenue and 7th Avenue. (Figure 1). The project site is located within the Remnoy U.S. Geological Survey (USGS) 7.5-minute quadrangle; Section 9, Township 19 South, Range 22 East (Mt. Diablo Base and Meridian).

1.1 PROJECT DESCRIPTION

The project consists of the combination of two (2) existing lagoons into one (1) lagoon with two (2) constructed earthen berms in an existing lagoon, two (2) mechanical separators, one (1) reception tank and concrete pad, one (1) reception pit, five (5) wastewater processing beds with a total area of 8.58 acres (1,112' x 336'), one (1) product storage area, three (3) compost processing areas, two (2) feed storage areas, nine (9) rows of calf hutches, eleven (11) corral shade structures, one (1) open lot corral, one (1) maternity barn, and one (1) freestall barn. The proposed improvements are located over the existing Sozinho Dairy #5 facility and crops. Improvements will allow the facility to further treat wastewater generated by facility operations and will grow cattle in a healthy, well-managed, cattle-friendly environment. These improvements have a collective footprint of approximately 40 acres. A site plan is presented in Figure 2.





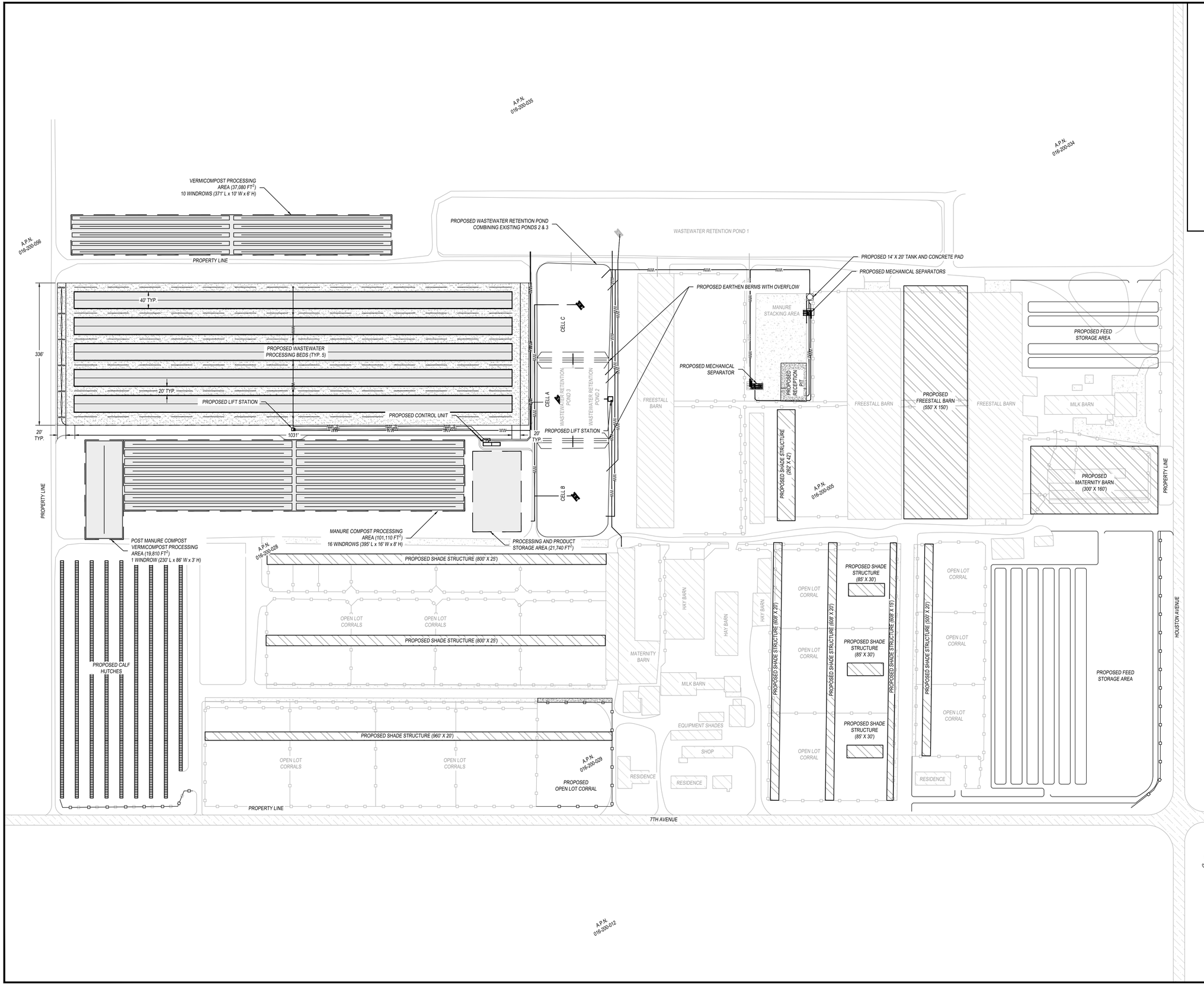


LIVE OAK ASSOCIATES, INC.

Sozinho #5 Dairy Improvements

Vicinity Map

Date	Project #	Figure #
2/12/2025	2885-01	1



OWNER/OPERATOR	JOE SOZINHO
MAILING ADDRESS	12252 7TH AVENUE HANFORD, CA 93230
FACILITY ADDRESS	7205 HOUSTON AVENUE HANFORD, CA 93230
A.P.N	016-200-005, 016-200-028, 016-200-029, 016-200-035
COUNTY	KINGS COUNTY

NOTE: FULL SIZE COPY AVAILABLE UPON REQUEST
HALF SIZE COPY DOES NOT SCALE, FULL SIZE
COPY WILL SCALE PROPERLY

DRAWING TRACKER				
DATE	VERSION	DRWN BY	CHK BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTA FE, STE. A
P.O. BOX 3520
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215

CONSTRUCTION PLAN
SOZINHO DAIRY #5
7205 HOUSTON AVENUE
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING
PROPOSED SITE PLAN

PLOT DATE:	Jan 27, 2025
JOB NO.:	240504
FILE NAME:	240504 - SP
SCALE:	SEE SHEET
SHEET NO.:	1 OF 1

1.2 REPORT OBJECTIVES

Development of agricultural areas has the potential to damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, and/or covered by local policies and ordinances. Specifically, this investigation and report were completed in compliance with Policy DE 3.3a of the Dairy Element of the Kings County General Plan, which requires all applications for new or expanded dairies to include a Biological Resources Survey for wetlands and habitat for sensitive species. As such, the objectives of this report are to summarize all site-specific information related to existing biological resources and, if necessary, identify appropriate avoidance and mitigation measures that would reduce the magnitude of potential project-related impacts to biological resources.

1.3 STUDY METHODOLOGY

The analysis of impacts, as discussed in Section 3.0 of this report, is based on the known and potential biotic resources of the project site discussed in Section 2.0. Sources of information used in the preparation of this analysis included: (1) the *California Natural Diversity Data Base* (CDFW 2024), (2) the *Online Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2024), and (3) manuals, reports, and references related to plants and animals of the San Joaquin Valley region. A reconnaissance-level field survey of the project site was conducted on May 17, 2024 by LOA biologist Natalie Neff. This survey consisted of a visual inspection of the survey area while systematically walking the site in order to assure full visual coverage. During the field visit the principal land uses of the site were identified and the constituent plants and animals of each were noted. The field survey conducted for this study was sufficient to assess the significance of possible biological impacts associated with the dairy expansion and to assess the need for more detailed studies that could be warranted if potentially sensitive biotic resources were identified in this initial survey.

2.0 EXISTING CONDITIONS

2.1 PROJECT SITE

The project site consists entirely of ruderal (i.e. disturbed) land. Immediately surrounding lands consist of the existing dairy and agricultural land in every direction. Topographically, the site is relatively level at an average elevation of approximately 236 ft. National Geodetic Vertical Datum (NGVD).

The project site experiences a Mediterranean climate where warm dry summers are followed by cool moist winters. Summer temperatures commonly exceed 100 degrees Fahrenheit, and the relative humidity is generally very low. Winter temperatures rarely rise much above 70 degrees Fahrenheit, with daytime highs often below 60 degrees Fahrenheit. Annual precipitation within the project site is about 9 inches, almost 85% of which falls between the months of October and March. Nearly all precipitation falls in the form of rain. Storm water readily infiltrates the soils.

Aquatic features in the near vicinity of the site include two dairy wastewater retention ponds, one of which is proposed for the construction of two earthen berms within it, an irrigation ditch approximately 0.2 miles west of the project site, a seasonal basin approximately 0.4 miles northwest of the project site, and a percolation basin approximately 200 feet southeast of the project site. Guernsey Slough and Cross Creek are located approximately 1.7 miles southeast of the project site and 1.7 miles east of the project site respectively.

Two soil mapping units occur on the project site: Wasco sandy loam, 0-5 percent slopes and Kimberlina fine sandy loam, saline-alkali (California Soil Resource Lab, 2024). These soil mapping units are not considered hydric soils, meaning the soil would not be prone to wetland development.

Soils of the project site have been substantially altered through ground disturbance during initial dairy and agricultural development, and dairy and agricultural operations. As a result, the soils of the site no longer maintain their native soil characteristics and would, therefore, have no particular significance to biological resources of the site.

2.2 BIOTIC HABITATS/LAND USES

Natural biotic habitats are absent from the project site due to years of agricultural uses and activities associated with dairy operations. The land use of the project site can best be characterized as ruderal. A list of the vascular plant species observed within the project site and a list of the terrestrial vertebrates using, or potentially using, the site is provided in Appendices A and B, respectively.

Ruderal lands on the site have experienced disturbance from activities associated with historic farming and ongoing dairy use of the site. At the time of LOA's field survey, vegetation was largely restricted to the berms of the wastewater pond, cultivated wheat fields, and the edges of the cultivated wheat fields. Vegetation consisted primarily of weedy forbs including Palmer amaranth (*Amaranthus palmeri*), flax leaf horseweed (*Erigeron bonariensis*), London rocket (*Sisymbrium irio*), annual yellow sweet clover (*Melilotus indicus*), and cheeseweed (*Malva parviflora*).

The site offers little habitat value for many wildlife species. Despite the site's proximity to an irrigation ditch, a seasonal basin, and a percolation basin, amphibians and aquatic reptiles like turtles are expected to be absent from the site due to the lack of suitable aquatic breeding habitat on the site and unsuitable aestivation habitat within the site.

Though amphibians and aquatic reptiles are expected to be absent, some common terrestrial reptile, bird, and mammal species are expected to use the site. Reptile species that may forage on the site include the side-blotched lizard (*Uta stansburiana*) (observed) and snakes such as the gopher snake (*Pituophis melanoleucus*) and common kingsnake *(Lampropeltis getulus*), though these species' numbers would be expected to be quite low, if present at all.

Resident bird species expected to use this habitat would include red-winged blackbirds (*Agelaius phoeniceus*), Brewer's blackbirds (*Euphagus cyanocephalus*), mourning doves (*Zenaida macroura*), and killdeer (*Charadrius vociferus*), among others. Wintering birds that may utilize the site include the savannah sparrow (*Passerella sandwichensis*), American pipit (*Anthus rubescens*), white-crowned sparrow (*Zonotrichia leucophrys*) and Say's phoebe (*Sayornis saya*),

among others. Summer migrants such as the barn swallow (*Hirundo rustica*) would be expected to forage over the site as well.

Several California ground squirrel (*Otospermophilus beecheyi*) burrows were observed along the north edge of the proposed stacking bed location. Burrows were also observed within the vicinity of the project site along the edges of the wheat fields and in scattered locations within the dairy. Other rodents that may occur on the site in limited numbers include Botta's pocket gopher (*Thomomys bottae*), deer mouse (*Peromyscus maniculatus*), California vole (*Microtus californicus*), house mouse (*Mus musculus*), and Norway rat (*Rattus norvegicus*).

The site offers some foraging opportunities for mammalian and avian predators. Raptors such as red-tailed hawks (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), and barn owls (*Tyto alba*) may occasionally forage over the site. Various species of bat may forage over the site for flying insects and disturbance-tolerant mammalian predators such as raccoons (*Procyon lotor*), striped skunks (*Mephitis mephitis*), and coyotes (*Canis latrans*) may occasionally forage on or pass through the site as well.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Many species of plants and animals within the state of California have low populations and/or limited distributions. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.0, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as "threatened" or "endangered" under state and federal endangered species legislation. Others have been designated as candidates for such a listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2024). Collectively, these plants and animals are referred to as "special status species."

A review of the California Natural Diversity Data Base (CNDDB) Bios 5 Data Viewer (CDFW 2024) identified no special status plant species occurrences on or in the near vicinity of the project site, and the project site provides no habitat for special status plant species due to disturbance from decades of dairy and farming activities. The following special status animal species have been documented in the project vicinity: Swainson's hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), and San Joaquin kit fox (*Vulpes macrotis mutica*). The potential for each of these special status species to occur on the project site is discussed below.

2.3.1 Swainson's Hawk (California Threatened)

The Swainson's hawk typically nests in large trees along riparian systems, but may also nest in oak groves, or lone, mature trees in agricultural fields or along roadsides. Nest sites are typically located adjacent to suitable foraging habitat such as grasslands, lightly grazed pastures, or alfalfa or other hay crops. In the Central Valley, California voles account for about 45% of non-insect prey taken by the Swainson's hawk, followed by birds (32%), and gophers, mice, and other small mammals (20%) (Estep 1989). Insects comprise a large proportion of individual prey items, but a negligible proportion of total prey biomass.

During the May 17th survey, a Swainson's hawk was spotted flying over the project site. Though the project site does not contain any trees, several mature trees lie within 0.25 mile of the project site. These large, mature trees could provide suitable nesting habitat for Swainson's hawk. There are 32 CNDDB nesting occurrences of Swainson's hawk within 10 miles of the project site and over 20 ebird sightings within the vicinity as well. The ruderal lands of the project site may occasionally be used for foraging by the Swainson's hawk; however, the history of ground disturbance due to dairy operations and farming activities such as wheat cultivation likely limits the availability of vertebrate prey across the site, reducing its foraging suitability for this species.

2.3.2 Tricolored Blackbird (California Threatened)

Tricolored blackbirds historically bred in marshes across California's Central Valley but are now most often found nesting in soy and wheat fields due to loss of wetland habitat. These birds nest closely together in breeding colonies made up of thousands of mating pairs. They are

opportunistic foragers, consuming a variety of invertebrates and grains found in agricultural fields and grasslands.

Two CNDDB nesting occurrences from 2014 were documented 5.75 miles southwest and 11.5 miles southwest of the project site and there are several recent ebird sightings of this species as well. Given the presence of tricolored blackbirds in the area and the wheat fields on the project site, tricolored blackbirds could nest on the project site.

2.3.2 Loggerhead Shrike (California Species of Special Concern)

This bird frequents open habitats with sparse shrubs and trees and is a common species found in cropland. It requires elevated perches and trees for nesting. The loggerhead shrike's diet consists of arthropods and small vertebrates that they will spear on the end of sharp branches or barbed wire fences.

Although multiple ebird sightings of this species were documented within 10 miles of the project site, there were no CNDDB occurrence within 10 miles of the project site and there are no suitable nesting trees on or within 250ft of the project site. Nesting loggerhead shrikes would therefore be absent from the project site, though they could occasionally forage or fly over the project site.

2.3.3 Burrowing Owl (California Species of Special Concern; California Candidate Endangered)

The burrowing owl is associated with open habitats including grasslands, grazed pastures, open shrub lands, and occasionally agricultural fields. The primary indicators of suitable habitat for this species are relatively short vegetation and underground burrows or similar features for roosting and nesting. In California, burrowing owls primarily roost and nest in the burrows of California ground squirrels, but may also use badger, coyote, or fox dens. The burrowing owl diet includes a broad array of arthropods, small rodents, birds, reptiles, and amphibians. In California, burrowing owl survival and reproductive success appear to be linked to rodent populations, particularly California vole (Gervais et al. 2006)

Although several California ground squirrel burrows were found on site (which provide potential burrowing owl habitat), there was no sign of burrowing owls on site. There are nine CNDDB

burrowing occurrences documented within 10 miles of the project site, and five eBird occurrences within that distance. Though the tall, thick wheat fields provide unsuitable foraging habitat for this species, open areas with sparse vegetation adjacent to the project site provide possible habitat for this species and burrows on and adjacent to the project site could be utilized by individuals. As a result, burrowing owls may occur on the project site or immediately surrounding lands.

2.3.4 San Joaquin Kit Fox (Federally Endangered, California Threatened)

The San Joaquin kit fox (SJKF) historically occupied the dry plains of the San Joaquin Valley from San Joaquin County to southern Kern County but has been extirpated from much of its historic range. Core SJKF populations are located in the natural lands of western Kern County, the Carrizo Plain Natural Area in San Luis Obispo County, and the Ciervo-Panoche Natural Area in western Fresno and eastern San Benito Counties (USFWS 1998). The kit fox prefers habitats of open or low vegetation with loose soils, including various types of grassland and scrub. It may also be found in urban settings and in areas adjacent to tilled or fallow fields. The SJKF requires underground dens to raise pups, regulate body temperature, and avoid predators.

Habitat for kit fox is absent to extremely marginal within the project site. Eightenn CNDDB recorded occurrences of this species are documented within a 10-mile radius of the project site. The most recent San Joaquin kit fox occurrence was in 2006, approximately 5 miles northwest of the project site within the City of Hanford. Currently, there are no extant kit fox populations known to occur in Kings County. No evidence of San Joaquin kit fox denning was found on the site during LOA's field survey. The site represents extremely marginal habitat for the kit fox due to its disturbed landscape and human activities. Moreover, the site is situated within a mosaic of agricultural lands that have been identified as low suitability for kit fox (Cypher et al. 2013), such that kit fox would be unlikely to occur in the project vicinity in the first place. At most, kit fox may, on rare occasions, pass through the site during dispersal movements.

2.4 NESTING BIRDS AND RAPTORS

There are very few trees or large bushes located on or within 250 ft of the project site, which limits the availability of nesting habitat for birds and there are no suitable nesting trees for

raptors on or within 500 ft of the project site. Despite the lack of trees and bushes, some avian species may still utilize the site for nesting. Disturbance tolerant ground nesters like Killdeer (*Charadrius vociferus*) could nest in the hardpacked earth within and adjacent to the project site and birds that build mud nests, like Cliff Swallows (*Petrochelidon pyrrhonota*), have the potential to nest in freestall barns in and adjacent to the project site.

2.5 WETLANDS AND OTHER JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the CDFW, and the California Regional Water Quality Control Board (RWQCB).

Potential jurisdictional waters and wetlands are absent from the project site. The nearest natural drainages are Guernsey Slough and Cross Creek. Guernsey Slough lies approximately 1.7 miles southeast of the project at the nearest point and Cross Creek lies approximately 1.7 miles east of the project site at the nearest point. Guernsey Slough's natural drainage features have been heavily altered or destroyed due to decades of agriculture and development. Cross Creek has maintained most of its natural features, though it too has been altered by agriculture and development.

3.0 RELEVANT GOALS, POLICIES, AND LAWS

3.1 KINGS COUNTY GENERAL PLAN DAIRY ELEMENT BIOLOGICAL RESOURCES SURVEY (POLICY DE 3.3A):

The Kings County General Plan contains a Dairy Element that requires environmental review of all new dairies or the expansion of an existing dairy. The environmental review requirements that pertain to biological resources are stated below.

> "The results of a Biological Resources Survey shall be made a part of the Technical Report submitted with each application to either establish a new dairy or expand an existing dairy. The survey of habitat for sensitive species and wetlands shall be conducted by a qualified wildlife biologist prior to initiation of grading for each dairy facility to confirm the presence or absence of any nesting activity at each location. If habitat for sensitive species or wetlands is found, appropriate measures shall be taken to avoid destruction of active dens or nests. An appropriate buffer zone shall be established around any active den or nest based on consultation with representatives of the California Department of Fish and Wildlife. Construction activities shall be restricted in this zone until the qualified biologist has determined that the young animals are no longer using the dens or nests. Passive relocation methods shall be used by the qualified biologist in the event that removal of any wildlife from the impact area is deemed necessary by a regulatory agency with appropriate jurisdiction."

3.2 THREATENED AND ENDANGERED SPECIES

In California, imperiled plants and animals may be afforded special legal protections under the California Endangered Species Act (CESA) and/or Federal Endangered Species Act (FESA). Species may be listed as "threatened" or "endangered" under one or both Acts, and/or as "rare" under CESA. Under both Acts, "endangered" means a species is in danger of extinction throughout all or a significant portion of its range, and "threatened" means a species is likely to become endangered within the foreseeable future. Under CESA, "rare" means a species may become endangered if their present environment worsens. Both Acts prohibit "take" of listed species, defined under CESA as "to hunt, pursue, catch, capture, or kill, or attempt to hunt,

pursue, catch, capture or kill" (California Fish and Game Code, Section 86), and more broadly defined under FESA to include "harm" (16 USC, Section 1532(19), 50 CFR, Section 17.3). The USFWS commonly interprets "take" to include the loss of habitat utilized by a listed species.

When state and federally listed species have the potential to be impacted by a project, the USFWS and CDFW must be included in the CEQA process. These agencies review the environmental document to determine the adequacy of its treatment of endangered species issues and to make project-specific recommendations for the protection of listed species. Projects that may result in the "take" of listed species must generally enter into consultation with the USFWS and/or CDFW pursuant to FESA and CESA, respectively. In some cases, incidental take authorization(s) from these agencies may be required before the project can be implemented.

3.3 CALIFORNIA FULLY PROTECTED SPECIES

The classification of certain animal species as "fully protected" was the State of California's initial effort in the 1960s, prior to the passage of the California Endangered Species Act, to identify and provide additional protection to those species that were rare or faced possible extinction. Following CESA enactment in 1970, many fully protected species were also listed as California threatened or endangered. The list of fully protected species are identified, and their protections stipulated, in California Fish and Game Code Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and fish (5515). Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take, except in conjunction with necessary scientific research and protection of livestock.

3.4 DESIGNATED CRITICAL HABITAT

The USFWS often designates areas of "critical habitat" when it lists species as threatened or endangered. Critical habitat is defined by section 3(5)(A) of the federal Endangered Species Act as "(i) The specific areas within the geographic area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection; and (ii) specific areas outside the geographic area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species."

The Act goes on to define "conservation" as "the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which listing under the Act is no longer necessary."

The designation of a specific area as critical habitat does not directly affect its ownership. Federal actions that result in destruction or adverse modification of critical habitat are, however, prohibited in the absence of prior consultation with the USFWS according to provisions of the act. Furthermore, recent appellate court cases require that federal actions affecting critical habitat promote the recovery of the listed species protected by the critical habitat designation.
The USFWS designates critical habitat for a species by identifying general areas likely to contain the species' "primary constituent elements," or physical or biological features of the landscape that the species needs to survive and reproduce. Although a unit of critical habitat for a particular species may be quite large, only those lands within the unit that contain the species' primary constituent elements are actually considered critical habitat by the USFWS.

3.5 MIGRATORY BIRDS

The Federal Migratory Bird Treaty Act (FMBTA: 16 USC 703-712) prohibits killing, possessing, or trading in any bird species covered in one of four international conventions to which the United States is a party, except in accordance with regulations prescribed by the Secretary of the Interior. The name of the act is misleading, as it actually covers almost all birds native to the United States, even those that are non-migratory. The FMBTA encompasses whole birds, parts of birds, and bird nests and eggs.

Native birds are also protected under California state law. The California Fish and Game Code makes it unlawful to take or possess any non-game bird covered by the FMBTA (Section 3513), as well as any other native non-game bird (Section 3800), even if incidental to lawful activities.

3.6 BIRDS OF PREY

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5), which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted

pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

3.7 NESTING BIRDS

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

3.8 HABITAT CONSERVATION PLANS AND NATURAL COMMUNITY CONSERVATION PLANS

Section 10 of the federal Endangered Species Act establishes a process by which non-federal projects can obtain authorization to incidentally take listed species, provided take is minimized and thoroughly mitigated. A Habitat Conservation Plan (HCP), developed by the project applicant in collaboration with the USFWS and/or NMFS, ensures that such minimization and mitigation will occur, and is a prerequisite to the issuance of a federal incidental take permit. Similarly, a Natural Community Conservation Plan (NCCP), developed by the project applicant in collaboration with CDFW, provides for the conservation of biodiversity within a project area, and permits limited incidental take of state-listed species.

3.9 WETLANDS AND OTHER "JURISDICTIONAL WATERS"

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). The CWA does not supply a definition for waters of the U.S., and that has been the subject of considerable debate since the CWA's passage in 1972. A variety of regulatory definitions have been promulgated by the two federal agencies responsible for implementing the CWA, the Environmental Protection Agency

(EPA) and USACE. These definitions have been interpreted, and in some cases, invalidated, by federal courts.

Waters of the U.S. are presently defined by the EPA and USACE's joint 2023 Revised Definition of 'Waters of the U.S.' Rule (2023 WOTUS Rule), with certain interpretive modifications imposed by the U.S. Supreme Court's May 25, 2023 decision in the case of *Sackett v. Environmental Protection Agency*. Generally speaking, these waters include:

- Waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.
- The territorial seas
- Interstate waters including interstate wetlands.
- Impoundments of waters otherwise defined as waters of the United States under the definition.
- Tributaries to other waters of the U.S. that are relatively permanent, standing or continuously flowing bodies of water
- Wetlands adjacent to other waters of the U.S. that have a continuous surface connection to those waters

The 2023 WOTUS Rule also defines a number of exclusions from the definition of waters of the U.S., many of which are longstanding exclusions from earlier regulatory regimes. These generally include:

- Waste treatment systems
- Prior converted cropland
- Ditches excavated wholly in and draining only dry land that do not carry a relatively permanent flow of water
- Certain artificial features, e.g. irrigation basins, swimming pools, borrow pits, and artificially irrigated areas
- Swales and erosional features characterized by low volume, infrequent, or short duration flow

All activities that involve the discharge of dredge or fill material into waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values.

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board (SWRCB) has regulatory authority to protect the water quality of all surface water and groundwater in the State of California. In practice, however, not all such waters are considered jurisdictional "waters of the State." Broadly, waters of the State include all waters of the U.S., all natural wetlands, certain artificial wetlands, and various other features. Nine RWQCBs, each corresponding to a different region of the state, regulate discharges of fill and pollutants into waters of the State through the issuance of various permits and orders. Discharges into waters of the State that are also waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining a Section 404 Clean Water Act permit. Discharges into waters of the State that are not also waters of the U.S. require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a water of the U.S. may require a NPDES permit.

CDFW has jurisdiction over the bed and bank of natural drainages and lakes according to provisions of Section 1601 and 1602 of the California Fish and Game Code. Activities that may substantially modify such waters through the diversion or obstruction of their natural flow, change or use of any material from their bed or bank, or the deposition of debris require a Notification of Lake or Streambed Alteration. If CDFW determines that the activity may adversely affect fish and wildlife resources, a Lake or Streambed Alteration Agreement will be

prepared. Such an agreement typically stipulates that certain measures will be implemented to protect the habitat values of the lake or drainage in question.

4.0 PROJECT IMPACTS

The following impact analysis assumes project-related disturbance to approximately 40 acres within the existing Sozinho Dairy #5 property, as shown in figure 2.

4.1 PROJECT IMPACTS TO SPECIAL STATUS SPECIES

Potential project impacts to each of the special status species identified as having the potential to occur in the project vicinity are discussed below, as well as measures to minimize potential impacts.

4.1.1 Special Status Plants

Impact: The project site and surrounding lands have experienced several decades of farming and dairy use and contain no suitable habitat for special status plant species. Special status plants have no appreciable potential to occur on site or to be affected by the project.

Mitigation: None warranted.

4.1.2 Swainson's Hawk

Impact: The project site does not contain any suitable nesting trees, however, there are many mature trees within a half-mile radius of the project site. The distance of these trees from the project site and the high level of human and vehicular activity associated with the surrounding dairy operations are such that, even if Swainson's hawks are nesting in any of the trees at the time of construction, they would be unlikely to distinguish project construction activities from existing ambient disturbance.

The loss of approximately 40-acres of marginal foraging habitat situated within a region with many square miles of similar to more suitable foraging habitat in the form of agricultural fields would not constitute a significant loss of Swainson's hawk foraging habitat or significantly impact regional populations of Swainson's hawks.

Mitigation:

***Mitigation Measure 4.1.4a* (*Temporal Avoidance*).** In order to avoid any potential impacts to nesting Swainson's hawks, construction activities will occur, where possible, outside of this species' nesting season, typically defined as March 1-September 15.

Mitigation Measure 4.1.4b (Preconstruction Surveys). If construction activities must occur between March 1 and September 15, then within 10 days prior to the start of construction, a qualified biologist will conduct preconstruction nest surveys for Swainson's hawks on and within ¼ mile of the work area. The survey will consist of inspecting all accessible, suitable trees of the survey area for the presence of nests and hawks.

Mitigation Measure 4.1.4c (Avoidance of Active Nests). Should any active Swainson's hawk nests be discovered within the survey area, an appropriate disturbance-free buffer will be established around the nest based on local conditions and agency guidelines. Disturbance-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until a qualified biologist has determined that the young have fledged and are capable of foraging independently.

4.1.3 Burrowing Owl

Impact: Burrows suitably sized for burrowing owl nesting and roosting were observed on the project site. Though much of the project site is unsuitable for burrowing owls due to the tall, dense nature of the wheat field, the abundance of burrows on and adjacent to sparsely vegetated lands on and within the vicinity of the project site provide potential habitat for this species. Therefore, it is possible that burrowing owls use the project site for foraging, nesting, or roosting on occasion, though no signs of burrowing owl were observed. These small raptors are protected under the Migratory Bird Treaty Act, California Fish and Game Code, and the California Endangered Species Act. Project-related grading activities have the potential to bury owls that may retreat to burrows ahead of heavy equipment. Mortality of individual birds would be a violation of state and federal law.

Mitigation. Prior to ground disturbance activities, the following measure(s) will be implemented as necessary:

Mitigation Measure 4.1.5a (Take Avoidance Survey). A take avoidance survey for burrowing owls will be conducted by a qualified biologist no less than 14 days prior to the start of construction. This take avoidance survey will be conducted according to methods described in the Staff Report on Burrowing Owl Mitigation (CDFG 2012). The survey area will include all potential roosting and nesting habitat on and within 200 meters of project impact areas, where accessible.

Mitigation Measure 4.1.5b (Avoidance of Active Nests). If pre-construction surveys are undertaken during the breeding season (February 1 through August 31) and active nest burrows are located within or near construction zones, a construction-free buffer of 200 meters will be established around all active owl nests. If a smaller buffer is required for the project to move forward, a qualified biologist will determine if a smaller buffer can be implemented that ensures the owls are adequately protected from disturbance. Factors such as existing levels of disturbance, proposed levels of disturbance, and topography or structures that may shield the owls from disturbance will be taken into consideration in evaluating if a smaller buffer is feasible. Any work conducted within 200 meters of an active nest, in accordance with a smaller buffer as determined by a biologist, will be monitored by a biologist until they have observed the owl(s) for at least three days with no signs of disturbance or distress. The buffer areas will be enclosed with temporary fencing or flagging, and construction equipment and workers will not enter the enclosed setback areas. Buffers will remain in place for the duration of the breeding season. If the owls are located such that the project cannot be completed without disturbing them, then the California Department of Fish and Game will be consulted to determine if an incidental take permit is necessary and develop a plan to relocate the owl(s) after the breeding season has ended (i.e. once all young have left the nest).

Implementation of the above measures will minimize potential project impacts to burrowing owl and will ensure compliance with federal and state laws protecting this species.

4.1.4 San Joaquin Kit Fox

Impact: Habitat for the San Joaquin kit fox is absent to extremely marginal within the project site due to dairy activity, lack of denning habitat, and poor foraging opportunity. No burrows suitable for kit fox denning were observed on or adjacent to the site, and no evidence of San Joaquin kit fox use of the site was found during LOA's field survey. At most, kit fox may, on rare occasions, pass through the site during dispersal movements. Therefore, proposed project activities are unlikely to result in any impacts to San Joaquin kit fox.

Mitigation: No mitigation is warranted.

4.2 IMPACTS TO NESTING BIRDS AND RAPTORS INCLUDING TRICOLORED BLACKBIRD

Impact: The project site provides nesting habitat for a number of resident and migratory bird species including tricolored blackbird. Even the most disturbed areas of the project site could be used by disturbance-tolerant birds. Nearly all native avian species are protected by state and federal laws previously described in Sections 3.5-3.7. Birds nesting within or immediately

adjacent to the project site at the time of project construction have the potential to be injured or killed by project activities. In addition, project activities could disturb birds nesting within or adjacent to work areas such that they would abandon their nests. Project activities that adversely affect the nesting success of birds or result in the mortality of individual birds would violate state and federal laws.

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

> ***Mitigation Measure 4.2a (Avoidance).*** In order to avoid impacts to native nesting birds, including the tricolored blackbird, the project will be constructed, if feasible, outside the nesting season, or between September 1st and January 31st.
>
> ***Mitigation Measure 4.2b (Preconstruction Surveys).*** If project activities must occur during the nesting season (February 1-August 31), a qualified biologist will conduct preconstruction surveys for active raptor and native bird nests within 15 days prior to the start of these activities. The survey will include the proposed work area(s) for that particular phase of work and surrounding lands within 250 feet, where accessible, for all nesting birds. If no active nests are found within the survey area, no further mitigation is required.
>
> ***Mitigation Measure 4.2c (Establish Buffers).*** Should any active nests be discovered in or near proposed work areas, the biologist will determine appropriate construction setback distances based on applicable CDFW guidelines and/or the biology of the affected species. Construction-free buffers will be identified on the ground with flagging, fencing, or by other easily visible means, and will be maintained until the biologist has determined that the young have fledged.

Implementation of the above measures will minimize potential project impacts to nesting native birds and will ensure compliance with state and federal laws protecting these species.

4.3 IMPACTS TO WETLANDS AND OTHER JURISDICTIONAL WATERS

Impact: Potential jurisdictional waters and wetlands are absent from the project site, and the project will not impact any such resources.

Mitigation: None warranted.

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APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

APPENDIX A: VASCULAR PLANTS OF THE PROJECT SITE

The plant species listed below were observed on the Sozinho #5 Dairy project site during a survey conducted by Live Oak Associates, Inc. on May 17, 2024. The U.S. Fish and Wildlife Service wetland indicator status of each plant has been shown following its common name.

OBL - Obligate
FACW - Facultative Wetland
FAC - Facultative
FACU - Facultative Upland
UPL - Upland
+/- - Higher/lower end of category
NR - No review
NA - No agreement
NI - No investigation

AMARANTHACEAE – Amaranth Family		
Amaranthus blitoides	Mat amaranth	FACU
Amaranthus palmeri	Palmer's pigweed	FACU
Amaranthus retroflexus	Red-root amaranth	FACU
ASTERACEAE – Daisy Family		
Erigeron bonariensis	Flax-leaf fleabane	FACU
Lactuca serriola	Prickly lettuce	FACU
Centromadia pungens	Common spikeweed	FAC
BRASSICACEAE – Mustard Family		
Lepidium didymum	Lesser Swinecress	UPL
Sisymbrium irio	London Rocket	UPL
CHENOPODIACEAE – Goosefoot Family		
Bassia hyssopifolia	Five-Hook Bassia	FACU
FABACEAE – Legume Family		
Melilotus indicus	Annual yellow sweet clover	FACU
MALVACEAE – Mallow Family		
Malva parviflora	Cheeseweed	UPL
POACEAE – Grass Family		
Digitaria spp.	Crabgrass	FACU
Echinochloa colona	Jungle rice	FAC
Echinochloa crus-galli	Barnyard grass	FACU
Hordeum jubatum	Foxtail barley	FAC
Leptochloa fascicularis	Bearded sprangletop	
Triticum aestivum	Cultivated wheat	UPL
POLYGONACEAE – Buckwheat Family		
Polygonum aviculare	Prostrate knotweed	FAC
ZYGOPHYLLACEAE – Caltrop Family		
Tribulus terrestris	Puncture vine	UPL

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

APPENDIX B: TERRESTRIAL VERTEBRATE SPECIES THAT POTENTIALLY OCCUR ON THE PROJECT SITE

The species listed below are those that may reasonably be expected to use the habitats of the project site routinely from time to time. The list was not intended to include birds that are vagrants or occasional transients. Terrestrial vertebrate species observed in or adjacent to the project site on May 17, 2024 have been noted with an asterisk.

CLASS: REPTILIA (Reptiles)
ORDER: SQUAMATA (Lizards and Snakes)
SUBORDER: SAURIA (Lizards)
FAMILY: PHRYNOSOMATIDAE
Side-blotched Lizard (*Uta stansburiana*)
SUBORDER: SERPENTES (Snakes)
FAMILY: COLUBRIDAE (Colubrids)
Gopher Snake (*Pituophis melanoleucus*)
Common Kingsnake (*Lampropeltis getulus*)

CLASS: AVES (Birds)
ORDER: ANSERIFORMES (Waterfowl)
FAMILY: ANATIDAE (Ducks)
Mallard (*Anas platyrhynchos*)
ORDER: CICONIIFORMES (Herons, Storks, Ibises and Relatives)
FAMILY: CATHARTIDAE (American Vultures)
Turkey Vulture (*Cathartes aura*)
FAMILY: THRESKIORNITHIDAE (Ibises and Spoonbills)
White-faced Ibis (*Plegadis chihi*)
ORDER: FALCONIFORMES (Vultures, Hawks, and Falcons)
FAMILY: ACCIPITRIDAE (Hawks, Old World Vultures, and Harriers)
Red-tailed Hawk (*Buteo jamaicensis*)
*Swainson's Hawk (*Buteo swainsoni*)
FAMILY: FALCONIDAE (Caracaras and Falcons)
American Kestrel (*Falco sparverius*)
ORDER: CHARADRIIFORMES (Shorebirds, Gulls, and relatives)
FAMILY: RECURVIROSTRIDAE (Avocets and Stilts)
*Black-necked stilt (*Himantopus mexicanus*)
FAMILY: CHARADRIIDAE (Plovers and relatives)
*****Killdeer (*Charadrius vociferus*)
FAMILY: SCOLOPACIDAE (Sandpipers, Woodcocks, Curlews, and Snipes)
*****Whimbrel (*Numenius phaeopus*)
ORDER: COLUMBIFORMES (Pigeons and Doves)
FAMILY: COLUMBIDAE (Pigeons and Doves)
*Rock Pigeon (*Columba livia*)
*Eurasian Collared Dove (*Streptopelia decaocto*)
*Mourning Dove (*Zenaida macroura*)

ORDER: STRIGIFORMES (Owls)
FAMILY: TYTONIDAE (Barn Owls)
Common Barn Owl (*Tyto alba*)
FAMILY: STRIGIDAE (Typical Owls)
Burrowing Owl (*Athene cunicularia*)
ORDER: APODIFORMES (Swifts and Hummingbirds)
FAMILY: TROCHILIDAE (Hummingbirds)
Anna's Hummingbird (*Calypte anna*)
Rufous Hummingbird (*Selasphorus rufus*)
ORDER: PASSERIFORMES (Perching Birds)
FAMILY: TYRANNIDAE (Tyrant Flycatchers)
*Black Phoebe (*Sayornis nigricans*)
Say's Phoebe (*Sayornis saya*)
Western Kingbird (*Tyrannus verticalis*)
FAMILY: CORVIDAE (Jays, Magpies, and Crows)
California Scrub Jay (*Aphelocoma californica*)
*American Crow (*Corvus brachyrhynchos*)
Common Raven (*Corvus corax*)
FAMILY: ALAUDIDAE (Larks)
Horned Lark (*Eremophila alpestris*)
FAMILY: HIRUNDINIDAE (Swallows)
Cliff Swallow (*Hirundo pyrrhonota*)
Barn Swallow (*Hirundo rustica*)
FAMILY: TURDIDAE
American Robin (*Turdus migratorius*)
FAMILY: MIMIDAE (Mockingbirds and Thrashers)
Northern Mockingbird (*Mimus polyglottos*)
FAMILY: STURNIDAE (Starlings)
*European Starling (*Sturnus vulgaris*)
FAMILY: MOTACILLIDAE (Wagtails and Pipits)
American Pipit (*Anthus rubescens*)
FAMILY: PARULIDAE (Wood Warblers and Relatives)
Yellow-rumped Warbler (*Dendroica coronata*)
FAMILY: EMBERIZIDAE (Wood Warblers, Sparrows, Blackbirds, and relatives)
Dark-eyed Junco (*Junco hyemalis*)
Lincoln's Sparrow (*Melospiza lincolnii*)
Savannah Sparrow (*Passerculus sandwichensis*)
White-crowned Sparrow (*Zonotrichia leucophrys*)
FAMILY: ICTERIDAE (Blackbirds, Orioles and Allies)
*Red-winged Blackbird (*Agelaius phoeniceus*)
Tricolored Blackbird (*Agelaius tricolor*)
Western Meadowlark (*Sturnella neglecta*)
*Brewer's Blackbird (*Euphagus cyanocephalus*)
Brown-headed Cowbird (*Molothrus ater*)
FAMILY: FRIGILLIDAE (Finches)
Lesser Goldfinch (*Carduelis psaltria*)

American Goldfinch (*Spinus tristis*)
House Finch (*Carpodacus mexicanus*)

FAMILY: PASSERIDAE (Old World Sparrows)

*House Sparrow (*Passer domesticus*)

CLASS: MAMMALIA (Mammals)

ORDER: RODENTIA (Rodents)

FAMILY: SCIURIDAE (Squirrels, Chipmunks, and Marmots)

*California Ground Squirrel (*Otospermophilus beecheyi*)

FAMILY: GEOMYIDAE (Pocket Gophers)

*Botta's Pocket Gopher (*Thomomys bottae*)

FAMILY: MURIDAE (Old World Rats and Mice)

Western Harvest Mouse (*Reithrodontomys megalotis*)
Deer Mouse (*Peromyscus maniculatus*)
Norway Rat (*Rattus norvegicus*)
House Mouse (*Mus musculus*)
California Vole (*Microtus californicus*)

ORDER: LAGOMORPHA (Rabbits, Hares, and Pikas)

FAMILY: LEPORIDAE (Rabbits and Hares)

Brush Rabbit (*Sylvilagus bachmani*)
Desert Cottontail (*Sylvilagus audubonii*)

ORDER: CHIROPTERA (Bats)

FAMILY: PHYLLOSTOMIDAE (Leaf-nosed Bats)

Southern Long-nosed Bat (*Leptonycteris curasoae*)

FAMILY: VESPERTILIONIDAE (Evening Bats)

Yuma Myotis (*Myotis yumanensis*)
California Myotis (*Myotis californicus)*
Western Pipistrelle (*Pipistrellus hesperus*)
Big Brown Bat (*Eptesicus fuscus*)

FAMILY: MOLOSSIDAE (Free-tailed Bat)

Brazilian Free-tailed Bat (*Tadarida brasiliensis*)

ORDER: CARNIVORA (Carnivores)

FAMILY: CANIDAE (Foxes, Wolves, and relatives)

Coyote (*Canis latrans*)
Domestic Dog (*Canis lupus familiaris*)

FAMILY: FELIDAE (Felines)

***Feral Cat (*Felis catus*)

FAMILY: PROCYONIDAE (Raccoons and relatives)

Raccoon (*Procyon lotor*)

FAMILY: MEPHITIDAE (Skunks)

Striped Skunk (*Mephitis mephitis*)

ORDER: ARTIODACTYLA (Hoofed Mammals)

FAMILY: BOVIDAE (Cloven-hoofed ruminants)

***Domestic Cattle (*Bos taurus*)

APPENDIX C: SELECTED SITE PHOTOGRAPHS



Photo 1: Looking west at the wheat field in different stages of harvest. Proposed location of Biofiltro wastewater processing beds.



Photo 2: Example of burrows on edge of wheat field. Looking southwest from eastern edge.



Photo 3: Looking southeast from the northwest portion of the wheat field. Large, mature trees can be seen in the background. Proposed location of Biofiltro wastewater processing beds and storage area.



Photo 4: Looking northwest at wastewater processing beds, the proposed location for two earthen berms. Wheat field shown on the left and freestall barn with cows on the right.



Photo 5: Looking west inside freestall barn where a pipeline will be constructed.



Photo 6: Looking west at proposed location of stacking pad and mechanical separator.



Photos 7: Example of ground squirrel burrows on the north edge of the proposed stacking pad and mechanical separator location.



Photo 8: Looking west at proposed location of rerouted vacuum track.

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Laton (3611946) OR Burris Park (3611945) OR Traver (3611944) OR Hanford (3611936) OR Remnoy (3611935) OR Goshen (3611934) OR Guernsey (3611926) OR Waukena (3611925) OR Paige (3611924))

Map Index Number: 44980
EO Index: 44980
Key Quad: Burris Park (3611945)
Element Code: AAAAA01181
Occurrence Number: 431
Occurrence Last Updated: 2009-06-18

Scientific Name: *Ambystoma californiense pop. 1*
Common Name: California tiger salamander - central California DPS

Listing Status: **Federal:** Threatened
State: Threatened
Rare Plant Rank:
Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3T3
State: S3

General Habitat:

LIVES IN VACANT OR MAMMAL-OCCUPIED BURROWS THROUGHOUT MOST OF THE YEAR; IN GRASSLAND, SAVANNA, OR OPEN WOODLAND HABITATS.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, AND VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed: 1999-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-03-01
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, 1.3 MILES SOUTH OF SETTLERS DITCH, NW OF VSALIA.

Detailed Location:

Ecological:

1999: NON-NTIVE ANNUAL GRASSLAND W/VERNAL POOLS; GRASSLAND TO S & E, FARMLAND TO N & W. SCAPHIOPUS HAMMONDI, BRANCHINETA LYNCHI, LEPIDURUS PACKARDI, & ATHENE CUNICULARIA FOUND IN VICINITY. 2007 AERIAL PHOTO SHOWS AREAS TO S & E ARE NOW AG.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND.

General:

SEVERAL EGG MASSES OBSERVED ON 1 MAR 1999.

PLSS: T18S, R23E, Sec. 08, W (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4028791 E274936
Latitude/Longitude: 36.37793 / -119.50895
Elevation (feet): 260

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HAL99F0009 HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR AMBYSTOMA (TIGRINUM) CALIFORNIENSE 1999-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	46426	**EO Index:**	46426
Key Quad:	Burris Park (3611945)	**Element Code:**	AAAAA01181
Occurrence Number:	503	**Occurrence Last Updated:**	2017-11-15

Scientific Name: *Ambystoma californiense pop. 1*

Common Name: California tiger salamander - central California DPS

Listing Status: **Federal:** Threatened

State: Threatened

Rare Plant Rank:

Other Lists: CDFW_WL-Watch List
IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G2G3T3

State: S3

General Habitat:

LIVES IN VACANT OR MAMMAL-OCCUPIED BURROWS THROUGHOUT MOST OF THE YEAR; IN GRASSLAND, SAVANNA, OR OPEN WOODLAND HABITATS.

Micro Habitat:

NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS, AND VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING.

Last Date Observed:	XXXX-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	XXXX-XX-XX	**Occurrence Rank:**	None
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Extirpated		

Location:

LOCATION GIVEN ONLY AS KINGS RIVER BELOW KINGSBURG IN KINGS COUNTY.

Detailed Location:

Ecological:

Threats:

General:

FOUND SOMETIME BEFORE 1925. JENNINGS CONSIDERS THIS SITE EXTIRPATED.

PLSS:	T17S, R22E, Sec. 11 (M)	**Accuracy:**	1 mile	**Area (acres):**	0
UTM:	Zone-11 N4039456 E271818	**Latitude/Longitude:**	36.47325 / -119.54682	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Kings	Burris Park (3611945)

Sources:

JEN01U0001	JENNINGS, M. (RANA RESOURCES) - LOCALITY RECORDS FOR AMBYSTOMA CALIFORNIENSE IN CALIFORNIA, 1992, JENNINGS & HAYES SPECIAL CONCERN HERP DATABASE WITH LOCATIONS MARKED AS PRESENT OR EXTIRPATED 2001-11-07
JEN94U0001	JENNINGS, M. & M. HAYES - TABLE OF DATA FOR TIGER SALAMANDER USED IN THE REPORT "REPTILE AND AMPHIBIAN SPECIES OF SPECIAL CONCERN IN CALIFORNIA" 1994-XX-XX
STO25A0001	STORER, T. (MUSEUM OF VERTEBRATE ZOOLOGY) - A SYNOPSIS OF THE AMPHIBIA OF CALIFORNIA. UNIVERSITY OF CALIFORNIA PUBLICATIONS IN ZOOLOGY 27: 1-342. 1925-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44979
EO Index: 44979
Key Quad: Burris Park (3611945)
Element Code: AAABF02020
Occurrence Number: 195
Occurrence Last Updated: 2017-10-06

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, ABOUT 1 MILE SOUTH OF SETTLERS DITCH, NW OF VISALIA.

Detailed Location:

2016: DETECTED IN POOL 25 AT (36.38055, -119.50874). MAPPED TO INCLUDE GIVEN DETECTION LOCATIONS.

Ecological:

NON-NATIVE ANNUAL GRASSLAND W/ VERNAL POOLS (MAINLY ALKALINE POOLS); GRASSLAND TO THE S & E, FARMLAND TO THE N & W. AREA IS GRAZED. AMBYSTOMA CALIFORNIENSE, BRANCHINETA LYNCHI, LEPIDURUS PACKARDI, & ATHENE CUNICULARIA FOUND IN THE VICINITY.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (1999).

General:

MANY TADPOLES OBSERVED IN 3 SEPARATE POOLS ON 1 MAR 1999. PAIR IN AMPLEXUS OBSERVED ON 6 MAR 2016. TADPOLES FOUND IN 10 POOLS THROUGHOUT PROPERTY IN 2017; 1 MAPPED HERE.

PLSS: T18S, R23E, Sec. 8, W (M)
Accuracy: specific area
Area (acres): 37
UTM: Zone-11 N4029177 E274977
Latitude/Longitude: 36.38141 / -119.50862
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HAL99F0008	HALSTEAD, J. & P. HALSTEAD - FIELD SURVEY FORM FOR SPEA HAMMONDII 1999-03-01
HEL16F0006	HELM, B. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	55262	**EO Index:**	55262
Key Quad:	Goshen (3611934)	**Element Code:**	AAABF02020
Occurrence Number:	288	**Occurrence Last Updated:**	2020-02-20

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2004-04-22	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2004-04-22	**Occurrence Rank:**	Good
Owner/Manager:	PVT-JACUZZI PROPERTY	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.3 MILE NNW OF THE INTERSECTION OF ROAD J32 AND ROAD J19, ESE OF GOSHEN.

Detailed Location:

Ecological:

HABITAT CONSISTS OF VERNAL POOLS, WITH TYPICAL VERNAL POOL PLANTS, SURROUNDED BY NON-NATIVE ANNUAL GRASSLAND DOMINATED BY TARWEED, WILD RYE, RIP-GUT BROME, FIDDLENECK, AND STINGING NETTLE. OVERALL TOPOGRAPHY FLAT.

Threats:

THREATENED BY FUTURE DEVELOPMENT.

General:

12 JUVENILES OBSERVED ON 19 APR 2004. ADULT SPADEFOOT REMAINS FOUND AT NEARBY BURROWING OWL BURROWS BETWEEN 19 AND 22 APR 2004.

PLSS:	T18S, R24E, Sec. 20, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4025020 E285001	**Latitude/Longitude:**	36.34626 / -119.39580	**Elevation (feet):**	290

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

CLA04F0003	CLARK, H. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2004-04-19
CLA08A0001	CLARK, H, - NATURAL HISTORY NOTES: SPEA HAMMONDII (WESTERN SPADEFOOT). PREDATION AND USE AS BURROW DECORATIONS. HERPETOLOGICAL REVIEW 39(1):80-81. 2008-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86230	**EO Index:**	87272
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	428	**Occurrence Last Updated:**	2012-06-29

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2011-05-16	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-16	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST EAST OF HWY 99 ON THE NORTH SIDE OF CROSS CREEK, ABOUT 3 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 1, 3, 4, 10, AND 11. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS:	T17S, R23E, Sec. 35, NW (M)	**Accuracy:**	non-specific area	**Area (acres):**	83
UTM:	Zone-11 N4032576 E279833	**Latitude/Longitude:**	36.41315 / -119.45547	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86232
EO Index: 87274
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 429
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST EAST OF HWY 99 ON EITHER SIDE OF CROSS CREEK, ABOUT 3.7 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 6, 7, AND 8. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, SW (M)
Accuracy: non-specific area
Area (acres): 31
UTM: Zone-11 N4031856 E279790
Latitude/Longitude: 36.40665 / -119.45575
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86233
EO Index: 87275
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 430
Occurrence Last Updated: 2012-07-02

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST EAST OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, ABOUT 4 MILES SSE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #51. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, S (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4031646 E280508
Latitude/Longitude: 36.40493 / -119.44769
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86234
EO Index: 87276
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 431
Occurrence Last Updated: 2012-07-09

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1 MILE EAST OF HWY 99 ON THE NORTH SIDE OF CROSS CREEK, AND ABOUT 3.75 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 22 AND 23. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 35, NE (M)
Accuracy: non-specific area
Area (acres): 24
UTM: Zone-11 N4032513 E281022
Latitude/Longitude: 36.41285 / -119.44221
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86235
EO Index: 87277
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 432
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1 MILE EAST OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, AND ABOUT 4 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #34. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R23E, Sec. 36, NW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4032017 E281465
Latitude/Longitude: 36.40849 / -119.43713
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86236
EO Index: 87278
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 433
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 2.25 MILES UPSTREAM (NE) OF HWY 99 ON THE SOUTH SIDE OF CROSS CREEK, AND ABOUT 4.4 MILES SE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOL #41. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE & BUTEO SWAINSONI NEARBY.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R24E, Sec. 30, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4033309 E282985
Latitude/Longitude: 36.42047 / -119.42055
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86237
EO Index: 87279
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 434
Occurrence Last Updated: 2012-06-29

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2011-05-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-05-24
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 3 MILES UPSTREAM (NE) OF HWY 99 ALONG CROSS CREEK, AND ABOUT 4.6 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). VERNAL POOLS 48 & 55. 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THE 1,090 ACRE SITE WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS ON SITE DURING DIP-NET SURVEYS.

PLSS: T17S, R24E, Sec. 30, NE (M)
Accuracy: non-specific area
Area (acres): 37
UTM: Zone-11 N4034140 E283825
Latitude/Longitude: 36.42814 / -119.41143
Elevation (feet): 280

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL11F0018 HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27

HAL11R0001 HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86238	**EO Index:**	87280
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	435	**Occurrence Last Updated:**	2019-03-18

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2018-04-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2018-04-09	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 4 MILES UPSTREAM (NE) OF HWY 99 ALONG CROSS CREEK (COTTONWOOD CREEK), AND ABOUT 5.2 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO APPENDIX H AERIAL MAP (GEOREFERENCED). REFERENCE VERNAL POOLS A & F ON ADJACENT LAND NEXT TO 1,090 ACRE SITE ALONG CROSS CREEK DRAINAGE EXTENDING NE OF HWY 99 FOR ABOUT 3 MILES.

Ecological:

NON-NATIVE GRASSLANDS USED FOR GRAZING. THIS SITE ALSO APPEARS TO HAVE BEEN DISKED (JUN 2011 AERIAL). LEPIDURUS PACKARDI ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

19 TOTAL INDIVIDUAL TADPOLES WERE CAPTURED FROM 17 VERNAL POOLS BETWEEN THIS REFERENCE SITE AND THE NEIGHBORING 1090 ACRE SITE IN 2011. 14 JUVENILES OBSERVED ON 15 APR 2017. EGGS AND LARVAE OBSERVED IN 4 POOLS ON 27 MAR & 9 APR 2018.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	92
UTM:	Zone-11 N4034751 E284751	**Latitude/Longitude:**	36.43386 / -119.40128	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

ALV17D0001	ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20
HAL11F0018	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2011-04-27
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX
OBR18F0008	O'BRIEN, S. (HELM BIOLOGICAL CONSULTING) - FIELD SURVEY FORM FOR SPEA HAMMONDII 2018-04-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A6746
EO Index: 108515
Key Quad: Traver (3611944)
Element Code: AAABF02020
Occurrence Number: 472
Occurrence Last Updated: 2019-03-14

Scientific Name: *Spea hammondii*
Common Name: western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G2G3
State: S3S4
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF CROSS CREEK ABOUT 1.6 MI NW OF HWY 99 AT AVE 328 & 1.2-1.5 MI SSE OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

16 LARVAE DETECTED ON 30 JAN 2017. LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 3 MAPPED HERE.

PLSS: T17S, R23E, Sec. 34, S (M)
Accuracy: specific area
Area (acres): 23
UTM: Zone-11 N4031241 E278955
Latitude/Longitude: 36.40092 / -119.46489
Elevation (feet): 271

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

ALV17D0001 ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

OBR17F0006 O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6747	**EO Index:**	108517
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	473	**Occurrence Last Updated:**	2017-10-12

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NW SIDE OF CROSS CREEK, ABOUT 1.6 MILES NW OF HWY 99 AT AVE 328 & 1.9 MI SSE OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 3, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030271 E278276	**Latitude/Longitude:**	36.39203 / -119.47218	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6749	**EO Index:**	108518
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	474	**Occurrence Last Updated:**	2017-10-12

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened **Rare Plant Rank:**

State: None **Other Lists:** BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3

State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

FROM 2.0-2.4 MI NW OF HWY 99 AT AVE 328, 1.3-1.4 MI SSW OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NE (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030926 E277801	**Latitude/Longitude:**	36.39782 / -119.47766	**Elevation (feet):**	269

County Summary:	**Quad Summary:**
Kings, Tulare	Traver (3611944)

Sources:

HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6750	**EO Index:**	108519
Key Quad:	Traver (3611944)	**Element Code:**	AAABF02020
Occurrence Number:	475	**Occurrence Last Updated:**	2019-02-21

Scientific Name: *Spea hammondii* **Common Name:** western spadefoot

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S3S4

General Habitat:

OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.

Micro Habitat:

VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST N OF CROSS CREEK, FROM 2.5-2.6 MI NW OF HWY 99 AT AVE 328, 1.7 MI SW OF AVE 352 AT RD 44, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAP AND COORDINATES.

Ecological:

ANNUAL GRASSLANDS WITH VERNAL POOLS. CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

APPROXIMATELY 81 LARVAE DETECTED ON 30 JAN 2017. LARVAE DETECTED IN 10 POOLS THROUGHOUT PROPERTY DURING 2017 SURVEYS; 2 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4030870 E276767	**Latitude/Longitude:**	36.39708 / -119.48916	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

ALV17D0001	ALVAREZ, J. (THE WILDLIFE PROJECT) - EXCEL TABLE OF SPECIAL STATUS SPECIES, 2014-2017 [SC-000040] 2017-01-20
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR17F0006	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR SPEA HAMMONDII 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	22682	**EO Index:**	8315
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	439	**Occurrence Last Updated:**	2012-10-24

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1994-06-13	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1994-06-13	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

CAMERON CREEK, E OF ROAD 20, ABOUT 1 MILE WSW OF WAUKENA.

Detailed Location:

DFG SWHA #TU004. 1991 NEST TREE WAS ON THE NORTH BANK OF THE CREEK NEAR AN IRRIGATION STORAGE RESERVOIR.

Ecological:

1991 NEST TREE WAS A LARGE EUCALYPTUS. SURROUNDING LAND USES INCLUDED ROW CROPS AND DAIRIES.

Threats:

General:

A PAIR OF BIRDS NESTED AT THIS SITE IN 1991. 2 ADULTS OBS, 2 YOUNG FLEDGED FROM THIS SITE 13 JUN 1994.

PLSS:	T21S, R23E, Sec. 06, NE (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4001801 E272656	**Latitude/Longitude:**	36.13430 / -119.52650	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX
HAN91F0001	HANSEN, R. & G. PRESLEY - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1991-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 22037
EO Index: 8313
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 440
Occurrence Last Updated: 1999-12-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1990-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1990-XX-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

EAST SIDE OF HWY 137, 0.6 MILE NORTH OF PAIGE ROAD, 3 MILES NE OF WAUKENA.

Detailed Location:

NEST TREE IS LOCATED JUST NORTH OF THE DRIVEWAY TO THE SOUSA DAIRY. SWHA'S OBSERVED (INCLUDING ONE DEAD ADULT) SOUTH OF THIS NEST SITE IN 1999, BUT NO NESTING WAS OBSERVED.

Ecological:

NEST TREE IS ONE OF TWO EUCALYPTUS TREES JUST EAST OF THE ROADWAY; SURROUNDING HABITAT CONSISTS ALMOST ENTIRELY OF ROW CROPS AND DAIRIES.

Threats:

General:

BIRDS NESTED HERE ANNUALLY FROM 1982-1990; NESTING SUCCESS UNKNOWN.

PLSS: T20S, R23E, Sec. 16, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4007834 E275868
Latitude/Longitude: 36.18939 / -119.49256
Elevation (feet): 240

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

HAN90F0001 HANSEN, R. & G. PRESLEY - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1990-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42284
EO Index: 42284
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 792
Occurrence Last Updated: 2000-01-27

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1994-06-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-06-27
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

0.5 MILE WEST OF COUNTY ROAD 60 (BUENA VISTA AVENUE) AND SOUTH OF PAIGE ROAD, 5 MILES SW OF TULARE.

Detailed Location:

NEST TREE IS LOCATED BEHIND SOME RANCH BUILDINGS.

Ecological:

NEST TREE IS A LARGE EUCALYPTUS.

Threats:

General:

DFG SWHA #TU006. 2 ADULTS OBSERVED AT THE NEST ON 27 JUN 1994.

PLSS: T20S, R23E, Sec. 23, NE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4006394 E279878
Latitude/Longitude: 36.17734 / -119.44760
Elevation (feet): 245

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DFG94U0003 DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42285
EO Index: 42285
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 793
Occurrence Last Updated: 2013-09-13

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-05-21
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-05-21
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

E SIDE OF HWY 137, ABOUT 0.2 MI S OF AVE 204, 1.5 MI NE OF WAUKENA, 4.4 MI WSW OF PAIGE.

Detailed Location:

DFG SWHA #TU008. SITE IS LOCATED AT THE ENTRANCE TO THE MACHADO DAIRY. SOUTHERNMOST OF THE 3 EUCALYPTUS TREES WAS THE NEST TREE IN 1994. SECOND TREE NORTH OF THE ENTRANCE WAS THE NEST TREE IN 2000 AND 2008.

Ecological:

NEST TREE WAS A EUCALYPTUS SURROUNDED BY DAIRIES AND AGRICULTURE.

Threats:

General:

2 ADULTS & 2 JUVENILES 14 JUL 1994. 2 AD, NO NEST OBS, 1999. 1 AD IN NEST 21 APR; 1 SOARING, 1 FEEDING YOUNG/EATING IN NEST 22 MAY; 1 YOUNG IN NEST, 1 AD NEARBY 20 JUN 2000. PAIR OBS, NESTING UNCONFIRMED 2003. INCUBATION ON 21 MAY 2008.

PLSS: T20S, R23E, Sec. 28, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4004168 E275769
Latitude/Longitude: 36.15634 / -119.49261
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

BRO00F0013	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-05-22
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX
BRO99F0009	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1999-04-18
CON08F0010	CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-05-21
DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 42287
EO Index: 42287
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 795
Occurrence Last Updated: 2000-01-27

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 1994-06-13
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-06-13
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG BATES SLOUGH, 0.3 MILE NORTH OF ROAD 184 (OCTOL AVENUE), 7 MILES SW OF TULARE.

Detailed Location:

Ecological:

NEST TREE IS A MEDIUM-SIZED VALLEY OAK.

Threats:

General:

DFG SWHA #TU007. 2 ADULTS AND 1 JUVENILE OBSERVED AT THE NEST ON 13 JUN 1994.

PLSS: T21S, R23E, Sec. 02, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4000821 E278598
Latitude/Longitude: 36.12685 / -119.46025
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DFG94U0003 DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43329	**EO Index:**	43329
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	827	**Occurrence Last Updated:**	2013-09-13

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2010-06-04	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2010-06-04	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF 10 1/2 AVE, UP TO 0.4 MI N OF NEVADA AVE, ABOUT 3 MI N OF HELM CORNER, 7.5 MI W OF WAUKENA.

Detailed Location:

MAPPED TO DESCRIPTION & COORDINATES GIVEN FOR 2000 NEST SITE, ALONG 10 1/2 AVE ABOUT 0.4 MI N OF NEVADA AVE; & 2010 NEST SITE NEAR THE INTERSECTION OF 10 1/2 AVE & NEVADA AVE. 2002-03 NEST IN VICINITY OF 2010 SITE.

Ecological:

NEST TREE WAS A EUCALYPTUS IN 2000 AND 2010. 2002-2003 NEST IN EUCALYPTUS IN FARMYARD. AREA SURROUNDED BY ROW CROP AGRICULTURE, INCLUDING SEVERAL ALFALFA FIELDS.

Threats:

General:

2 ADULTS OBSERVED AT SITE FOR 2 WEEKS IN JUL 2000 AT VARIOUS TIMES OF DAY; SENTINEL BEHAVIOR SUGGESTED, NESTING PRESUMED BUT NO NEST FOUND. ACTIVE NEST, 2002-2003. 1 ADULT BRINGING PREY TO NEST & ANOTHER SOARING NEARBY 4 JUN 2010.

PLSS:	T20S, R21E, Sec. 36, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4003083 E261907	**Latitude/Longitude:**	36.14327 / -119.64623	**Elevation (feet):**	200

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

BRO00F0014	BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-07-09
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX
BRO03U0004	BROWN, N. - CORRESPONDENCE REGARDING SWAINSON'S HAWK NEST SITES, 2002-2003. 2003-06-09
SEA10F0008	SEAY, J. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2010-06-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 43330
EO Index: 43330
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 828
Occurrence Last Updated: 2000-07-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2000-07-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-07-10
Occurrence Rank: Poor
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF HOUSTON AVENUE AT THE INTERSECTION OF CROSS CREEK, 1.2 MILES EAST OF 6TH AVENUE, 4 MILES SE OF HAMBLIN.

Detailed Location:

Ecological:

NEST TREE IS SUSPECTED TO BE AN OAK.

Threats:

General:

THE PAIR (INCLUDING 1 LIGHT-PHASE ADULT) WAS OBSERVED AT THIS SITE IN MAY-JUN 2000. ON 17 JUL 2000, 2 FLEDGLINGS WERE OBSERVED ON THE WIRE ABOVE THE CREEK.

PLSS: T19S, R22E, Sec. 12 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4019951 E271441
Latitude/Longitude: 36.29749 / -119.54528
Elevation (feet): 245

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

BRO00F0011 BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2000-07-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43441	**EO Index:**	43441
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	831	**Occurrence Last Updated:**	2012-10-24

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1999-04-20	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1999-04-20	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTH SIDE OF HIGHWAY 137, 0.25 MI NE OF RD 24, SW OF WAUKENA.

Detailed Location:

NEST TREE WAS ON THE WEST SIDE OF A SMALL HOUSE, NORTH OF A LITTLE CURVE ON HWY 137, 0.25 MILE WEST OF THE WAUKENA CITY LIMITS SIGN.

Ecological:

NEST TREE IS THE SECOND LARGER TREE (WEST OF THE SMALL HOUSE); AGRICULTURE TO THE NORTH AND ORCHARD TO THE SOUTH.

Threats:

General:

1 BIRD OBSERVED ON 18 APR 1999 & 2 BIRDS (1 DARK) OBSERVED ON 20 APR 1999 - ONE ON NEST AND ONE PERCHED IN A SNAG SOUTH OF THE HOUSE.

PLSS:	T21S, R23E, Sec. 05, NW (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4001819 E273655	**Latitude/Longitude:**	36.13470 / -119.51541	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

BRO99F0008 BROWN, N. - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 1999-04-20

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	51633	**EO Index:**	51633
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	1210	**Occurrence Last Updated:**	2013-09-13

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2003-05-20	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2003-05-20	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTHEAST SIDE OF CROSS CREEK, ON THE W SIDE OF THE HWY 43 CROSSING, BETWEEN LANSING & NEVADA AVES, 14 MI W OF TULARE.

Detailed Location:

NEST IS LOCATED ON THE SE SIDE OF THE NEST TREE, WHICH IS VISIBLE FROM HWY 43.

Ecological:

NEST TREE IS A LONE COTTONWOOD ON THE SE SIDE OF CROSS CREEK; ALFALFA FIELD FOUND TO THE NORTH OF THE NEST TREE.

Threats:

General:

ADULTS OBSERVED GOING IN AND OUT OF NEST DURING LATE SPRING-EARLY SUMMER 2002. DARK-MORPH ADULT AGAIN OBSERVED NESTING ON 9 MAY 2003.

PLSS:	T20S, R22E, Sec. 20 (M)	**Accuracy:**	1/5 mile	**Area (acres):**	0
UTM:	Zone-11 N4006114 E265360	**Latitude/Longitude:**	36.17140 / -119.60880	**Elevation (feet):**	210

County Summary:	**Quad Summary:**
Kings	Waukena (3611925)

Sources:

BRO02U0001	BROWN, N. - MEMO DESCRIBING BURROWING OWL BURROW LOCATIONS AND ONE SWAINSON'S HAWK NEST SITE OBSERVED DURING 2000-2002 2002-XX-XX
BRO03U0001	BROWN, N. - EMAIL REGARDING 2003 NESTING OF BUTEO SWAINSONI, INCLUDING AN ATTACHED MAP 2003-XX-XX
BRO03U0002	BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	69651	**EO Index:**	70431
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	1691	**Occurrence Last Updated:**	2013-09-11

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-07	**Occurrence Rank:**	Good
Owner/Manager:	CALTRANS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

S SIDE OF HWY 198, 0.3 MI E OF RD 52, 2.4 MI SW OF GOSHEN.

Detailed Location:

NEST TREE WAS LOCATED WITHIN THE CALTRANS RIGHT-OF-WAY FOR STATE ROUTE 198. MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A BLACK WALNUT; SURROUNDED BY AGRICULTURAL FIELDS PLANTED WITH ALFALFA, BARLEY, AND WALNUT TREES. 2012 SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES AND DANGER OF TRAFFIC.

Threats:

POTENTIAL FOR VEHICLE COLLISIONS.

General:

2 JUVENILES ON/NEAR NEST TREE, 2 ADULTS SOARING OVERHEAD OBSERVED 13 JUL 2007. 2 ADULTS OBS IN NEST TREE 18 MAR, 2 CHICKS IN NEST 11 JUN, 2 FLEDGLINGS NEAR NEST TREE 15 JUL 2008. INCUBATION OBS 30 APR, 1 BEGGING JUV AT NEST SITE 7 AUG 2012.

PLSS:	T18S, R23E, Sec. 35, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4023038 E279914	**Latitude/Longitude:**	36.32726 / -119.45187	**Elevation (feet):**	260

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0034	DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-30
NUN07F0001	NUNES, T. & R. KLEINFELTER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI (NEST SITE) 2007-07-13
NUN08F0003	NUNES, T. & H. BAKER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86224
EO Index: 87266
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 1782
Occurrence Last Updated: 2012-06-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2011-04-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-04-22
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF SAINT JOHNS RIVER ABOUT 1 MILE DOWNSTREAM (WEST) OF ROAD 80 (ALTA AVE), ABOUT 4.9 MILES SE OF TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES AND ISOLATED TREE VISIBLE IN AERIAL.

Ecological:

SURROUNDING LAND IS PRIMARILY AGRICULTURE FIELDS.

Threats:

General:

1 ADULT OBSERVED IN ADJACENT SEC 25 NEAR THE CONFLUENCE OF CROSS CREEK & ST. JOHNS RIVER IN 2008, BUT NESTING NOT DETERMINED. 2 ADULTS OBSERVED AT A NEST HERE ON 22 APR 2011.

PLSS: T17S, R24E, Sec. 31, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4032672 E283495
Latitude/Longitude: 36.41485 / -119.41469
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL08F0002 HALSTEAD, P. & J. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-07-16

HAL11F0003 HALSTEAD, J. ET AL. (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2011-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86225
EO Index: 87267
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 1783
Occurrence Last Updated: 2012-06-28

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-16
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

JUST SOUTH OF COTTONWOOD CREEK, ABOUT 0.5 MILE UPSTREAM (EAST) OF ROAD 80 (ALTA AVE), ABOUT 5.9 MILES ESE OF TRAVER.

Detailed Location:

MAPPED WITH RESPECT TO PROVIDED MAPS AND ISOLATED TREE VISIBLE IN AERIALS.

Ecological:

NON-NATIVE GRASSLAND ALONG COTTONWOOD CREEK WITH MOST SURROUNDING LANDS USED FOR AGRICULTURE. NO OTHER TREES FOR NESTING WITHIN A 1/2 MILE.

Threats:

General:

A PAIR OF SWAINSON'S HAWKS WAS OBSERVED IN A WILLOW TREE ON 16 JUL 2008.

PLSS: T17S, R24E, Sec. 21, SW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4034838 E286289
Latitude/Longitude: 36.43498 / -119.38415
Elevation (feet): 290

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL08F0002 HALSTEAD, P. & J. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-07-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86226	**EO Index:**	87268
Key Quad:	Traver (3611944)	**Element Code:**	ABNKC19070
Occurrence Number:	1784	**Occurrence Last Updated:**	2019-09-09

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive, IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-06-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-06-01	**Occurrence Rank:**	Fair
Owner/Manager:	CALTRANS ROW	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF HWY 99 AT CROSS CREEK, ABOUT 3.8 MILES SSE OF TRAVER.

Detailed Location:

MIDDLE POLYGON INCLUDES 2008 DETECTION MAPPED TO PROVIDED AERIAL MAP, AND COORDINATES GIVEN FOR 2017 DETECTIONS. 2012 DETECTIONS MAPPED TO NORTH AND SOUTH POLYGONS, PER PROVIDED COORDINATES.

Ecological:

ADULT "SITTING IN CROW NEST" MAR 2008; MAY HAVE BEEN REPAIRING NEST OR REUSING NEST MATERIAL FOR NEW NEST NEARBY. 2012 NESTS IN EUCALYPTI MEDIAN JUST N & S OF CREEK. NON-NATIVE GRASSLAND ALONG CREEK USED FOR GRAZING, THEN AGRICULTURE.

Threats:

POTENTIAL FOR COLLISION WITH FAST-MOVING VEHICLES ON EIHER SIDE OF NEST.

General:

UNCONFIRMED NEST SITE IN 2008. N NEST FLEDGED 1 YOUNG IN 2012; S NEST PRODUCED 2 YOUNG; 1ST DIED WITHIN 2 WEEKS OF HATCHING, 2ND HIT BY VEHICLE WHILE BRANCHING/FLEDGING. 2 ACTIVE NESTS REPORTED IN 2017.

PLSS:	T17S, R23E, Sec. 35, SE (M)	**Accuracy:**	non-specific area	**Area (acres):**	41
UTM:	Zone-11 N4031657 E279699	**Latitude/Longitude:**	36.40485 / -119.45672	**Elevation (feet):**	277

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL08F0003	HALSTEAD, J. ET AL. (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-XX
OLE17F0010	O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-10
TEN17F0018	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-01
WAL12F0005	WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15
WAL12F0006	WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86229	**EO Index:**	87271
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	1786	**Occurrence Last Updated:**	2013-08-30

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	1993-XX-XX	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1999-04-20	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NW OF ROAD 48 AT HWY 198 (E LACEY BLVD), ABOUT 9.4 MILES W OF VISALIA CITY HALL.

Detailed Location:

TERRITORY TU002 FROM CDFW DATABASE. MAPPED TO LIKELY HABITAT IN AERIALS PER GIVEN LOCS "SE1/4 S27 T18S R23E; JUST W OF ROAD 48 ON THE N SIDE OF STATE HWY 198" ('91-92) & "SE1/4 SW1/4 S27 T18S R23E; 0.4 MI E COUNTYLINE, NORTH 198" (1992-94).

Ecological:

NEST 60-70 FEET HIGH IN EUCALYPTUS TREE (1991 & 1992). DFG SWHA TERRITORY #TU002 IN LARGE EUCALYPTUS (1992-1994). SURROUNDING LAND USED FOR AGRICULTURE.

Threats:

General:

1 PAIR MATING IN PECAN TREE ON S EDGE OF HWY 198 ON 20 APR 1991, & 1 ADULT ON NEST 19 MAY 1991. 1 BROODING ADULT ON THE NEST WITH ITS MATE PERCHED NEARBY ON 20 JUN 1992. NESTING IN 1992-93. NEST OCCUPIED BY RED-TAILED HAWKS IN 1994 & 1999.

PLSS:	T18S, R23E, Sec. 27, SW (M)	**Accuracy:**	1/5 mile	**Area (acres):**	0
UTM:	Zone-11 N4023389 E278501	**Latitude/Longitude:**	36.33010 / -119.46770	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

BRO99U0004	BROWN, N. - 1999 SWAINSON'S HAWK SURVEY SUMMARY AND TABLE. 1999-11-09
DFG94U0003	DFG - NONGAME BIRDS & MAMMALS - TABLE OF SWAINSON'S HAWK NEST RECORDS THROUGH 1994. 1994-XX-XX
HAN92R0001	HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86995
EO Index: 87964
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 1788
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-15
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198, 0.6 MI W OF 2ND AVE, ABOUT 3 MI ESE OF REMNOY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A LONE EUCALYPTUS TREE (40" DBH). SURROUNDING LAND USE FOR DAIRY, SILAGE FIELDS, AND RURAL RESIDENTIAL. AN OLD LOPSIDED NEST WAS ON THE N SIDE OF THE NEST TREE (2008).

Threats:

General:

NEST BUILDING OBSERVED 18 MAR; 1 ADULT PERCHED & ANOTHER COLLECTING NESTING MATERIAL AND ADDING TO NEST 17 APR; 1 CHICK OBSERVED IN NEST 26 JUN; 1 FLEDGLING OBSERVED ON THE NEST 15 JUL 2008.

PLSS: T18S, R23E, Sec. 32, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023246 E275246
Latitude/Longitude: 36.32806 / -119.50390
Elevation (feet): 260

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

CON08F0002 CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-04-17

NUN08F0004 NUNES, T. & R. KLEINFELTER (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-04-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86998	**EO Index:**	87965
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	1789	**Occurrence Last Updated:**	2012-10-22

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-03	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-11	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST SW OF KANSAS AVE AT S 11TH AVE, 0.9 MI WSW OF GUERNSEY, 9.5 MI ENE OF STRATFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN A RED WILLOW AMONG NARROW STAND OF WILLOWS AT NE EDGE OF A 124-ACRE PERCOLATION BASIN SURROUNDED BY ALKALINE GRASSLAND. CATTLE GRAZING AROUND BASIN; ALFALFA, WHEAT AND OTHER SILAGE CROPS FARMED NEARBY.

Threats:

General:

SITE VISITED ONCE PER WEEK 15 MAR-11 AUG 2012: COURTSHIP FLIGHTS OBSERVED 6 APR; NEST BUILDING THROUGH 27 APR; INCUBATION 5 MAY; BROODING 1 JUN; 2 DOWNY CHICKS IN NEST 16 JUN; 1 CHICK OBS 22 JUN; 1 NESTLING FLEDGED 14 JUL; LAST OBS 3 AUG.

PLSS:	T20S, R21E, Sec. 11, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4010528 E261173	**Latitude/Longitude:**	36.21013 / -119.65664	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

DAV12F0001 DAVIS, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-08-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86999
EO Index: 87966
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 1790
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-07-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-07-15
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

E SIDE OF 1 1/2 AVE, ABOUT 0.25 MI N OF HWY 198 (E LACEY BLVD), 3.8 MI WSW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A VALLEY OAK (33" DBH) WITHIN A DIRT PULLOUT WHERE FARM EQUIPMENT WAS OFTEN STORED. SURROUNDING LAND USE INCLUDED CORN FIELDS AND ORCHARDS.

Threats:

General:

NEST BUILDING OBSERVED 27 MAR; 2 CHICKS IN NEST 11 JUN; 2 FLEDGLINGS NEAR NEST 15 JUL 2008.

PLSS: T18S, R23E, Sec. 28, SE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023600 E277052
Latitude/Longitude: 36.33166 / -119.48389
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Goshen (3611934)

Sources:

NUN08F0005 NUNES, T. & K. GOSHGARIAN - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-03-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87000
EO Index: 87967
Key Quad: Remnoy (3611935)
Element Code: ABNKC19070
Occurrence Number: 1791
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2009-07-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2009-07-16
Occurrence Rank: Good
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198 (LACEY BLVD) JUST W OF CROSS CREEK, ABOUT 1.4 MI ESE OF REMNOY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS A EUCALYPTUS SURROUNDED BY DAIRY FACILITIES AND CORN FIELDS.

Threats:

General:

1 ADULT AND 1 JUVENILE OBSERVED IN THE NEST TREE 16 JUL 2009.

PLSS: T18S, R22E, Sec. 36, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023325 E272593
Latitude/Longitude: 36.32814 / -119.53344
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

NUN09F0011 NUNES, T. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2009-07-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	87002	**EO Index:**	87968
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	1792	**Occurrence Last Updated:**	2012-10-22

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2009-06-29	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2009-06-29	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.6 MI SSE OF HWY 198 (LACEY BLVD) AT 6TH AVE, 1.5 MI SSW OF REMNOY, AND 5.3 MI E OF FORT ROOSEVELT.

Detailed Location:

USING AIR PHOTOS, MAPPED TO LOCATION DESCRIPTION: "APPROXIMATELY 0.5 MI S OF STATE ROUTE 198 ON 6TH AVENUE...ROW OF COTTOWNWOODS LOCATED BETWEEN THE 2Y'S RANCH AND THE LAKESIDE DITCH."

Ecological:

NEST WAS WITHIN A COTTONWOOD JUST N OF A TURKEY RANCH SURROUNDED BY CORN AND PISTACHIO FIELDS.

Threats:

General:

MATING ADULTS OBSERVED 25 MAR; NEST BUILDING 1 APR; 2 CHICKS IN NEST 27 MAY; 2 FLEDGLINGS IN AND ADJACENT TO NEST TREE 29 JUN 2009.

PLSS:	T18S, R22E, Sec. 35, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4022434 E269968	**Latitude/Longitude:**	36.31950 / -119.56240	**Elevation (feet):**	250

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

NUN09F0010 NUNES, T. & K. GOSHGARIAN (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2009-03-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87003
EO Index: 87969
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 1793
Occurrence Last Updated: 2012-10-22

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-07-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-07-12
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF HWY 198 (LACEY BLVD), ABOUT 0.3 MI E OF RD 56, 2 MI SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST WAS WITHIN A CALIFORNIA BLACK WALNUT ALONG HWY 198 AND SURROUNDED BY AGRICULTURAL OPERATIONS.

Threats:

General:

1 DOWNY CHICK WAS OBSERVED IN NEST AND 1 ADULT WAS PERCHED IN ADJACENT TREE.

PLSS: T18S, R23E, Sec. 35, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4023014 E280680
Latitude/Longitude: 36.32722 / -119.44334
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

NUN12F0006 NUNES, T. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-07-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	87007	**EO Index:**	87972
Key Quad:	Guernsey (3611926)	**Element Code:**	ABNKC19070
Occurrence Number:	1796	**Occurrence Last Updated:**	2012-10-23

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2007-05-10	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2007-05-10	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

JUST SE OF KENT AVE AT 12TH AVE, ABOUT 2 MI WNW OF GUERNSEY, 8 MI SE OF LEMOORE PO.

Detailed Location:

MAPPED TO THE TREE IN AIR PHOTOS NEAR PROVIDED COORDINATES.

Ecological:

NEST WAS IN A EUCALYPTUS TREE SURROUNDED BY ROW CROP AGRICULTURE, INCLUDING SEVERAL ALFALFA FIELDS.

Threats:

General:

PAIR OBSERVED COPULATING AND BUILDING NEST ON 25 APR; AN ADULT OBSERVED INCUBATING ON 10 MAY 2007.

PLSS:	T20S, R21E, Sec. 02, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4012284 E259795	**Latitude/Longitude:**	36.22560 / -119.67250	**Elevation (feet):**	220

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

SEA07F0003 SEAY, J. (H.T. HARVEY AND ASSOCIATES) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2007-04-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 87019
EO Index: 87984
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 1798
Occurrence Last Updated: 2012-10-24

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2008-05-21
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2008-05-21
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

N SIDE OF HWY 137, 0.5 MI NE OF RD 20, 0.8 MI SW OF WAUKENA.

Detailed Location:

NEST TREE IS ABOUT THIRD TREE IN FROM THE E EDGE OF AN L-SHAPED ROW OF EUCALYPTUS TREES ALONG A CANAL ON A RESIDENTIAL SITE. MAPPED TO PROVIDED DESCRIPTION AND MAPS.

Ecological:

NEST TREE WAS A EUCALYPTUS TREE SURROUNDED BY ALFALFA AND OTHER SILAGE, SMALL ORCHARD, RURAL RESIDENTIAL. CANALS AND CAMERON CREEK ALSO NEARBY.

Threats:

General:

1 ADULT SITTING LOW ON NEST, ASSUMED IN INCUBATION STAGE ON 21 MAY 2008; OTHER ADULT NOT SEEN.

PLSS: T21S, R23E, Sec. 06, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4001430 E273144
Latitude/Longitude: 36.13107 / -119.52097
Elevation (feet): 220

County Summary:	Quad Summary:
Tulare	Waukena (3611925)

Sources:

CON08F0011 CONNOLLY, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2008-05-21

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90287
EO Index: 91320
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 2510
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-08-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-08-XX
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

STATE ROUTE 99 MEDIAN, ABOUT 1.5 MILES NW OF THE CROSS CREEK CROSSING AND 2.3 MILES SE OF THE TRAVER POST OFFICE.

Detailed Location:

MAPPED TO GIVEN COORDINATES.

Ecological:

NEST IN TRIMMED EUCALYPTUS IN MEDIAN, FOUND DURING ROAD CONSTRUCTION. SURROUNDING LAND USE WAS AGRICULTURAL, INCLUDING DAIRY IMMEDIATELY TO WEST.

Threats:

POTENTIAL FOR COLLISION WITH FAST-MOVING VEHICLES ON EITHER SIDE OF NEST.

General:

NESTING PAIR WITH 1 CHICK OBSERVED IN 2012; CHICK SUCCESSFULLY FLEDGED IN AUGUST.

PLSS: T17S, R23E, Sec. 27, NW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4033778 E278635
Latitude/Longitude: 36.42370 / -119.46917
Elevation (feet): 270

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

WAL12F0004 WALBRIDGE, C. (CALIFORNIA DEPARTMENT OF TRANSPORTATION) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90293
EO Index: 91328
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 2511
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-04-16
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-04-16
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF COUNTY ROAD 60, ABOUT 0.25 MILE SSW OF ITS JUNCTION WITH AVE 290 AND 2.9 MILES SW OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES, ABOUT 275 FEET WEST OF ROAD 60.

Ecological:

NEST 20' UP IN A WALNUT TREE WITHIN A WALNUT ORCHARD. SURROUNDING AREA PLANTED IN ORCHARDS AND CROPS, PRIMARILY ALFALFA AND CORN, WITH CATTLE YARD TO NORTH. 2012 SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 16 APR 2012; AT LEAST 2 YOUNG WERE FLEDGED BY LATER, UNSPECIFIED DATE.

PLSS: T19S, R23E, Sec. 02, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4021367 E280902
Latitude/Longitude: 36.31243 / -119.44040
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Goshen (3611934)

Sources:

DAN12F0029 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90294	**EO Index:**	91329
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2512	**Occurrence Last Updated:**	2013-10-03

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-05-31	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-XX	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF COUNTY ROAD 68 (=J25) ABOUT 0.7 MILE N OF THE AVENUE 280 INTERSECTION AND 3 MILES SOUTH OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES. NEST TREE ABOUT 100 FEET WEST OF ROAD 68, OPPOSITE THE "VISALIA WATER CONSERVATION PLANT."

Ecological:

NEST 30' UP IN ISOLATED VALLEY OAK IN ALFALFA FIELD SURROUNDED BY MIX OF WALNUT ORCHARDS AND ROW CROPS DOMINATED BY ALFALFA. 2012 SURVEYOR NOTED DISTURBANCE FROM FARM ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 5 APR 2012; FEEDING UNKNOWN NUMBER OF CHICKS ON 31 MAY; BRANCH HOLDING NEST BROKE (POSSIBLY DURING STORM ON 4-5 JUN), NEST FAILED; TERRITORY UNOCCUPIED IN EARLY AUG.

PLSS:	T19S, R23E, Sec. 01, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4020771 E282552	**Latitude/Longitude:**	36.30744 / -119.42187	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0027 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90295	**EO Index:**	91330
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2513	**Occurrence Last Updated:**	2013-10-03

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status:
Federal: None
State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks:
Global: G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-07	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-07	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

EAST SIDE OF COUNTY ROAD 68 (=J25), ABOUT 0.1 MILE NNE OF THE AVENUE 280 INTERSECTION AND 3.5 MILES SOUTH OF GOSHEN.

Detailed Location:

MAPPED TO GIVEN COORDINATES. NEST TREE ABOUT 250 FEET EAST OF ROAD 68, NORTH OF A SMALL ABANDONED SCHOOL HOUSE (PACKWOOD SCHOOL).

Ecological:

NEST 20' UP IN WALNUT TREE IN WALNUT ORCHARD. SURROUNDING AREA PLANTED IN ROW CROPS DOMINATED BY ALFALFA AND CORN. SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 17 APR 2012; 2 CHICKS IN NEST ON 19 JUN; 1 JUVENILE OBSERVED AT NEST SITE ON 7 AUG, INDICATING THAT AT LEAST 1 YOUNG SUCCESSFULLY FLEDGED.

PLSS:	T19S, R24E, Sec. 06, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4019890 E282662	**Latitude/Longitude:**	36.29953 / -119.42041	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0031 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90296	**EO Index:**	91334
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2514	**Occurrence Last Updated:**	2013-09-12

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-04-06	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-04-06	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF ROAD 76 (=ELKHORN ST), ABOUT 0.1 MILE NORTH OF THE AVENUE 272 INTERSECTION AND 4.5 MILES SSE OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST 60' UP IN 1 OF 3 CYPRESSES IN YARD OF PRIVATE RESIDENCE. SURROUNDING LAND USES WERE MAINLY WALNUT ORCHARDS AND ROW CROPS DOMINATED BY CORN, WITH A FEW OTHER RESIDENCES ON THE STREET.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 6 APR 2012; THE NEST WAS SUCCESSFUL AND AT LEAST ONE YOUNG WAS FLEDGED ON UNSPECIFIED DATE.

PLSS:	T19S, R24E, Sec. 07, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4018251 E284148	**Latitude/Longitude:**	36.28510 / -119.40341	**Elevation (feet):**	280

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

DAN12F0028 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90297
EO Index: 91335
Key Quad: Goshen (3611934)
Element Code: ABNKC19070
Occurrence Number: 2515
Occurrence Last Updated: 2013-09-12

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2012-06-19
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2012-08-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH SIDE OF AVE 280 (=HOUSTON/W CALDWELL AVE) ALMOST 0.5 MILE EAST OF RD 44 (1ST AVE) AND 4.5 MILES SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. NEST TREE LOCATED OPPOSITE DIKED HOLDING PONDS ON THE NORTH SIDE OF THE ROAD.

Ecological:

NEST 50' UP IN PINE AMONG ROW OF PINES AT A PRIVATE RESIDENCE. SURROUNDING LAND USES WERE CATTLE YARDS AND ROW CROPS, WITH ALFALFA FIELDS NEARBY. SURVEYOR NOTED DISTURBANCE FROM FARMING ACTIVITIES AND TRAFFIC.

Threats:

General:

PAIR OBSERVED NEST-BUILDING ON 16 APR 2012; ADULT SEEN ON NEST ON 1 & 19 JUN; NEST INTACT BUT NO SWAINSON'S HAWKS PRESENT ON SUCCESSIVE VISITS 5, 6, & 7 AUG, NEST SUCCESS UNCERTAIN.

PLSS: T19S, R23E, Sec. 10, N (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4019786 E278561
Latitude/Longitude: 36.29766 / -119.46601
Elevation (feet): 260

County Summary:

Tulare

Quad Summary:

Goshen (3611934)

Sources:

DAN12F0030 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90303	**EO Index:**	91345
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	2517	**Occurrence Last Updated:**	2016-12-07

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2016-06-08	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2016-06-08	**Occurrence Rank:**	Good
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF E LACEY BLVD, ABOUT 0.25 MILE NE OF THE HWY 43 (=8TH AVE) OVERPASS OVER HWY 198, EAST OF HANFORD.

Detailed Location:

MAPPED TO COORDINATES GIVEN ON FIELD SURVEY FORMS.

Ecological:

2012: NEST 50' UP IN ROADSIDE EUCALYPTUS, WITH CONSTRUCTION & STORAGE YARD IMMEDIATELY SOUTH AND ROW CROPS NORTH OF LACEY BLVD (CORN IN 2012). 2016: EUCALYPTUS ON SOUTH SIDE OF ROAD, APPEARS TO BE SAME LOCATION AS 2012.

Threats:

VEHICLE COLLISIONS FROM TRAFFIC ALONG ROADWAY (2012, 2016). AGRICULTURE (2016).

General:

INCUBATION OBSERVED ON 17 APR 2012; 1 CHICK SEEN IN THE NEST ON 31 MAY; ADULT FEMALE FOUND DEAD ON ROAD OPPOSITE THE NEST ON 11 JUN (LIKELY TRAFFIC COLLISION), CHICK IN NEST WAS DEAD. 1 ADULT OBSERVED SITTING ON NEST ON 8 JUN 2016.

PLSS:	T18S, R22E, Sec. 33, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4023451 E266798	**Latitude/Longitude:**	36.32790 / -119.59799	**Elevation (feet):**	248

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

CHE16F0007 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-08

DAN12F0032 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-04-17

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	90305	**EO Index:**	91347
Key Quad:	Remnoy (3611935)	**Element Code:**	ABNKC19070
Occurrence Number:	2518	**Occurrence Last Updated:**	2013-10-04

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2012-08-08	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2012-08-08	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

NORTH SIDE OF GRANGEVILLE BLVD, FROM 7TH AVE INTERSECTION TO ABOUT 0.3 MILE EAST, 2.6 MILES EAST OF HANFORD.

Detailed Location:

2 NEST SITES, MAPPED TO GIVEN COORDINATES. WEST SITE, 200' EAST OF 7TH AVE, WAS FIRST NEST ATTEMPT; EAST SITE, ABOUT 1700' EAST OF 7TH AVE, WAS SECOND, SUCCESSFUL ATTEMPT.

Ecological:

FIRST NEST IN SMALL, RELATIVELY YOUNG WALNUT ORCHARD. SECOND NEST 50' UP IN EUCALYPTUS ON BACKSIDE OF PRIVATE RESIDENCE. SURROUNDED BY ORCHARDS AND ROW CROPS OF CORN AND ALFALFA. DISTURBANCE FROM FARMING ACTIVITIES AND TRAFFIC.

Threats:

POTENTIAL FOR VEHICLE COLLISIONS ALONG BUSY LOCAL ROAD.

General:

NEST-BUILDING OBSERVED AT 1ST NEST SITE ON 1 MAR 2012; 1ST NEST STILL ACTIVE IN EARLY APR, LATER ABANDONED. THREE YOUNG FLEDGED FROM 2ND NEST, FAMILY GROUP OF 2 ADULTS AND 3 JUVENILES OBSERVED FORAGING ABOUT 0.25 MI E OF NEST ON 8 AUG 2012.

PLSS:	T18S, R22E, Sec. 22, SW (M)	**Accuracy:**	specific area	**Area (acres):**	10
UTM:	Zone-11 N4025161 E268733	**Latitude/Longitude:**	36.34376 / -119.57695	**Elevation (feet):**	255

County Summary:	**Quad Summary:**
Kings	Remnoy (3611935)

Sources:

DAN12F0033 DANIELS, B. (BONTERRA CONSULTING) - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2012-05-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 90314
EO Index: 91359
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2520
Occurrence Last Updated: 2013-09-13

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2003-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2003-05-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

EAST SIDE OF ROAD 48, ABOUT 0.3 MILE NORTH OF AVENUE 248 AND 7.3 MILES WNW OF TULARE PO.

Detailed Location:

MAPPED TO GIVEN ADDRESS: 25076 ROAD 48.

Ecological:

NEST TREE ADJACENT TO "HOUSE WITH EUCALYPTUS."

Threats:

General:

NEST WITH PAIR OBSERVED IN MAY 2003; 1 ADULT SEEN CARRYING TWIG(S) TO NEST. UNKNOWN IF EGGS OR YOUNG WERE PRODUCED.

PLSS: T19S, R23E, Sec. 27, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4013940 E278461
Latitude/Longitude: 36.24498 / -119.46546
Elevation (feet): 255

County Summary:

Tulare

Quad Summary:

Paige (3611924)

Sources:

BRO03U0002 BROWN, N. - COMPILATION OF 2003 NESTING OF BUTEO SWAINSONI 2003-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2886
EO Index: 104507
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 2701
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-06-07
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-06-07
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTH SIDE OF JERSEY AVE, ABOUT 0.4 MILES E OF HWY 43 AND 6.0 MILES SSE OF HANFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST EXPOSED AT TOP OF ROADSIDE EUCALYPTUS.

Threats:

AGRICULTURE.

General:

1 ADULT OBSERVED SITTING LOW IN NEST ON 7 JUN 2016.

PLSS: T19S, R22E, Sec. 28, SW (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4013741 E266890
Latitude/Longitude: 36.24046 / -119.59407
Elevation (feet): 231

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

CHE16F0008 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2899
Key Quad: Remnoy (3611935)
Occurrence Number: 2703

EO Index: 104518
Element Code: ABNKC19070
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened

CNDDB Element Ranks: **Global:** G5
State: S4

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-06-06
Last Survey Date: 2016-06-06
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

WEST SIDE OF 7TH AVE ABOUT 0.4 MI N OF THE IONA AVE INTERSECTION & 1.1 MI SE OF HWY 43 AT HOUSTON AVE, SE OF HANFORD.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN ASH TREE ADJACENT TO ALFALFA FIELDS.

Threats:

AGRICULTURE.

General:

1 ADULT OBSERVED DELIVERING FOOD TO UNSEEN NEST IN TREE ON 6 JUN 2016; A SECOND INDIVIDUAL NEARBY WAS LIKELY ITS MATE.

PLSS: T19S, R22E, Sec. 9, SE (M)
UTM: Zone-11 N4019230 E267964

Accuracy: 80 meters
Latitude/Longitude: 36.29016 / -119.58376

Area (acres): 5
Elevation (feet): 243

County Summary:	Quad Summary:
Kings	Remnoy (3611935)

Sources:

CHE16F0010 CHEN, S. ET AL. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A2917
EO Index: 104537
Key Quad: Waukena (3611925)
Element Code: ABNKC19070
Occurrence Number: 2707
Occurrence Last Updated: 2016-12-07

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-03-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-03-24
Occurrence Rank: Good
Owner/Manager: PVT-CHEVRON
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF NEVADA AVE ABOUT 0.25 MI ESE OF THE HWY 43 INTERSECTION & 1.5 MI NW OF 5 1/2 AVE AT NEWARK AVE, N OF CORCORAN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST TREE WAS EUCALYPTUS. ADJACENT LAND USE WAS SOLAR POWER FACILITY.

Threats:

SOLAR DEVELOPMENT.

General:

PAIR OBSERVED BUILDING NEST IN EUCALYPTUS ON 24 MAR 2016.

PLSS: T21S, R22E, Sec. 3, N (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4002180 E267753
Latitude/Longitude: 36.13655 / -119.58106
Elevation (feet): 213

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

CHE16F0015 CHEN, S. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-03-24

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A8178	**EO Index:**	109959
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2733	**Occurrence Last Updated:**	2018-02-06

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-30	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-30	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.2 MILES SW OF N PLAZA DR (J1) AT W NICHOLAS AVE & 1.4 MILES SE OF HWY 99 AT W GOSHEN AVE, SE OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. NEST N15.

Ecological:

STICK NEST IN OAK TREE ADJACENT TO AGRICULTURAL FIELDS AND COMMERCIAL AREA. VISIBLE DISTURBANCES FROM AGRICULTURE, HEAVY TRUCKING, AND URBAN USE.

Threats:

General:

STICK NEST PRESENT PRIOR TO 2017 SEASON. NESTING PAIR MONITORED IN 2017; A PROBABLE CHICK OBSERVED ON APR 20, BUT NEST SEEMED TO BE EMPTY ON 19 & 30 MAY; NO HAWKS OBSERVED IN SUBSEQUENT SURVEYS.

PLSS:	T18S, R24E, Sec. 29, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023722 E284884	**Latitude/Longitude:**	36.33454 / -119.39675	**Elevation (feet):**	289

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

HIN17F0003 HINDERER, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B0744	**EO Index:**	112614
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2751	**Occurrence Last Updated:**	2018-09-20

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-23	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-23	**Occurrence Rank:**	Good
Owner/Manager:	PVT, UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF SIERRA BLVD (SR 198), ABOUT 250 FT W OF THE RD 52 INTERSECTION & 1.0 MILES E OF 1ST AVE, SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN MOSTLY-DEAD WALNUT ADJACENT TO SR 198. SURROUNDING LAND USE WAS AGRICULTURAL. SURVEYOR NOTED NOISE DISTURBANCE FROM HIGHWAY.

Threats:

General:

1 DARK MORPH OBSERVED SITTING IN NEST ON 23 MAY 2017.

PLSS:	T18S, R23E, Sec. 34, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023067 E279343	**Latitude/Longitude:**	36.32739 / -119.45825	**Elevation (feet):**	273

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

SIN17F0003	SINGLE, A. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-23
TEN17D0001	TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2017 2017-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3288	**EO Index:**	115203
Key Quad:	Traver (3611944)	**Element Code:**	ABNKC19070
Occurrence Number:	2765	**Occurrence Last Updated:**	2019-07-12

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status:
Federal: None
State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks:
Global: G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-04-05	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-04-05	**Occurrence Rank:**	Good
Owner/Manager:	PVT-WESTERVELT ECOLOGICAL SVCS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ALONG COTTONWOOD CREEK, ABOUT 0.8 MI SW OF ROAD 80 AT AVENUE 360 & 4.9 MI ESE OF TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

LIGHTLY GRAZED, OPEN RANGELAND WITH ADJACENT LANDS IN ALFALFA AND ORCHARDS.

Threats:

General:

PAIR OBSERVED PERCHING, FORAGING, AND COPULATING IN/NEAR 2 TREES WITH STICK NESTS ON 5 APR 2017.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	1/5 mile	**Area (acres):**	70
UTM:	Zone-11 N4034687 E284668	**Latitude/Longitude:**	36.43327 / -119.40219	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

PRE17F0008 PRESTON, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3332
Key Quad: Goshen (3611934)
Occurrence Number: 2769

EO Index: 115248
Element Code: ABNKC19070
Occurrence Last Updated: 2019-07-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened

CNDDB Element Ranks: **Global:** G5
State: S4

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-04-22
Last Survey Date: 2016-04-22
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

W SIDE OF 1ST AVE, ABOUT 450' S OF THE HANFORD ARMONA RD INTERSECTION & 4.0 MI SW OF I-99 AT CA-198, W OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN EUCALYPTUS TREE BEHIND RURAL RESIDENCE.

Threats:

General:

NESTING PAIR OBSERVED ON 22 APR 2016. OBSERVED DURING STATEWIDE SURVEY EFFORT.

PLSS: T19S, R23E, Sec. 4, NE (M)
UTM: Zone-11 N4021411 E277709

Accuracy: 80 meters
Latitude/Longitude: 36.3121 / -119.47596

Area (acres): 5
Elevation (feet): 268

County Summary:

Kings, Tulare

Quad Summary:

Goshen (3611934)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX

TEN16F0017 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3333
EO Index: 115249
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2770
Occurrence Last Updated: 2019-07-01

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-04-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-04-22
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

S SIDE OF W TULARE AVE, ABOUT 0.1 MI W OF THE RD 84 INTERSECTION & 0.7 MI NW OF GEMINI ST AT W OWENS AVE IN TULARE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

LONE OAK TREE IN WHEAT FIELD.

Threats:

General:

NESTING PAIR OBSERVED ON 22 APR 2016. OBSERVED DURING STATEWIDE SURVEY EFFORT.

PLSS: T20S, R24E, Sec. 8, NE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4009877 E285483
Latitude/Longitude: 36.20997 / -119.38628
Elevation (feet): 276

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX
TEN16F0018 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-04-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3352
EO Index: 115268
Key Quad: Paige (3611924)
Element Code: ABNKC19070
Occurrence Number: 2781
Occurrence Last Updated: 2019-07-11

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2016-03-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-03-22
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG TULARE AVE (AVE 232) ABOUT 0.5 MI E OF THE RD 48 INTERSECTION & 5.2 MI WNW OF CA-137 AT S WEST ST IN TULARE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN LARGE TREE IN AGRICULTURAL AREA.

Threats:

General:

PAIR REPORTEDLY OBSERVED BUILDING NEST ON 22 MAR 2016; 1 ADULT WAS SITTING ON NEST, OTHER WAS CARRYING NEST MATERIAL TO TREE.

PLSS: T20S, R23E, Sec. 3, SE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4010098 E279051
Latitude/Longitude: 36.21051 / -119.45783
Elevation (feet): 254

County Summary:

Tulare

Quad Summary:

Paige (3611924)

Sources:

TEN16D0001 TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX

TEN16F0028 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-03-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3381	**EO Index:**	115297
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2786	**Occurrence Last Updated:**	2019-07-11

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2016-06-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2016-06-01	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

SOUTH SIDE OF CA-198 (=AVE 296) ABOUT 0.2 MI E OF THE ROAD 44 INTERSECTION & 3 MI SW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN OAK TREE IN RANDOM BLOCK SURVEYED IN 2016 STATEWIDE SURVEY.

Threats:

General:

NESTING PAIR OBSERVED ON 1 JUN 2016.

PLSS:	T18S, R23E, Sec. 34, NW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4023109 E278096	**Latitude/Longitude:**	36.32748 / -119.47214	**Elevation (feet):**	269

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

TEN16D0001	TENNANT, E. - EXCEL FILE OF COMPILED SWHA DETECTIONS IN 2016 2016-XX-XX
TEN16F0038	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2016-06-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3405
EO Index: 115320
Key Quad: Traver (3611944)
Element Code: ABNKC19070
Occurrence Number: 2794
Occurrence Last Updated: 2019-07-09

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2017-06-14
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-06-14
Occurrence Rank: Fair
Owner/Manager: CALTRANS
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG CA-99, ABOUT 0.9 MI NE OF ROAD 36 AT AVE 352 & 1.0 TO 1.3 MI SE OF THE MERRITT DR INTERSECTION IN TRAVER.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NESTS IN EUCALYPTI IN WINDBREAK IN MEDIAN OF CA-99. SURROUNDING LAND USES INCLUDED INDUSTRY AND AGRICULTURE.

Threats:

ROAD CONSTRUCTION.

General:

3 ACTIVE NESTS OBSERVED IN 2017; NEST SUCCESS UNKNOWN.

PLSS: T17S, R23E, Sec. 21, NE (M)
Accuracy: specific area
Area (acres): 14
UTM: Zone-11 N4035434 E277798
Latitude/Longitude: 36.43842 / -119.47898
Elevation (feet): 283

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

OLE17F0011 O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-10
TEN17F0020 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-14
TEN17F0021 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-06-14

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3406	**EO Index:**	115321
Key Quad:	Goshen (3611934)	**Element Code:**	ABNKC19070
Occurrence Number:	2795	**Occurrence Last Updated:**	2019-07-09

Scientific Name: *Buteo swainsoni* **Common Name:** Swainson's hawk

Listing Status: **Federal:** None **Rare Plant Rank:**

State: Threatened **Other Lists:** BLM_S-Sensitive, IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-07-06	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-07-06	**Occurrence Rank:**	Unknown
Owner/Manager:	CITY OF VISALIA	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

E SIDE OF S PLAZA DR JUST N OF THE ENTRANCE TO VALLEY OAKS GOLF COURSE & 0.7 MI SSE OF THE CA-198 INTERCHANGE, VISALIA.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN EUCALYPTUS TREE AT EDGE OF GOLF COURSE, ADJACENT TO AGRICULTURAL FIELD, SURROUNDED BY ANNUAL GRASSLAND, AGRICULTURE, AND AIRPORT.

Threats:

CONVERSION TO ORCHARD.

General:

ACTIVE NEST MONITORED IN 2017 FLEDGED AT LEAST 1 YOUNG.

PLSS:	T18S, R24E, Sec. 32, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4021831 E285743	**Latitude/Longitude:**	36.3177 / -119.38666	**Elevation (feet):**	295

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

SEA17F0001	SEAY, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-25
SEA17F0004	SEAY, J. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-25
TEN17F0022	TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-07-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3413
EO Index: 115328
Key Quad: Guernsey (3611926)
Element Code: ABNKC19070
Occurrence Number: 2800
Occurrence Last Updated: 2019-07-09

Scientific Name: *Buteo swainsoni*
Common Name: Swainson's hawk

Listing Status: **Federal:** None
State: Threatened
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5
State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed: 2017-07-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-07-12
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

N SIDE OF KENT AVE ABOUT 0.25 MI W OF THE 15TH AVE INTERSECTION & 5.7 MI SE OF LEMOORE.

Detailed Location:

MAPPED TO PROVIDED COORDINATES. SE OF TACHI YOKUTS SANTA ROSA RANCHERIA.

Ecological:

NEST IN COTTONWOOD AT EASTERN EDGE OF RARE, HIGH-QUALITY SALTGRASS PRAIRIE ALONG CAIN SLOUGH.

Threats:

General:

2 ADULTS REPORTEDLY OBSERVED PERCHED NEAR NEST ON 12 JUL 2017; PRESUMED TO BE A BREEDING PAIR.

PLSS: T19S, R21E, Sec. 31, SE (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4012452 E254524
Latitude/Longitude: 36.2258 / -119.73114
Elevation (feet): 220

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

TEN17F0030 TENNANT, E. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-07-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3887	**EO Index:**	116801
Key Quad:	Waukena (3611925)	**Element Code:**	ABNKC19070
Occurrence Number:	2805	**Occurrence Last Updated:**	2019-09-30

Scientific Name: *Buteo swainsoni*

Common Name: Swainson's hawk

Listing Status: **Federal:** None

State: Threatened

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
IUCN_LC-Least Concern

CNDDB Element Ranks: **Global:** G5

State: S4

General Habitat:

BREEDS IN GRASSLANDS WITH SCATTERED TREES, JUNIPER-SAGE FLATS, RIPARIAN AREAS, SAVANNAHS, AND AGRICULTURAL OR RANCH LANDS WITH GROVES OR LINES OF TREES.

Micro Habitat:

REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.

Last Date Observed:	2017-05-17	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-05-17	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

W SIDE OF CA-33 (8TH AVE) ABOUT 0.4 MI S OF THE JERSEY AVE INTERSECTION & 2.6 MI NE OF GUERNSEY.

Detailed Location:

MAPPED TO PROVIDED COORDINATES.

Ecological:

NEST IN VALLEY OAK TREE WITHIN CORN FIELD, SURROUNDED BY AGRICULTURE AND ADJACENT TO ROAD RIGHT-OF-WAY.

Threats:

AGRICULTURE OPERATIONS. POSSIBLE DEVELOPMENT/CONSTRUCTION (MAR 2017 DETECTION DURING PRE-CONSTRUCTION SURVEYS).

General:

PAIR OBSERVED COPULATING ON NEST ON 16 MAR 2017. 1 ADULT OBSERVED SITTING ON NEST ON 17 MAY 2017.

PLSS:	T19S, R22E, Sec. 32, NE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4013068 E266209	**Latitude/Longitude:**	36.23424 / -119.60144	**Elevation (feet):**	229

County Summary:	**Quad Summary:**
Kings	Waukena (3611925)

Sources:

OLE17F0008	O'LEARY, R. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-05-17
RIT17F0001	RITT, S. - FIELD SURVEY FORM FOR BUTEO SWAINSONI 2017-03-16

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40396
Key Quad: Traver (3611944)
Occurrence Number: 310
EO Index: 35403
Element Code: ABNSB10010
Occurrence Last Updated: 1998-12-16

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 1998-04-10
Last Survey Date: 1998-04-10
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Fair
Trend: Unknown

Location:

SOUTH OF CROSS CREEK, 0.75 MILE NE OF HWY 99, 4.5 MILES SE OF TRAVER.

Detailed Location:

Ecological:

HABITAT CONSISTS OF NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS. LEPIDURUS PACKARDI ALSO OCCURS IN THE VICINITY. AGRICULTURE TO SOUTH AND EAST.

Threats:

THREATENED BY AGRICULTURAL CONVERSION.

General:

UNKNOWN NUMBER OF OWLS OBSERVED ON 10 APRIL 1998.

PLSS: T17S, R23E, Sec. 36, SE (M)
Accuracy: non-specific area
Area (acres): 254
UTM: Zone-11 N4031485 E281502
Latitude/Longitude: 36.40371 / -119.43657
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

HAL98F0001 HALSTEAD, J.A. & P.S. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 1998-04-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44977
EO Index: 44977
Key Quad: Traver (3611944)
Element Code: ABNSB10010
Occurrence Number: 396
Occurrence Last Updated: 2017-06-13

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
BETWEEN CROSS CREEK AND SETTLERS DITCH, 12 MILES NW OF VISALIA.

Detailed Location:
MAPPED TO PROVIDED COORDINATES.

Ecological:
2000: NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS; SURROUNDED BY GRASSLAND TO NORTH & EAST, FARMLAND TO SOUTH & WEST. 2016: SURROUNDING LANDS USED FOR AGRICULTURE & GRAZING; OVERWINTERING HABITAT FOR THE OWLS; POTENTIAL MITIGATION BANK.

Threats:
POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (2000).

General:
2 ADULTS OBSERVED AT THE BURROW SITE DURING FEB 2000. 2 OWLS AT SEPARATE BURROWS OBSERVED ON 6 MAR 2016. 6 OCCUPIED BURROWS OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T18S, R23E, Sec. 4, NW (M)
Accuracy: specific area
Area (acres): 34
UTM: Zone-11 N4030812 E276921
Latitude/Longitude: 36.39659 / -119.48743
Elevation (feet): 268

County Summary:
Kings

Quad Summary:
Traver (3611944)

Sources:

HAL00F0003	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE) 2000-03-11
HEL16F0007	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL16F0008	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 44978
EO Index: 44978
Key Quad: Burris Park (3611945)
Element Code: ABNSB10010
Occurrence Number: 397
Occurrence Last Updated: 2017-05-30

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G4
State: S2
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF CROSS CREEK, 1 MILE SOUTH OF SETTLERS DITCH, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED LOCATIONS.

Ecological:

1999: NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS; SURROUNDED BY GRASSLAND TO THE SOUTH & EAST, FARMLAND TO THE NORTH & WEST. 2016: LAND USED FOR AGRICULTURE & GRAZING; WETLANDS ARE MAINLY ALKALI VERNAL POOLS; POTENTIAL MITIGATION BANK.

Threats:

POSSIBLE THREAT OF DEVELOPMENT ON SURROUNDING FARMLAND (1999).

General:

4 ADULTS OBSERVED AT THE BURROW SITE ON 1 MAR 1999. 1 ADULT OBSERVED AT BURROW ON 6 MAR 2016. 4 OCCUPIED BURROWS OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T18S, R23E, Sec. 8, W (M)
Accuracy: specific area
Area (acres): 21
UTM: Zone-11 N4029212 E274900
Latitude/Longitude: 36.38171 / -119.50948
Elevation (feet): 263

County Summary:	Quad Summary:
Kings	Burris Park (3611945)

Sources:

HAL99F0007	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR ATHENE CUNICULARIA (BURROW SITE) 1999-03-01
HEL16F0009	HELM, B. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-03-06
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 72215
EO Index: 73157
Key Quad: Waukena (3611925)
Element Code: ABNSB10010
Occurrence Number: 1207
Occurrence Last Updated: 2008-09-09

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2000-03-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-03-XX
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
0.7 MILE WNW OF JUNCTION OF ROAD 28 & AVENUE 208, 2.2 MILES NNW OF WAUKENA, ABOUT 10 WSW OF TULARE.

Detailed Location:

Ecological:
HABITAT IS A PASTURE WITH NON-NATIVE GRASSES. AGRICULTURE LAND TO THE NORTH, EAST AND SOUTH. NATIVE GRASSLAND TO THE WEST IN KINGS COUNTY.

Threats:

General:
BURROW SITE. 16 ADULTS OBSERVED IN MARCH 2000.

PLSS: T20S, R23E, Sec. 19 (M)
Accuracy: non-specific area
Area (acres): 84
UTM: Zone-11 N4005630 E272894
Latitude/Longitude: 36.16884 / -119.52496
Elevation (feet): 230

County Summary:
Kings, Tulare

Quad Summary:
Waukena (3611925)

Sources:
HAL00F0029 HALSTEAD, J. & P. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2000-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A0200
EO Index: 101762
Key Quad: Waukena (3611925)
Element Code: ABNSB10010
Occurrence Number: 1957
Occurrence Last Updated: 2016-05-31

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G4
State: S2
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:
OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:
SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2016-01-08
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-01-08
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
EAST SIDE OF CA-43 ABOUT 0.2 MI SE OF ITS INTERSECTION WITH NEVADA AVE, NW OF CORCORAN.

Detailed Location:
MAPPED TO PROVIDED COORDINATES.

Ecological:
ANNUAL GRASSLAND WITH MANY SMALL BURROWS.

Threats:
AGRICULTURE, SOLAR DEVELOPMENT.

General:
1 ADULT OBSERVED STANDING AT BURROW ON 8 JAN 2016.

PLSS: T21S, R22E, Sec. 3, NW (M)
Accuracy: 80 meters
Area (acres): 5
UTM: Zone-11 N4002052 E267637
Latitude/Longitude: 36.13537 / -119.58231
Elevation (feet): 212

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
CUM16F0002 CUMMINGS, C. - FIELD SURVEY FORM FOR ATHENE CUNICULARIA 2016-01-08

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A4870	**EO Index:**	106568
Key Quad:	Traver (3611944)	**Element Code:**	ABNSB10010
Occurrence Number:	2004	**Occurrence Last Updated:**	2017-05-30

Scientific Name: *Athene cunicularia*

Common Name: burrowing owl

Listing Status: **Federal:** None

State: None

CNDDB Element Ranks: **Global:** G4

State: S2

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.9 MILES WNW OF HWY 99 AT CROSS CREEK AND 2.0 MILES SE OF AVE 352 AT RD 36, NW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

VERNAL POOL LANDSCAPE; POTENTIAL MITIGATION BANK.

Threats:

General:

OCCUPIED BURROW OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS:	T17S, R23E, Sec. 34, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4031771 E278206	**Latitude/Longitude:**	36.40552 / -119.47338	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: A4872
Key Quad: Traver (3611944)
Occurrence Number: 2005

EO Index: 106570
Element Code: ABNSB10010
Occurrence Last Updated: 2017-05-30

Scientific Name: *Athene cunicularia*
Common Name: burrowing owl

Listing Status: **Federal:** None
State: None

CNDDB Element Ranks: **Global:** G4
State: S2

Rare Plant Rank:

Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_LC-Least Concern
USFWS_BCC-Birds of Conservation Concern

General Habitat:

OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS, AND SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.

Micro Habitat:

SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Last Date Observed: 2017-03-01
Last Survey Date: 2017-03-01
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ABOUT 0.4 MILES WNW OF HWY 99 AT CROSS CREEK AND 2.3 MILES SE OF AVE 352 AT RD 36, NW OF GOSHEN.

Detailed Location:

MAPPED TO PROVIDED MAP.

Ecological:

VERNAL POOL LANDSCAPE; POTENTIAL MITIGATION BANK.

Threats:

General:

OCCUPIED BURROW OBSERVED DURING BRANCHIOPOD SURVEYS DEC 2016-MAR 2017.

PLSS: T17S, R23E, Sec. 34, SE (M)
UTM: Zone-11 N4031716 E278986

Accuracy: 80 meters
Latitude/Longitude: 36.40521 / -119.46468

Area (acres): 5
Elevation (feet): 273

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HEL17R0001 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86216
EO Index: 87281
Key Quad: Traver (3611944)
Element Code: ABPBR01030
Occurrence Number: 106
Occurrence Last Updated: 2012-06-29

Scientific Name: *Lanius ludovicianus*
Common Name: loggerhead shrike

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists: CDFW_SSC-Species of Special Concern
IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G4
State: S4

General Habitat:

BROKEN WOODLANDS, SAVANNAH, PINYON-JUNIPER, JOSHUA TREE, AND RIPARIAN WOODLANDS, DESERT OASES, SCRUB AND WASHES.

Micro Habitat:

PREFERS OPEN COUNTRY FOR HUNTING, WITH PERCHES FOR SCANNING, AND FAIRLY DENSE SHRUBS AND BRUSH FOR NESTING.

Last Date Observed: 1992-06-29
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1992-06-29
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

WEST SIDE OF ROAD 80 (ALTA AVE) ALONG COTTONWOOD CREEK ABOUT 0.5 MILE SOUTH OF AVENUE 360, ABOUT 5 MILES ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROJECT SITE.

Ecological:

1 OR MORE LOGGERHEAD SHRIKE NEST WAS FOUND IN GOODDING'S WILLOWS ON THE SITE. IN 1994 AND 2010 AERIALS, TREES ARE ONLY FOUND ALONG THE CREEK RUNNING THROUGH THE SITE. SITE USED FOR GRAZING.

Threats:

General:

AT LEAST ONE NEST WAS FOUND ON THE SITE BETWEEN 21 MAR AND 29 JUN 1992. 6 OTHER BIRD SPECIES NESTED IN WILLOWS, AND LEPIDURUS PACKARDI, BRANCHINECTA LYNCHI, AND SPEA HAMMONDII ARE KNOWN FROM SITE.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: non-specific area
Area (acres): 132
UTM: Zone-11 N4034765 E285094
Latitude/Longitude: 36.43406 / -119.39746
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAN92R0001 HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 97565
Key Quad: Paige (3611924)
Occurrence Number: 677
EO Index: 98887
Element Code: ABPBXB0020
Occurrence Last Updated: 2015-11-13

Scientific Name: *Agelaius tricolor*
Common Name: tricolored blackbird

Listing Status: **Federal:** None
State: Threatened
CNDDB Element Ranks: **Global:** G1G2
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_EN-Endangered
USFWS_BCC-Birds of Conservation Concern

General Habitat:

HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY AND VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro Habitat:

REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, AND FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Last Date Observed: 2000-04-21
Last Survey Date: 2014-04-18
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

N SIDE OF AVE 192, JUST NW OF JUNCTION W/ ROAD 36 AND 0.3 MI NE OF JUNCTION W/ ROAD 32, 4.5 MI NE OF CORCORAN PO.

Detailed Location:

2000 LOCATION DESCRIBED AS "0.25 MI NW OF JUNCTION OF RD 36/AVE 192, 6 MI NE OF CORCORAN." COLONY DATA STORED IN UC DAVIS TRICOLORED BLACKBIRD PORTAL; SITE NAME "ROAD 36 AT AVENUE 192."

Ecological:

1:2 M/F RATIO. 5-10 ACRES OCCUPIED BY NESTS, 175+ NOT OCCUPIED. TOTAL LOSS OF NESTING SITE DUE TO MOWING IN 2000. SILAGE FIELD HAD BEEN CHOPPED IN 2014.

Threats:

General:

ABOUT 4,000 BIRDS OBSERVED NESTING ON 21 APR 2000; 1-2 DAY OLD HATCHLINGS OBSERVED, BIRDS HAD BEGUN DISPERSING DUE TO MOWING OF SITE. 0 BIRDS OBSERVED ON 18 APR 2014.

PLSS: T20S, R23E, Sec. 32, SE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4002350 E275480
Latitude/Longitude: 36.13990 / -119.49530
Elevation (feet): 230

County Summary:	Quad Summary:
Tulare	Paige (3611924)

Sources:

DEH00F0001	DEHAVEN, R. (U.S. FISH AND WILDLIFE SERVICE-SACRAMENTO) - FIELD SURVEY FORM FOR AGELAIUS TRICOLOR 2000-04-21
DFG04U0002	CALIFORNIA DEPARTMENT OF FISH & GAME - TRICOLORED BLACKBIRD BREEDING OBSERVATIONS 1980-2000, BIOS DS20. 2004-XX-XX
TRI14D0001	TRICOLORED BLACKBIRD PORTAL - ICE (UNIVERSITY OF CALIFORNIA, DAVIS) - 1907-2014 TRICOLORED BLACKBIRD RECORDS FROM UC DAVIS TRICOLORED BLACKBIRD PORTAL, INFORMATION CENTER FOR THE ENVIRONMENT (ICE) 2014-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 97566
Key Quad: Waukena (3611925)
Occurrence Number: 678
EO Index: 98888
Element Code: ABPBXB0020
Occurrence Last Updated: 2015-11-13

Scientific Name: *Agelaius tricolor*
Common Name: tricolored blackbird

Listing Status: **Federal:** None
State: Threatened
CNDDB Element Ranks: **Global:** G1G2
State: S2
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_EN-Endangered
USFWS_BCC-Birds of Conservation Concern

General Habitat:

HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN CENTRAL VALLEY AND VICINITY. LARGELY ENDEMIC TO CALIFORNIA.

Micro Habitat:

REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, AND FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.

Last Date Observed: 2000-04-21
Last Survey Date: 2014-04-21
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

ABOUT 0.25 MI E OF KANSAS AVE & 5TH AVE INTERSECTION, 0.75 MI W OF KANSAS AVE & 4TH AVE INTXN, 7.7 MI N OF CORCORAN PO.

Detailed Location:

2000 COLONY LOCATION DESCRIBED AS "0.25 MI E OF JUNCTION OF KANSAS AVE AND 5TH AVE, 10 MI N OF CORCORAN." COLONY DATA STORED IN UC DAVIS TRICOLORED BLACKBIRD PORTAL; SITE NAME "KANSAS AVENUE."

Ecological:

WHEAT IN 2000; 1:3 M/F RATIO. DRY IN 2014.

Threats:

General:

ABOUT 6,000 BIRDS OBSERVED ON 21 APR 2000; 3,000 NESTING & 3,000 MILLING AND SITTING ABOUT IN THE VICINITY FROM MAINLY RECENTLY CUT FIELDS AND SOME DAIRIES. 0 OBSERVED ON 21 APR 2014.

PLSS: T20S, R22E, Sec. 12, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010371 E271440
Latitude/Longitude: 36.21120 / -119.54250
Elevation (feet): 235

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

DEH00F0002	DEHAVEN, R. - FIELD SURVEY FORM FOR AGELAIUS TRICOLOR 2000-04-21
DFG04U0002	CALIFORNIA DEPARTMENT OF FISH & GAME - TRICOLORED BLACKBIRD BREEDING OBSERVATIONS 1980-2000, BIOS DS20. 2004-XX-XX
TRI14D0001	TRICOLORED BLACKBIRD PORTAL - ICE (UNIVERSITY OF CALIFORNIA, DAVIS) - 1907-2014 TRICOLORED BLACKBIRD RECORDS FROM UC DAVIS TRICOLORED BLACKBIRD PORTAL, INFORMATION CENTER FOR THE ENVIRONMENT (ICE) 2014-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 68494
Key Quad: Hanford (3611936)
Occurrence Number: 37
EO Index: 68794
Element Code: AMACC05032
Occurrence Last Updated: 2007-06-27

Scientific Name: *Lasiurus cinereus*
Common Name: hoary bat

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G3G4
State: S4
Rare Plant Rank:
Other Lists: IUCN_LC-Least Concern

General Habitat:

PREFERS OPEN HABITATS OR HABITAT MOSAICS, WITH ACCESS TO TREES FOR COVER AND OPEN AREAS OR HABITAT EDGES FOR FEEDING.

Micro Habitat:

ROOSTS IN DENSE FOLIAGE OF MEDIUM TO LARGE TREES. FEEDS PRIMARILY ON MOTHS. REQUIRES WATER.

Last Date Observed: 1991-04-22
Last Survey Date: 1991-04-22
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

HANFORD.

Detailed Location:

MAPPED ACCORDING TO LAT/LONG COORDINATES PROVIDED BY MANIS WITH UNCERTAINTY OF 30 M.

Ecological:

Threats:

General:

3 FEMALE SPECIMENS (MVZ #182406-182408) COLLECTED BY WILLIAM E. RAINEY ON 26 DEC 1990 AND 2 APR 1991.

PLSS: T18S, R21E, Sec. 25 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4024174 E262491
Latitude/Longitude: 36.33335 / -119.64614
Elevation (feet):

County Summary:

Kings

Quad Summary:

Hanford (3611936)

Sources:

MAN04S0029 MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF LASIURUS CINEREUS SPECIMENS FOR CALIFORNIA FROM MANIS. INCLUDES RECORDS FROM MVZ, CAS, MSB, LSU, KU, LACM, UWBM, FMNH AND TTU. 2004-12-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 66331
Key Quad: Traver (3611944)
Occurrence Number: 91
EO Index: 66424
Element Code: AMACD02011
Occurrence Last Updated: 2006-09-26

Scientific Name: *Eumops perotis californicus*
Common Name: western mastiff bat

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G4G5T4
State: S3S4
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern

General Habitat:

MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER AND DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL, ETC.

Micro Habitat:

ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES AND TUNNELS.

Last Date Observed: 1899-03-01
Last Survey Date: 1899-03-01
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

TRAVER.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED IN THE GENERAL VICINITY OF TRAVER.

Ecological:

Threats:

General:

1 FEMALE SPECIMEN COLLECTED BY C.H.B. WRIGHT ON 1 MAR 1899, CAS #17445.

PLSS: T17S, R23E, Sec. 16 (M)
Accuracy: 3/5 mile
Area (acres): 0
UTM: Zone-11 N4037179 E277297
Latitude/Longitude: 36.45403 / -119.48506
Elevation (feet):

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

COC60A0001	COCKRUM, E.L. (UNIVERSITY OF ARIZONA) - DISTRIBUTION, HABITAT AND HABITS OF THE MASTIFF BAT, EUMOPS PEROTIS, IN NORTH AMERICA. 1960: JOURNAL OF THE ARIZONA ACADEMY OF SCIENCE, 1:79-84 1960-01-01
MAN04S0027	MAMMAL NETWORKED INFORMATION SYSTEM (MANIS) - PRINTOUT OF EUMOPS PEROTIS CALIFORNICUS SPECIMEN RECORDS FROM MANIS. INCLUDES RECORDS FROM MVZ, CAS, TTU, ROM, LACM, KU, MSU AND FMNH. 2004-12-10
PIE98R0001	PIERSON, E. & W. RAINEY - DISTRIBUTION, HABITAT ASSOCIATIONS, STATUS AND SURVEY METHODOLOGIES FOR THREE MOLOSSID BAT SPECIES AND THE VESPERTILIONID. FINAL REPORT CAL FISH & GAME WILDLIFE MANAGEMENT DIVISION 1998-04-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14799
EO Index: 14608
Key Quad: Guernsey (3611926)
Element Code: AMAFD03152
Occurrence Number: 20
Occurrence Last Updated: 1989-08-10

Scientific Name: *Dipodomys nitratoides nitratoides*
Common Name: Tipton kangaroo rat

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3T1T2
State: S2

General Habitat:

SALTBRUSH SCRUB AND SINK SCRUB COMMUNITIES IN THE TULARE LAKE BASIN OF THE SOUTHERN SAN JOAQUIN VALLEY.

Micro Habitat:

NEEDS SOFT FRIABLE SOILS WHICH ESCAPE SEASONAL FLOODING. DIGS BURROWS IN ELEVATED SOIL MOUNDS AT BASES OF SHRUBS.

Last Date Observed: 1985-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-07-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

ALL OF SECS 7 & 8 & HALF OF SECS 17 & 18, T20S, R21E. APPROX 5 MI ENE STRATFORD.

Detailed Location:

APPROXIMATELY 25 BURROWS PER HA OBSERVED.

Ecological:

HABITAT IS APPROXIMATELY 615 HA OF IODINE BUSH AND ATRIPLEX SPINIFERA SHRUB HABITATS, AND SOME GRASSLAND HABITAT. AREA INCLUDES A PERCOLATION BASIN AND SOME PREVIOUSLY CULTIVATED LAND.

Threats:

General:

SITE #2 (WILLIAMS 1985).

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: specific area
Area (acres): 1,865
UTM: Zone-11 N4009578 E254866
Latitude/Longitude: 36.20000 / -119.72644
Elevation (feet): 215

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

WIL85R0001 WILLIAMS, D.F. - A REVIEW OF THE POPULATIONS STATUS OF THE TIPTON KANGAROO RAT, DIPODOMYS NITRATOIDES - FINAL REPORT USFWS ORDER NO. 10181-4861 (TS), 84 SE-0020-4 1985-12-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 14894
EO Index: 14607
Key Quad: Guernsey (3611926)
Element Code: AMAFD03152
Occurrence Number: 21
Occurrence Last Updated: 1998-09-15

Scientific Name: *Dipodomys nitratoides nitratoides*
Common Name: Tipton kangaroo rat

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3T1T2
State: S2

General Habitat:
SALTBRUSH SCRUB AND SINK SCRUB COMMUNITIES IN THE TULARE LAKE BASIN OF THE SOUTHERN SAN JOAQUIN VALLEY.

Micro Habitat:
NEEDS SOFT FRIABLE SOILS WHICH ESCAPE SEASONAL FLOODING. DIGS BURROWS IN ELEVATED SOIL MOUNDS AT BASES OF SHRUBS.

Last Date Observed: 1985-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-07-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
APPROX 8 MILES ENE OF STRATFORD.

Detailed Location:
ALL OF SECS 10 & 11 & PORTIONS OF SECS 12,14 & 15.

Ecological:
HABITAT IS APPROXIMATELY 400 HA OF IODINE BUSH SHRUB AND SHRUB-MARSH ECOTONE. AREA INCLUDES PERCOLATION BASINS.

Threats:
AREA IS HEAVILY GRAZED BY DAIRY CATTLE. HOMES NEARBY.

General:
SITE #3 (WILLIAMS 1985). APPROXIMATELY 20 BURROWS PER HA OBSERVED.

PLSS: T20S, R21E, Sec. 11 (M)
Accuracy: non-specific area
Area (acres): 1,758
UTM: Zone-11 N4009643 E259811
Latitude/Longitude: 36.20183 / -119.67151
Elevation (feet): 215

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

WIL85R0001 WILLIAMS, D.F. - A REVIEW OF THE POPULATIONS STATUS OF THE TIPTON KANGAROO RAT, DIPODOMYS NITRATOIDES - FINAL REPORT USFWS ORDER NO. 10181-4861 (TS), 84 SE-0020-4 1985-12-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 55307
EO Index: 55307
Key Quad: Traver (3611944)
Element Code: AMAJA03041
Occurrence Number: 150
Occurrence Last Updated: 2004-05-03

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2003-08-08
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2003-08-08
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTHEAST OF GOSHEN, 600 FT SW OF THE INTERSECTION OF J19 (AKA ROAD 80) & J34 (AKA AVE 328).

Detailed Location:

UTM COORDINATES AND MAP DO NOT INDICATE THE SAME LOCATION. USED THE MAP TO PLOT THE SIGHTING. ALSO LOCATION CONFIRMED BY E-MAIL.

Ecological:

IRRIGATED ALFALFA, BURROWING OWLS WERE IN THE AREA.

Threats:

DOGS & COYOTES.

General:

2003: 08/08/2003 ONE ADULT SIGHTED FORAGING IN FRESHLY CUT ALFALFA FIELD AT 22:30, ABOUT 600 FEET SW OF THE INTERSECTION.

PLSS: T18S, R24E, Sec. 08, SE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4029131 E285037
Latitude/Longitude: 36.38330 / -119.39653
Elevation (feet): 300

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

VIS03F0001	VISGER, G. (VISGER AND ASSOCIATES, INC.) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2003-08-08
VIS04U0001	VISGER, G. (VISGER AND ASSOCIATES, INC.) - E-MAIL TO C. REINER REGARDING VULPES MACROTIS MUTICA 2004-04-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	55674	**EO Index:**	55674
Key Quad:	Guernsey (3611926)	**Element Code:**	AMAJA03041
Occurrence Number:	191	**Occurrence Last Updated:**	2004-05-27

Scientific Name: *Vulpes macrotis mutica* **Common Name:** San Joaquin kit fox

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: Threatened **Other Lists:**

CNDDB Element Ranks: **Global:** G4T2

State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed:	1989-06-23	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1989-06-23	**Occurrence Rank:**	Unknown
Owner/Manager:	UNKNOWN	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

6.5 MI SSE OF LEMORE, NE CORNER OF KANSAS AVE & 16TH AVE, WEST OF JACOBS SLOUGH.

Detailed Location:

Ecological:

HIGHLY DISTURBED ANNUAL GRASSLAND. DIPODOMYS NITRATOIDES REPORTED IN THE AREA, SURROUNDING LAND USE IS AGRICULTURE AND "NATURAL" LAND.

Threats:

DRAINAGE DITCHES; POSSIBLE FUTURE CULTIVATION OR TURKEY RANCH.

General:

6/23/1989: ONE FOX SIGHTED OF UNKNOWN AGE.

PLSS:	T20S, R21E, Sec. 06, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	41
UTM:	Zone-11 N4011059 E253496	**Latitude/Longitude:**	36.21299 / -119.74212	**Elevation (feet):**	200

County Summary:	**Quad Summary:**
Kings	Guernsey (3611926)

Sources:

WIL89F0012	WILLIAMS, D. (CALIFORNIA STATE UNIVERSITY, STANISLAUS) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 1989-06-23

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 66338
EO Index: 66435
Key Quad: Hanford (3611936)
Element Code: AMAJA03041
Occurrence Number: 214
Occurrence Last Updated: 2012-11-30

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2000-08-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-08-15
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF SAND SLOUGH, S OF HOUSTON AVE JUST WEST OF 11TH AVENUE, ABOUT 2.3 MI SSW OF HANFORD PO.

Detailed Location:

MAPPED TO PROVIDED TRS FOR 2000: NW1/4 OF NE1/4 SEC 11.

Ecological:

OBSERVED IN A WALNUT ORCHARD IN 2000. SOUTH SIDE OF HOUSTON STILL APPEARS TO BE AN ORCHARD IN 2010 AERIALS. SAND SLOUGH (SLIGHTLY DISCONTINUOUS NORTH & SOUTH OF ROAD) MAY PROVIDE SOME NATURAL COVER/HABITAT.

Threats:

General:

1 ADULT WAS OBSERVED IN A WALNUT ORCHARD ON 15 AUG 2000.

PLSS: T19S, R21E, Sec. 11, NE (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4020033 E261033
Latitude/Longitude: 36.29570 / -119.66111
Elevation (feet): 235

County Summary:	Quad Summary:
Kings	Hanford (3611936)

Sources:

GRA00F0013 GRAY, G. & P. STURM - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2000-08-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67129
EO Index: 67279
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 454
Occurrence Last Updated: 2006-12-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ABOUT 1.4 MI ENE OF 17TH AVE & KANSAS AVE, W OF JACOBS SLOUGH.

Detailed Location:

Ecological:

VALLEY SINK SCRUB.

Threats:

General:

KIT FOX OR DEN OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 06, NW (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4011899 E253775
Latitude/Longitude: 36.22063 / -119.73929
Elevation (feet): 220

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

CEC88M0001 CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67130
EO Index: 67280
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 455
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
NW OF PERCOLATION BASINS, 0.9 MI NE OF INTERSECTION OF 16TH & LAUREL AVE.

Detailed Location:

Ecological:
VALLEY SINK SCRUB.

Threats:

General:
SIGHTING IN VICINITY SOMETIME FROM 1972 THROUGH JUL 1975. KIT FOX OR SCAT OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4009271 E254288
Latitude/Longitude: 36.19709 / -119.73276
Elevation (feet): 220

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

CEC88M0001	CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX
MOR75M0001	MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67131
EO Index: 67281
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 456
Occurrence Last Updated: 2006-12-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1988-05-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1988-05-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
W OF PERCOLATION BASINS, ABOUT 1.5 MI NE OF INTERSECTION OF LAKEVIEW & 16TH AVE.

Detailed Location:

Ecological:
VALLEY SINK SCRUB.

Threats:

General:
KIT FOX OR SCAT OBSERVED IN MAY 1988.

PLSS: T20S, R21E, Sec. 17, SW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4007913 E255287
Latitude/Longitude: 36.18511 / -119.72124
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
CEC88M0001 CALIFORNIA ENERGY COMMISSION - SOUTHERN SAN JOAQUIN VALLEY HABITAT PRESERVATION PROGRAM SENSITIVE SPECIES SIGHTINGS: PHASE III SURVEY. 1988-05-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67378
EO Index: 67546
Key Quad: Traver (3611944)
Element Code: AMAJA03041
Occurrence Number: 619
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1971-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1971-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 4.7 MI NNE OF GOSHEN, JUST N OF ST. JOHNS RIVER.

Detailed Location:

Ecological:

Threats:

General:
KIT FOX OBSERVATION(S) IN 1971. SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

PLSS: T17S, R24E, Sec. 29 (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4032754 E285070
Latitude/Longitude: 36.41594 / -119.39717
Elevation (feet): 290

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67379
Key Quad: Goshen (3611934)
Occurrence Number: 620
EO Index: 67547
Element Code: AMAJA03041
Occurrence Last Updated: 2006-12-13

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1973-XX-XX
Last Survey Date: 1973-XX-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
INTERSECTION OF HWY 198 AND TULARE/KINGS COUNTY LINE.

Detailed Location:

Ecological:

Threats:

General:
KIT FOX OBSERVATION(S) IN 1973.

PLSS: T18S, R23E, Sec. 27 (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4023230 E277822
Latitude/Longitude: 36.32851 / -119.47521
Elevation (feet): 270

County Summary:	Quad Summary:
Kings, Tulare	Goshen (3611934)

Sources:

SWI73R0001 SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67392
EO Index: 67562
Key Quad: Taylor Weir (3611914)
Element Code: AMAJA03041
Occurrence Number: 630
Occurrence Last Updated: 2007-01-23

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI SSW OF TULARE, SE OF INTERSECTION OF OCTOL AVE (AVE 184) AND ELK BAYOU AVE (ROAD 80).

Detailed Location:

Ecological:

Threats:
TRAFFIC.

General:
ROAD KILL OBSERVED IN 1973. ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R24E, Sec. 09 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N3999907 E285305
Latitude/Longitude: 36.12012 / -119.38552
Elevation (feet): 250

County Summary:
Tulare

Quad Summary:
Taylor Weir (3611914), Paige (3611924)

Sources:

MOR75M0001	MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX
SWI73R0001	SWICK, C.D. - DETERMINATION OF SAN JOAQUIN KIT FOX RANGE IN CCA, SJQ, ALA & TUL COUNTIES, CDFG 1973-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67784
EO Index: 67936
Key Quad: Goshen (3611934)
Element Code: AMAJA03041
Occurrence Number: 907
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 1.7 MI NE OF GOSHEN, NEAR INTERSECTION OF ALLISON RD AND MODOC DITCH.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R24E, Sec. 17 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4026939 E285097
Latitude/Longitude: 36.36357 / -119.39525
Elevation (feet): 300

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67792
EO Index: 67945
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 914
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 4.3 MI NW OF CORCORAN, JUST S OF WHERE GUIBERSON CANAL MEETS CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
DEN OBSERVED SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T21S, R22E, Sec. 06 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4001805 E263624
Latitude/Longitude: 36.13218 / -119.62678
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Waukena (3611925), Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67793
EO Index: 67946
Key Quad: Waukena (3611925)
Element Code: AMAJA03041
Occurrence Number: 915
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI N OF CORCORAN, 1.4 MI S OF INTERSECTION OF 6TH & KANSAS AVE, NEAR LAKELAND CANAL.

Detailed Location:

Ecological:

Threats:

General:
DEN OBSERVED SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R22E, Sec. 15 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4008242 E269173
Latitude/Longitude: 36.19148 / -119.56706
Elevation (feet): 220

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67795
EO Index: 67947
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 916
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.7 MI ESE OF STRATFORD, 0.9 MI NE OF INTERSECTION OF MANTECA AVE & 14 1/2 AVE.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R21E, Sec. 28 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4005515 E256396
Latitude/Longitude: 36.16379 / -119.70817
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67798
EO Index: 67948
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 917
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.5 MI ENE OF STRATFORD, ON KENT AVE & 14TH AVE NEAR THEIR INTERSECTION.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING, ROAD KILL OR DEN PRIOR TO 1972. SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T20S, R21E, Sec. 05 (M)
Accuracy: non-specific area
Area (acres): 531
UTM: Zone-11 N4011656 E255906
Latitude/Longitude: 36.21898 / -119.71552
Elevation (feet): 220

County Summary:	Quad Summary:
Kings	Guernsey (3611926)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67799
EO Index: 67949
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 918
Occurrence Last Updated: 2007-02-22

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 9.8 MILES NW OF CORCORAN, NW OF GUERNSEY, NORTH OF KANSAS AVE AND WEST OF 10TH AVE.

Detailed Location:

Ecological:

Threats:

General:
TWO DENS AND ONE FOX SIGHTING AT THE DEN SOMETIME FROM 1972 THROUGH JULY 1975.

PLSS: T20S, R21E, Sec. 02 (M)
Accuracy: non-specific area
Area (acres): 895
UTM: Zone-11 N4011343 E260989
Latitude/Longitude: 36.21743 / -119.65894
Elevation (feet): 220

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67800
EO Index: 67952
Key Quad: Guernsey (3611926)
Element Code: AMAJA03041
Occurrence Number: 919
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6 MI S OF HANFORD, JUST NW OF INTERSECTION OF JERSEY AVE AND 10TH AVE.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T19S, R21E, Sec. 25 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4014557 E262661
Latitude/Longitude: 36.24678 / -119.64132
Elevation (feet): 230

County Summary:
Kings

Quad Summary:
Guernsey (3611926), Hanford (3611936)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67801
EO Index: 67953
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 920
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 7 MI SE OF HANFORD, W OF INTERSECTION OF IDAHO AVE AND 5TH AVE, IN THE VICINITY OF CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T19S, R22E, Sec. 23 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4016852 E270729
Latitude/Longitude: 36.26940 / -119.55229
Elevation (feet): 240

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67804
EO Index: 67954
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 921
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 6.4 MI E OF HANFORD ON LACEY BLVD AT INTERSECTION WITH HIGHLINE CANAL.

Detailed Location:

Ecological:

Threats:

General:
ROAD KILL SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R23E, Sec. 31 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4023137 E273025
Latitude/Longitude: 36.32655 / -119.52858
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67805
EO Index: 67955
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 922
Occurrence Last Updated: 2007-02-20

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1971-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1971-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
JUST E OF HANFORD, JUST SW OF INTERSECTION OF HWY 198 AND 9 1/4 AVE. NORTH OF HANFORD MUNICIPAL AIRPORT.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING, ROAD KILL OR DEN PRIOR TO 1972.

PLSS: T18S, R22E, Sec. 31 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4023304 E264304
Latitude/Longitude: 36.32597 / -119.62570
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935), Hanford (3611936)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67806
EO Index: 67956
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 923
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 5.8 MI ENE OF HANFORD, 0.7 MI NE OF INTERSECTION OF 5TH AVE AND GRANGEVILLE BLVD.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R22E, Sec. 24 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4026024 E272037
Latitude/Longitude: 36.35232 / -119.54042
Elevation (feet): 260

County Summary:	Quad Summary:
Kings	Remnoy (3611935)

Sources:

MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67807
EO Index: 67957
Key Quad: Remnoy (3611935)
Element Code: AMAJA03041
Occurrence Number: 924
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 8.3 MI ENE OF HANFORD & 4.7 MI NW OF GOSHEN, NEAR EAST BRANCH CROSS CREEK.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING FROM 1972 THROUGH JUL 1975.

PLSS: T18S, R23E, Sec. 08 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4028199 E275554
Latitude/Longitude: 36.37274 / -119.50189
Elevation (feet): 260

County Summary:
Kings

Quad Summary:
Goshen (3611934), Remnoy (3611935), Traver (3611944), Burris Park (3611945)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67808
EO Index: 67958
Key Quad: Laton (3611946)
Element Code: AMAJA03041
Occurrence Number: 925
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 2.5 MI SE OF LATON, 0.6 MI N OF INTERSECTION OF 11TH AVE AND EXCELSIOR AVE & S OF THE KINGS RIVER.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T17S, R21E, Sec. 36 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4032746 E262090
Latitude/Longitude: 36.41045 / -119.65323
Elevation (feet):

County Summary:
Kings

Quad Summary:
Laton (3611946)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 67809
EO Index: 67959
Key Quad: Laton (3611946)
Element Code: AMAJA03041
Occurrence Number: 926
Occurrence Last Updated: 2007-01-17

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
Rare Plant Rank:
State: Threatened
Other Lists:
CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:
ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:
NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 1975-07-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1975-07-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 3.5 MI NNW OF LATON, JUST SW OF INTERSECTION OF CLOVIS AVE & ATCHISON TOPEKA AND SANTA FE RR.

Detailed Location:

Ecological:

Threats:

General:
SIGHTING SOMETIME FROM 1972 THROUGH JUL 1975.

PLSS: T17S, R21E, Sec. 05 (M)
Accuracy: 2/5 mile
Area (acres): 0
UTM: Zone-11 N4040635 E257116
Latitude/Longitude: 36.48025 / -119.71111
Elevation (feet): 260

County Summary:
Fresno

Quad Summary:
Laton (3611946)

Sources:
MOR75M0001 MORRELL, S.H. - MAPS (6) SHOWING SAN JOAQUIN KIT FOX DISTRIBUTION AND ABUNDANCE IN 1975. 1975-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 69175
EO Index: 69953
Key Quad: Hanford (3611936)
Element Code: AMAJA03041
Occurrence Number: 1101
Occurrence Last Updated: 2007-05-07

Scientific Name: *Vulpes macrotis mutica*
Common Name: San Joaquin kit fox

Listing Status: **Federal:** Endangered
State: Threatened
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G4T2
State: S3

General Habitat:

ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.

Micro Habitat:

NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.

Last Date Observed: 2006-06-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2006-06-12
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

NW OF HANFORD, EAST OF KINGS ROAD, NORTH OF GRANGEVILLE ROAD AND WEST OF RAILROAD TRACKS.

Detailed Location:

FOX OBSERVED IN AN UNDEVELOPED 15.26 ACRE PARCEL.

Ecological:

Threats:

General:

1 INDIVIDUAL OBSERVED ON 12 JUN 2006.

PLSS: T18S, R21E, Sec. 23, SW (M)
Accuracy: non-specific area
Area (acres): 35
UTM: Zone-11 N4025460 E260863
Latitude/Longitude: 36.34453 / -119.66465
Elevation (feet): 250

County Summary:	Quad Summary:
Kings	Hanford (3611936)

Sources:

SHE06F0001	SHERMAN, M. (KINGS COUNTY PLANNING AGENCY) - FIELD SURVEY FORM FOR VULPES MACROTIS MUTICA 2006-06-12
SLO07U0001	BRIDEN, L. (CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE-BAY DELTA DIVISION) - E-MAIL REGARDING LOCATION OF SIGHTING OF SHE06F0001 2007-05-04

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32770
EO Index: 676
Key Quad: Guernsey (3611926)
Element Code: ARAAD02030
Occurrence Number: 10
Occurrence Last Updated: 1996-01-08

Scientific Name: *Emys marmorata*
Common Name: western pond turtle

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable
USFS_S-Sensitive

CNDDB Element Ranks: **Global:** G3G4
State: S3

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS AND IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEEDS BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed: XXXX-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: XXXX-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

10.5 MILES EAST OF STRATFORD; W OF GUERNSEY; SOUTHWEST CORNER OF KANSAS AVENUE X TENTH AVENUE.

Detailed Location:

Ecological:

Threats:

General:

COLLECTION MADE BY CALIF. DEPT. OF FISH AND GAME, DATE AND NUMBER OF SPECIMENS UNKNOWN.

PLSS: T20S, R21E, Sec. 12, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010287 E261804
Latitude/Longitude: 36.20812 / -119.64957
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

BRA88R0001 BRATTSTROM, B. & D. MESSER - CURRENT STATUS OF THE SOUTHWESTERN POND TURTLE, CLEMMYS MARMORATA PALLIDA, IN SOUTHERN CALLIFORNIA. REPORT TO CALIFORNIA DEPARTMENT OF FISH AND GAME. 1988-XX-XX

HOL88U0002 HOLLAND, D. (UNIVERSITY OF SOUTHWESTERN LOUISIANA) - LIST OF DOCUMENTED CLEMMYS MARMORATA LOCALITIES 1988-03-23

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40283
EO Index: 35290
Key Quad: Stratford (3611927)
Element Code: ARAAD02030
Occurrence Number: 141
Occurrence Last Updated: 1998-12-02

Scientific Name: *Emys marmorata*
Common Name: western pond turtle

Listing Status: **Federal:** Proposed Threatened
State: None
Rare Plant Rank:

CNDDB Element Ranks: **Global:** G3G4
State: S3
Other Lists: BLM_S-Sensitive
CDFW_SSC-Species of Special Concern
IUCN_VU-Vulnerable
USFS_S-Sensitive

General Habitat:

A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS AND IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.

Micro Habitat:

NEEDS BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.

Last Date Observed: 1998-04-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-04-27
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

MUSSEL SLOUGH, ON SANTA ROSA RANCHERIA, 5 MILES NE OF STRATFORD.

Detailed Location:

MUSSEL SLOUGH IS A CLOSED SYSTEM, CUT OFF FROM OUTLET BY AGRICULTURAL FILLS NORTH AND SOUTH OF THE SLOUGH.

Ecological:

HABITAT CONSISTS OF A STAGNANT SLOUGH, CONTAINING LARGE AND SMALL MOUTH BASS, GREEN SUNFISH, AND MOSQUITOFISH.

Threats:

POSSIBLE THREAT FROM PROPOSAL TO RESTORE FLOW TO THE SLOUGH, WHICH MAY REQUIRE DREDGING.

General:

2 ADULTS OBSERVED ON 27 APRIL 1998.

PLSS: T19S, R20E, Sec. 36, NE (M)
Accuracy: specific area
Area (acres): 76
UTM: Zone-11 N4013278 E252549
Latitude/Longitude: 36.23273 / -119.75335
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926), Stratford (3611927)

Sources:

LYN98F0003 LYNCH, S. & G. MONK (MONK AND ASSOCIATES, INC.) - FIELD SURVEY FORM FOR CLEMMYS MARMORATA 1998-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 39951
EO Index: 34953
Key Quad: Guernsey (3611926)
Element Code: ARACF07010
Occurrence Number: 268
Occurrence Last Updated: 1998-10-15

Scientific Name: *Gambelia sila*
Common Name: blunt-nosed leopard lizard

Listing Status: **Federal:** Endangered
State: Endangered
Rare Plant Rank:
Other Lists: CDFW_FP-Fully Protected
IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G1
State: S2

General Habitat:

RESIDENT OF SPARSELY VEGETATED ALKALI AND DESERT SCRUB HABITATS, IN AREAS OF LOW TOPOGRAPHIC RELIEF.

Micro Habitat:

SEEKS COVER IN MAMMAL BURROWS, UNDER SHRUBS OR STRUCTURES SUCH AS FENCE POSTS; THEY DO NOT EXCAVATE THEIR OWN BURROWS.

Last Date Observed: 1990-04-27
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1990-04-27
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NORTH SIDE OF KANSAS AVENUE, WEST SIDE OF 14TH AVENUE. 7 MILES EAST OF STRATFORD.

Detailed Location:

Ecological:

HABITAT CONSISTS OF GRAZED VALLEY SINK SCRUB; DOMINANTS INCLUDE SUAEDA FRUTICOSA AND ALLENROLFEA OCCIDENTALIS. ALTHOUGH THE SITE IS BEING ADVERSELY IMPACTED FROM GRAZING, THE VEGETATION IS IN GOOD CONDITION.

Threats:

THREATENED BY GRAZING.

General:

2 ADULTS (1 MALE, 1 FEMALE) OBSERVED ON 27 APRIL 1990.

PLSS: T20S, R21E, Sec. 05, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4011051 E256260
Latitude/Longitude: 36.21362 / -119.71140
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

LAU90F0001 LAUGHLIN, T. - FIELD SURVEY FORM FOR GAMBELIA SILA (=SILUS) 1990-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 15270
EO Index: 8665
Key Quad: Goshen (3611934)
Element Code: CTT42120CA
Occurrence Number: 12
Occurrence Last Updated: 1998-07-14

Scientific Name: *Valley Sacaton Grassland*
Common Name: Valley Sacaton Grassland

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1.1

General Habitat:

Micro Habitat:

Last Date Observed: 1985-03-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1985-03-12
Occurrence Rank: Poor
Owner/Manager: PVT
Trend: Decreasing
Presence: Presumed Extant

Location:

CROSS CREEK NORTH OF HWY 198, ABOUT 3 MILES WEST OF HWY 99 VIA AVE 328 & DIRT ROAD CONNECTING TO 320.

Detailed Location:

Ecological:

HEAVILY GRAZED W/ VERY FEW SPOROBOLUS & SOME DEGRADED VERNAL POOLS, DISTICHLIS, HORDEUM, ERODIUM, ELYMUS DOM. LOW DIVERSITY, LOW NATIVE COVER. POOLS W/ MYOSURUS, LASTHENIA GLABRATA, JUNCUS, LEPIDIUM, PLAGIOBOTHRYS.

Threats:

GRAZING HAS DISTURBED THIS SITE.

General:

SEE HTTPS://WILDLIFE.CA.GOV/DATA/VEGCAMP/NATURAL-COMMUNITIES TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T18S, R23E, Sec. 16, NW (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4027618 E276472
Latitude/Longitude: 36.36772 / -119.49151
Elevation (feet): 260

County Summary:

Kings, Tulare

Quad Summary:

Goshen (3611934), Remnoy (3611935), Traver (3611944), Burris Park (3611945)

Sources:

BIT85F0016 BITTMAN, R. ET AL. - FIELD SURVEY FORM FOR VALLEY SACATON GRASSLAND 1985-03-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 15328
EO Index: 26434
Key Quad: Traver (3611944)
Element Code: CTT44120CA
Occurrence Number: 10
Occurrence Last Updated: 1998-07-15

Scientific Name: *Northern Claypan Vernal Pool*
Common Name: Northern Claypan Vernal Pool

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1.1

General Habitat:

Micro Habitat:

Last Date Observed: 1983-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1983-XX-XX
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

CROSS CREEK VERNAL POOLS. NEAR HWY 99 & ALONG CROSS CREEK 4 MILES NORTH OF GOSHEN. BOTH SIDES OF HWY.

Detailed Location:

CATTLE GRAZING SITE. IRRIGATED BARLEY SURROUNDS.

Ecological:

ANASTOMOSING POOLS ON CREEK FLOOD PLAIN. PROFUSE DOWNINGIA BELLA, LASTHENIA FREMONTII. GRASSLAND OF HORDEUM DEPRESSUM & DISTICHLIS. ELYMUS ALONG EPHEMERAL WATER WAYS (1980).

Threats:

General:

UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO. SEE HTTPS://WILDLIFE.CA.GOV/DATA/VEGCAMP/NATURAL-COMMUNITIES TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

PLSS: T17S, R23E, Sec. 34, SE (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4031608 E279616
Latitude/Longitude: 36.40439 / -119.45762
Elevation (feet): 270

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

GRI80F0022 GRIGGS, T. - FIELD SURVEY FORM FOR VERNAL POOLS ALONG CROSS CREEK, TULARE COUNTY 1980-04-27

WER83U0001 WERSCHKULL, G. & T. GRIGGS - NDDB PRINTOUT WITH ANNOTATIONS FROM 1983 FIELD OBSERVATIONS. 1983-06-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32735
EO Index: 17486
Key Quad: Traver (3611944)
Element Code: ICBRA03030
Occurrence Number: 110
Occurrence Last Updated: 1995-12-15

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
State: None
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 1992-02-22
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1992-02-22
Occurrence Rank: Unknown
Owner/Manager: PVT-HARRELL
Trend: Unknown
Presence: Presumed Extant

Location:

ESE OF TRAVER; 0.4 KM NW OF ROAD 80 AT COTTONWOOD CREEK.

Detailed Location:

HARRELL PROPERTY.

Ecological:

NATURAL POOL (SALTGRASS); 12 INCHES DEEP AT GREATEST DEPTH, PH=6.5.

Threats:

GRAZING (IN MIDST OF PRIME DAIRY DEVELOPMENT AREA); DEVELOPMENT (PROPOSAL FOR MODEL AIRCRAFT FIELD AS OF 1992).

General:

1 FEMALE (APPROX 16 MM IN LENGTH) OBSERVED BY R. HANSEN AND K. KIRKPATRICK; AMBYSTOMA CALIFORNIENSE OBSERVED NEAR SITE.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4034868 E285123
Latitude/Longitude: 36.43500 / -119.39716
Elevation (feet): 285

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:

WOO92R0001 WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR 8 TARGET SPECIES IN TULARE COUNTY (APPENDICES) 1992-09-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	32737	**EO Index:**	17096
Key Quad:	Goshen (3611934)	**Element Code:**	ICBRA03030
Occurrence Number:	111	**Occurrence Last Updated:**	2015-01-14

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	1995-02-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	1995-02-09	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.4 MILE NW OF THE INTERSECTION OF W GOSHEN AVENUE (ROAD J32) AND PLAZA DRIVE (ROAD J19), GOSHEN, WEST OF VISALIA.

Detailed Location:

MAPPED TO LOCATION GIVEN FOR OCCUPIED POOL ON JACUZZI PROPERTY, IN 1992 REPORT. SPECIMEN LOCALITY GIVEN ONLY AS "0.5 MI E OF GOSHEN CITY, T18S, R24E, S20, SW1/4;" ATTRIBUTED HERE.

Ecological:

NATIVE TOPOGRAPHY IN VACANT LOT; POOL WAS 9 INCHES DEEP; PH=6; FENCELINE OF LOT WAS DISKED; SURVEY MARKERS PRESENT.

Threats:

PROPOSED LAND CONVERSION; HISTORIC GRAZING.

General:

1 MALE BRANCHINECTA OBSERVED BY R. HANSEN AND K. KIRKPATRICK, 22 FEB 1992. 40 B. LYNCHI COLLECTED ON 6 FEB 1995 (CASIZ #103005 -103014). ANOTHER 30 COLLECTED 23 FEB-27 MAR 1995 (CASIZ #103290 & 11 OTHERS).

PLSS:	T18S, R24E, Sec. 20, SW (M)	**Accuracy:**	80 meters	**Area (acres):**	0
UTM:	Zone-11 N4024937 E284641	**Latitude/Longitude:**	36.34544 / -119.39978	**Elevation (feet):**	290

County Summary:	**Quad Summary:**
Tulare	Goshen (3611934)

Sources:

AVE95S0007	AVERY, S. - CASIZ #103005, 103006, 103007, 103008, 103009, 103010, 103011, 103012,103013, & 103014, COLLECTED "0.5 MI E OF GOSHEN CITY." 1995-02-06
GAN95S0003	GANZ, H. - CASIZ #103290, 103291, 103295, 103300, 103303, 103307, 103308, 103309, 103324, 103328, 103331, & 103334, COLLECTED "DUE EAST OF GOSHEN, 1 MILE EAST OF STATE HIGHWAY 99." 1995-03-27
WOO92R0001	WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR 8 TARGET SPECIES IN TULARE COUNTY (APPENDICES) 1992-09-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 32752
EO Index: 18594
Key Quad: Traver (3611944)
Element Code: ICBRA03030
Occurrence Number: 113
Occurrence Last Updated: 1996-01-29

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
State: None
Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 1993-01-09
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1993-01-09
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SSE OF TRAVER; APPROXIMATELY 1.0 KM NORTH OF HIGHWAY 99 AT CROSS CREEK.

Detailed Location:

Ecological:

POOL A: SLIGHT TURBIDITY, 10 X 30 M. POOL B: SLIGHT TURBIDITY, 10 X 50 M. POOL C: VERY TURBID, 10 X 50 M. ALL POOLS 54 DEGREES FAHRENHEIT.

Threats:

CURRENT LAND USE: CATTLE GRAZING; THREATS INCLUDE DEVELOPMENT OR HABITAT CONVERSION.

General:

B. LYNCHI OBSERVED BY G. AND K. KIRKPATRICK, AND R. HANSEN.

PLSS: T17S, R23E, Sec. 35, NW (M)
Accuracy: specific area
Area (acres): 15
UTM: Zone-11 N4032699 E279792
Latitude/Longitude: 36.41425 / -119.45597
Elevation (feet): 270

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

WOO93R0002 WOODWARD-CLYDE CONSULTANTS - FOCUSED BIOLOGICAL SURVEYS FOR VERNAL POOL FAIRY SHRIMP (BRANCHINECTA LYNCHI) IN TULARE COUNTY, CALIFORNIA. 1993-09-28

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 41569
EO Index: 41569
Key Quad: Burris Park (3611945)
Element Code: ICBRA03030
Occurrence Number: 206
Occurrence Last Updated: 2017-10-04

Scientific Name: *Branchinecta lynchi*
Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened
Rare Plant Rank:
State: None
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

VICINITY OF CROSS CREEK, 1.8 MI SE OF 4TH AVE AT EXCELSIOR AVE & 3.6 MI WSW OF HWY 99 AT AVE 328, SW OF BURRIS PARK.

Detailed Location:

1999: MAPPED TO LOCATION PROVIDED FOR VERNAL POOL(S) IN AREA "B" (NORTHMOST POLYGON). 2017: MAPPED TO SPECIFIC LOCATIONS GIVEN FOR OCCUPIED POOLS (SOUTHMOST POLYGONS).

Ecological:

VERNAL POOLS IN GRAZED, NON-NATIVE GRASSLAND. PROPERTIES BEING CONSIDERED AS MITIGATION LANDS FOR HIGH SPEED RAIL AUTHORITY IN 2017.

Threats:

DEVELOPMENT TO FARMLAND (1999).

General:

HUNDREDS OBSERVED HERE AND IN AREA "A" (OCCURRENCE #207); 64 COLLECTED 21 FEB-14 MAR 1999 (CASIZ #122186-122193). BRANCHINECTA CYSTS FOUND DURING 2016 DRY SEASON SURVEYS. FOUND IN 56 POOLS THROUGHOUT PROPERTY IN 2017; 12 POOLS MAPPED HERE.

PLSS: T18S, R23E, Sec. 8, SW (M)
Accuracy: non-specific area
Area (acres): 59
UTM: Zone-11 N4028817 E274975
Latitude/Longitude: 36.37817 / -119.50853
Elevation (feet): 261

County Summary:

Kings

Quad Summary:

Remnoy (3611935), Burris Park (3611945)

Sources:

HAL99F0003	HALSTEAD, J. & P. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 1999-03-04
HAL99S0013	HALSTEAD, J. - CASIZ #122186, 122187, 122188, 122189, 122190, 122191, 122192, & 122193, COLLECTED "12 MI NW VISALIA, SECTIONS 4& 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-02-22
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41571	**EO Index:**	41571
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	207	**Occurrence Last Updated:**	2017-10-04

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, ABOUT 1.5-2.1 MI SW OF RD 44 AT AVE 352 & 2.3-2.7 MI NW OF HWY 99 AT AVE 328, NW OF VISALIA.

Detailed Location:

1999: DETECTED IN VERNAL POOL(S) IN AREA "A." MAPPED TO SPECIFIC LOCATIONS GIVEN FOR OCCUPIED POOLS IN 2017.

Ecological:

VERNAL POOLS IN GRAZED, NON-NATIVE GRASSLAND. 2017: PROPERTIES BEING CONSIDERED AS MITIGATION LANDS FOR HIGH SPEED RAIL AUTHORITY.

Threats:

CONVERSION TO FARMLAND (1999).

General:

HUNDREDS OBSERVED HERE AND IN AREA "B" (OCCURRENCE #206); 64 COLLECTED 21 FEB-14 MAR 1999 (CASIZ #122186-122193). BRANCHINECTA CYSTS DETECTED DURING DRY SEASON SURVEYS IN 2016. ADULTS FOUND IN 56 POOLS IN 2017 SURVEYS, 12 POOLS MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, SW (M)	**Accuracy:**	specific area	**Area (acres):**	52
UTM:	Zone-11 N4030509 E276762	**Latitude/Longitude:**	36.39382 / -119.48911	**Elevation (feet):**	264

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

HAL99F0004	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 1999-03-04
HAL99S0013	HALSTEAD, J. - CASIZ #122186, 122187, 122188, 122189, 122190, 122191, 122192, & 122193, COLLECTED "12 MI NW VISALIA, SECTIONS 4& 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-02-22
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	43430	**EO Index:**	43430
Key Quad:	Waukena (3611925)	**Element Code:**	ICBRA03030
Occurrence Number:	248	**Occurrence Last Updated:**	2014-10-24

Scientific Name: *Branchinecta lynchi*

Common Name: vernal pool fairy shrimp

Listing Status: **Federal:** Threatened

State: None

Rare Plant Rank:

Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2000-03-11	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2000-03-11	**Occurrence Rank:**	Poor
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

ABOUT 0.7 MILE WNW OF ROAD 28 AT AVENUE 208 AND 2.2 MILES NNW OF WAUKENA; 10 MI WSW OF TULARE.

Detailed Location:

RAVISCIONI FARMS PROPERTY. MUSEUM SPECIMEN WITH LOCALITY "10 MI W TULARE, SECTION 19, TOWNSHIP 20S, RANGE 23E" ATTRIBUTED HERE.

Ecological:

NATIVE ANNUAL GRASSLAND/DRYLAND PASTURE WITH VERNAL POOLS TO THE WEST. AGRICULTURE (IRRIGATED CROPLAND) TO THE EAST, NORTH AND SOUTH.

Threats:

FARMLAND CONVERSION.

General:

HUNDREDS OF INDIVIDUALS OBSERVED, 11 MAR 2000; 22 COLLECTED AND DEPOSITED IN CAS (CASIZ #150391).

PLSS:	T20S, R23E, Sec. 19, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	22
UTM:	Zone-11 N4005707 E273086	**Latitude/Longitude:**	36.16958 / -119.52286	**Elevation (feet):**	227

County Summary:	**Quad Summary:**
Tulare	Waukena (3611925)

Sources:

HAL00F0001	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI (VERNAL POOL FAIRY SHRIMP) 2000-03-11
HAL00S0020	HALSTEAD, J. - CASIZ #150391, COLLECTED "10 MI W TULARE, SECTION 19, TOWNSHIP 20S, RANGE 23E" 2000-03-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6723	**EO Index:**	108492
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	911	**Occurrence Last Updated:**	2017-10-18

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, FROM 1.6 MI NNW-1.9 MI NW OF HWY 99 AT AVE 328 & 2.25 MI SSE OF RD 36 AT AVE 352, NW OF VISALIA

Detailed Location:

MAPPED TO PROVIDED MAPS.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

BRANCHINECTA CYSTS DETECTED DURING 2016 DRY SEASON SAMPLING. ADULTS FOUND IN 56 POOLS ACROSS PROPERTY IN 2017; 31 MAPPED HERE.

PLSS:	T17S, R23E, Sec. 34, SE (M)	**Accuracy:**	specific area	**Area (acres):**	86
UTM:	Zone-11 N4031342 E279102	**Latitude/Longitude:**	36.40187 / -119.46327	**Elevation (feet):**	272

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	A6724	**EO Index:**	108493
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA03030
Occurrence Number:	912	**Occurrence Last Updated:**	2017-10-19

Scientific Name: *Branchinecta lynchi* **Common Name:** vernal pool fairy shrimp

Listing Status: **Federal:** Threatened **Rare Plant Rank:**

State: None **Other Lists:** IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MOUNTAINS, AND SOUTH COAST MOUNTAINS, IN ASTATIC RAIN-FILLED POOLS.

Micro Habitat:

INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Excellent
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK, 2.0 MI NW OF HWY 99 AT AVE 328 & 1.8 MI SSE OF RD 44 AT AVE 352, NW OF VISALIA.

Detailed Location:

MAPPED TO PROVIDED MAPS.

Ecological:

CROSS CREEK PROPERTIES BEING EVALUATED AS POTENTIAL MITIGATION LANDS FOR THE HIGH SPEED RAIL AUTHORITY (2017).

Threats:

General:

BRANCHINECTA CYSTS DETECTED DURING 2016 DRY SEASON SAMPLING. ADULTS FOUND IN 56 POOLS ACROSS PROPERTY IN 2017; 1 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, SE (M)	**Accuracy:**	80 meters	**Area (acres):**	5
UTM:	Zone-11 N4030338 E277665	**Latitude/Longitude:**	36.39249 / -119.479	**Elevation (feet):**	268

County Summary:	**Quad Summary:**
Kings	Traver (3611944)

Sources:

HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0009	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2016-08-22
OBR17F0003	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR BRANCHINECTA LYNCHI 2017-03-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5572
Key Quad: Traver (3611944)
Occurrence Number: 492
EO Index: 118542
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

PROPERTY ON WEST SIDE OF HWY 99 AT CROSS CREEK, FROM HWY 99 TO ABOUT 2 MILES WEST, 4.75 MILES NNW OF GOSHEN.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W- 30, 51, 65, 101, 131, 135, 144, 182, 192, 241, 315, 319, 331, 350, 432, 464, 469, 476, 493, 511, 535, 541, 542, 564.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016)

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (24 MAPPED HERE, SEE ALSO EO #493, 494, & 495).

PLSS: T18S, R23E, Sec. 3 (M)
Accuracy: specific area
Area (acres): 208

UTM: Zone-11 N4031208 E279046
Latitude/Longitude: 36.40065 / -119.46387
Elevation (feet): 271

County Summary:

Kings, Tulare

Quad Summary:

Traver (3611944)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5573
Key Quad: Traver (3611944)
Occurrence Number: 493
EO Index: 118543
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, 2.1 MILES NW OF AVE 320 AT RD 52 AND 1.9 MILES SW OF CA-99 AT THE CROSS CREEK CROSSING.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W-641 & 642.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (2 MAPPED HERE, SEE ALSO EO #492, 494 & 495).

PLSS: T18S, R23E, Sec. 4, SW (M)
Accuracy: specific area
Area (acres): 19
UTM: Zone-11 N4030162 E276981
Latitude/Longitude: 36.39075 / -119.48657
Elevation (feet): 268

County Summary:

Kings

Quad Summary:

Traver (3611944)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5574
Key Quad: Traver (3611944)
Occurrence Number: 494
EO Index: 118544
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

Rare Plant Rank:

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, S SIDE CROSS CREEK, 2.5 MI NW OF AVE 320 AT RD 52, AND 3 MI W OF CA-99 AT AVE 328, NNW OF GOSHEN.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOLS W-639, 651, 655, 657, 658, 665, & 671.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (7 MAPPED HERE, SEE ALSO EO #492, 493 & 495)

PLSS: T18S, R23E, Sec. 5 (M)
Accuracy: specific area
Area (acres): 55
UTM: Zone-11 N4029912 E275889
Latitude/Longitude: 36.38824 / -119.49867
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Traver (3611944), Burris Park (3611945)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5575
Key Quad: Burris Park (3611945)
Occurrence Number: 495

EO Index: 118545
Element Code: ICBRA06010
Occurrence Last Updated: 2020-05-27

Scientific Name: *Linderiella occidentalis*
Common Name: California linderiella

Listing Status: **Federal:** None
State: None

Rare Plant Rank:
Other Lists: IUCN_NT-Near Threatened

CNDDB Element Ranks: **Global:** G2G3
State: S2S3

General Habitat:

SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.

Micro Habitat:

WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TOTAL DISSOLVED SOLIDS.

Last Date Observed: 2016-09-14
Last Survey Date: 2016-09-14
Owner/Manager: PVT
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY, ON SE SIDE OF CROSS CREEK ABOUT 2.7 MI WNW OF AVE 320 AT RD 52, 3.4 MI SW OF CA-99 AT AVE 328.

Detailed Location:

MAPPED TO LOCATIONS PROVIDED IN REPORT. THIS OCCURRENCE INCLUDES POOL W-680.

Ecological:

PROPERTY HAS POTENTIAL FOR SOME OF THE HIGHEST RATES OF LARGE BRANCHIOPODS IN THE STATE.

Threats:

POTENTIAL HIGH-SPEED RAIL CONSTRUCTION SITE (2016).

General:

FOUND IN 34 OF 46 VERNAL POOLS SAMPLED DURING DRY-SEASON SURVEYS AUG-SEP 2016 (7 MAPPED HERE, SEE ALSO EO #492, 493 & 494)

PLSS: T18S, R23E, Sec. 8, E (M)
UTM: Zone-11 N4028911 E275251

Accuracy: specific area
Latitude/Longitude: 36.37908 / -119.50549

Area (acres): 11
Elevation (feet): 263

County Summary:

Kings

Quad Summary:

Burris Park (3611945)

Sources:

HEL16R0003 HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 40395
EO Index: 35402
Key Quad: Traver (3611944)
Element Code: ICBRA10010
Occurrence Number: 129
Occurrence Last Updated: 2015-02-19

Scientific Name: *Lepidurus packardi*
Common Name: vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered
State: None
Rare Plant Rank:
Other Lists: IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed: 1998-04-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1998-04-10
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

SOUTH OF CROSS CREEK, ABOUT 1.5 MILES NNE OF HIGHWAY 99 AT AVE 328, 4.5 MILES SE OF TRAVER.

Detailed Location:

Ecological:

NON-NATIVE ANNUAL GRASSLAND WITH VERNAL POOLS. BURROWING OWLS ALSO OBSERVED IN THE VICINITY. AGRICULTURE TO SOUTH AND EAST. AIR PHOTOS FROM 2014 SHOW POSSIBLE CHANGE IN HYDROLOGY (FLOODING OF FIELD ADJACENT TO IRRIGATION DITCH).

Threats:

THREATENED BY AGRICULTURAL CONVERSION (1998).

General:

100S OF TADPOLE SHRIMP OBSERVED ON 10 APRIL 1998. 20 COLLECTED, 15 IN CAS (CASIZ #118377).

PLSS: T17S, R23E, Sec. 35, SE (M)
Accuracy: 1/10 mile
Area (acres): 0
UTM: Zone-11 N4031773 E281054
Latitude/Longitude: 36.40620 / -119.44165
Elevation (feet): 280

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL98F0001	HALSTEAD, J.A. & P.S. HALSTEAD (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 1998-04-10
HAL98S0003	HALSTEAD, J. - CASIZ #118377, COLLECTED "10 MILES NW OF VISALIA, T17S R23S, NE1/4 OF SE1/4 OF SEC 35." 1998-04-10
HAL98U0001	HALSTEAD, J. A. - SCIENTIFIC COLLECTING REPORT OF SPECIMENS COLLECTED 1998-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41568	**EO Index:**	41568
Key Quad:	Burris Park (3611945)	**Element Code:**	ICBRA10010
Occurrence Number:	139	**Occurrence Last Updated:**	2018-01-22

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

0.3 MILE WEST OF CROSS CREEK, 1.8 MILES SE OF JUNCTION OF 4TH AVENUE AND EXCELSIOR AVE, ABOUT 6 MILES SW OF BURRIS PARK.

Detailed Location:

1999: VERNAL POOL(S) IN AREA "B." 2017: CROSS CREEK WEST PROPERTY.

Ecological:

1999: VERNAL POOLS IN GRAZED NON-NATIVE GRASSLAND. 2017: PROPERTY BEING CONSIDERED FOR MITIGATION BANK BY HIGH SPEED RAIL AUTHORITY.

Threats:

CONVERSION TO FARMLAND (1999).

General:

100S OBSERVED HERE & IN AREA "A" (OCCURRENCE #140) ON 14 MAR 1999; COLLECTIONS DEPOSITED AT CAS. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016; 1 MAPPED HERE. DETECTED AT ABOUT 20 SAMPLING SITES IN 5 POOLS, JAN-MAR 2017; 1 MAPPED HERE.

PLSS:	T18S, R23E, Sec. 8, NW (M)	**Accuracy:**	specific area	**Area (acres):**	14
UTM:	Zone-11 N4029078 E274978	**Latitude/Longitude:**	36.38052 / -119.50857	**Elevation (feet):**	263

County Summary:	**Quad Summary:**
Kings	Burris Park (3611945)

Sources:

HAL99F0001	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI (TADPOLE SHRIMP) 1999-03-04
HAL99S0010	HALSTEAD, J. - CASIZ #122199, 122201, & 122202, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-14
HAL99S0011	HALSTEAD, J. - CASIZ #122200, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-06
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	41572	**EO Index:**	41572
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	140	**Occurrence Last Updated:**	2018-01-22

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2017-03-01	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-01	**Occurrence Rank:**	Fair
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

BOTH SIDES OF CROSS CREEK ABOUT 1.25-2.8 MILES SW OF WHERE IT CROSSES HIGHWAY 99, 4 MILES SOUTH OF TRAVER.

Detailed Location:

1999: VERNAL POOL(S) IN AREA "A." 2016-17: ON CROSS CREEK EAST AND WEST PROPERTIES.

Ecological:

VERNAL POOLS IN NON-NATIVE GRASSLAND. 2016-17: PROPERTY BEING EVALUATED FOR HIGH SPEED RAIL AUTHORITY MITIGATION BANK.

Threats:

CONVERSION TO FARMLAND (1999).

General:

100S OBSERVED HERE & IN AREA "B" (OCCURRENCE #139) IN 1999; COLLECTIONS DEPOSITED AT CAS. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016; 12 MAPPED HERE. DETECTED IN 23 POOLS ACROSS PROPERTY IN 2017; ABOUT 9 SAMPLING SITES MAPPED HERE.

PLSS:	T18S, R23E, Sec. 4, NW (M)	**Accuracy:**	specific area	**Area (acres):**	111
UTM:	Zone-11 N4030584 E276690	**Latitude/Longitude:**	36.39448 / -119.48994	**Elevation (feet):**	263

County Summary:	**Quad Summary:**
Kings	Traver (3611944), Burris Park (3611945)

Sources:

HAL99F0002	HALSTEAD, J.A. & P.S. HALSTEAD - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI (TADPOLE SHRIMP) 1999-03-04
HAL99S0010	HALSTEAD, J. - CASIZ #122199, 122201, & 122202, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-14
HAL99S0011	HALSTEAD, J. - CASIZ #122200, COLLECTED FROM "12 MI NW VISALIA, SECTIONS 4 & 8, T18S, R23E... VERNAL POOL GRASSLANDS NEAR CROSS CREEK." 1999-03-06
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B2907	**EO Index:**	87257
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	292	**Occurrence Last Updated:**	2019-04-16

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2018-04-09	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2018-04-09	**Occurrence Rank:**	Good
Owner/Manager:	PVT-WESTERVELT ECOLOGICAL SVCS	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

WEST SIDE OF ROAD 80 (ALTA AVE) ALONG COTTONWOOD CREEK ABOUT 0.5 MILE SOUTH OF AVENUE 360, ABOUT 5 MILES ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROJECT SITE, LOCATION DESCRIPTIONS OF POOLS, & COORDINATES GIVEN FOR 2017 & 2018 DETECTIONS. 1992: "COMMON IN THE TURBID WATER OF POOL #3," FOUND "IN COTTONWOOD CREEK" & "IN THE IRRIGATION CANAL." 2018: VP-6 & 47.

Ecological:

NON-NATIVE GRASSLAND, NORTHERN CLAYPAN VERNAL POOL, GREAT VALLEY WILLOW SCRUB, VALLEY SACATON & WILDRYE GRASSLANDS IN AGRICULTURAL AREA. NO CHANGE BETWEEN 1994 & 2011 AERIAL; DISKING APPARENT IN 2011 IMAGE. MITIGATION SITE AS OF 2018.

Threats:

General:

DETECTED & PHOTOGRAPHED ON 21 MAR, 21 & 22 JUN, 1992. NONE DETECTED DURING NON-PROTOCOL SAMPLING OF 7 VERNAL POOLS IN THE NE 1/4 OF FEATURE ALONG CANAL, 2011. MANY DETECTED AT 6 SITES, 2017. ABOUT 10 DETECTED IN 2 POOLS, 2018.

PLSS:	T17S, R24E, Sec. 20, SW (M)	**Accuracy:**	non-specific area	**Area (acres):**	151
UTM:	Zone-11 N4034747 E284909	**Latitude/Longitude:**	36.43386 / -119.39953	**Elevation (feet):**	288

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX
HAN92R0001	HANSEN, R. B. - BIOLOGICAL ASSESSMENT OF NATURAL HABITAT AREAS & SENSITIVE SPECIES STATUS ON THE SITE OF A PROPOSED REGIONAL FLYING SITE... (HARRELL RANCH) IN TULARE COUNTY, CA. 1992-07-XX
HEL17F0017	HELM, B. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-03-08
OBR18F0010	O'BRIEN, S. (HELM BIOLOGICAL CONSULTING) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2018-04-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86221	**EO Index:**	87258
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	293	**Occurrence Last Updated:**	2012-06-28

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2011-05-24	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-24	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

VICINITY OF CROSS CREEK (COTTONWOOD CRK) ABOUT 1.3 MI SW OF ROAD 80 (ALTA AVE) AT AVE 360, & ABOUT 4.7 MI ESE OF TRAVER.

Detailed Location:

MAPPED GENERALLY TO PROVIDED TOPOGRAPHIC AND AERIAL MAPS (GEOREFERENCED). THIS SITE REPRESENTS THE GENERAL AREA OF 2 VERNAL POOLS (#48 & 50) OF 64 ON THE PROJECT SITE THAT CONTAINED VERNAL POOL TADPOLE SHRIMP.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS, BUT WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. WESTERN SPADEFOOT TOAD (SPEA HAMMONDII) ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

UNKNOWN NUMBER OF LEPIDURUS PACKARDI DETECTED IN TWO VERNAL POOLS DURING 3 SURVEYS (NON-PROTOCOL) FROM 1 APR - 24 MAY 2011. ABOUT 10 TOTAL ADULTS WERE DETECTED IN 3 POOLS FROM SITE.

PLSS:	T17S, R24E, Sec. 30, NE (M)	**Accuracy:**	non-specific area	**Area (acres):**	48
UTM:	Zone-11 N4034238 E284038	**Latitude/Longitude:**	36.42907 / -119.40907	**Elevation (feet):**	285

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0019	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2011-04-25
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	86222	**EO Index:**	87264
Key Quad:	Traver (3611944)	**Element Code:**	ICBRA10010
Occurrence Number:	294	**Occurrence Last Updated:**	2012-06-28

Scientific Name: *Lepidurus packardi* **Common Name:** vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered **Rare Plant Rank:**

State: None **Other Lists:** IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3

State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed:	2011-05-16	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2011-05-16	**Occurrence Rank:**	Good
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

EAST SIDE OF HWY 99, ABOUT 1/4 MILE NORTH OF WHERE CROSS CREEK PASSES UNDER HWY 99, ABOUT 3.6 MI SSE OF TRAVER.

Detailed Location:

VERNAL POOL #6. MAPPED GENERALLY TO TOPOGRAPHIC AND AERIAL MAPS (GEOREFERENCED). VERNAL POOL TADPOLE SHRIMP DETECTED IN 3 OF 64 POOLS ON THE PROJECT SITE.

Ecological:

HABITAT DESCRIBED AS NON-NATIVE GRASSLANDS, BUT WAS RECENTLY DISKED (OCT 2010) AND PLANTED WITH WHEAT. SITE HAS NOT BEEN LEVELED LIKE ADJACENT AGRICULTURE LANDS. WESTERN SPADEFOOT TOAD (SPEA HAMMONDII) ALSO FOUND ON SITE.

Threats:

THREATENED BY CONVERSION TO AGRICULTURE AND ALTERATIONS TO VERNAL POOL GEOMORPHOLOGY.

General:

UNKNOWN NUMBER OF LEPIDURUS PACKARDI DETECTED IN THIS VERNAL POOL DURING 3 SURVEYS (NON-PROTOCOL) FROM 18 MAR - 16 MAY 2011. ABOUT 10 TOTAL ADULTS WERE DETECTED IN 3 POOLS FROM SITE.

PLSS:	T17S, R23E, Sec. 35, E (M)	**Accuracy:**	1/10 mile	**Area (acres):**	0
UTM:	Zone-11 N4032047 E279765	**Latitude/Longitude:**	36.40837 / -119.45608	**Elevation (feet):**	275

County Summary:	**Quad Summary:**
Tulare	Traver (3611944)

Sources:

HAL11F0019	HALSTEAD, J. & A. ROBERTS (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2011-04-25
HAL11R0001	HALSTEAD & ASSOCIATES - CALIFORNIA TIGER SALAMANDER SURVEY REPORT FOR MILKY WAY DAIRY'S DRYLAND FARMING ACTIVITIES ALONG CROSS CREEK NEAR VISALIA (TULARE COUNTY, CALIFORNIA). 2011-12-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 86223
EO Index: 87265
Key Quad: Traver (3611944)
Element Code: ICBRA10010
Occurrence Number: 295
Occurrence Last Updated: 2018-01-22

Scientific Name: *Lepidurus packardi*
Common Name: vernal pool tadpole shrimp

Listing Status: **Federal:** Endangered
State: None
Rare Plant Rank:
Other Lists: IUCN_EN-Endangered

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

INHABITS VERNAL POOLS AND SWALES IN THE SACRAMENTO VALLEY CONTAINING CLEAR TO HIGHLY TURBID WATER.

Micro Habitat:

POOLS COMMONLY FOUND IN GRASS-BOTTOMED SWALES OF UNPLOWED GRASSLANDS. SOME POOLS ARE MUD-BOTTOMED AND HIGHLY TURBID.

Last Date Observed: 2017-03-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-03-01
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

BOTH SIDES OF CROSS CREEK FROM THE HWY 99 CROSSING TO ABOUT 0.9 MILES SW, ABOUT 4 MILES SSE OF TRAVER.

Detailed Location:

ON CROSS CREEK EAST PROPERTY. MAPPED TO PROVIDED MAPS. 2007: ADJACENT TO ROAD 60 WHICH IS A FRONTAGE ROAD TO HWY 99.

Ecological:

2007: WETLAND POND IN INTERMITTENT DRAINAGE OF CROSS CREEK SURROUNDED BY NON-NATIVE ANNUAL GRASSLAND USED FOR CATTLE GRAZING. 2016-17: POTENTIAL MITIGATION PROPERTY FOR HIGH SPEED RAIL AUTHORITY.

Threats:

General:

ABOUT 30 ADULTS DETECTED ON 17 MAY 2007. CYSTS FOUND IN 31 OF 46 POOLS DRY-SAMPLED IN 2016, 18 MAPPED HERE. DETECTED IN 18 POOLS THROUGHOUT CROSS CREEK EAST PROPERTY IN 2017 (ABOUT 9 SAMPLING SITES REPRESENTED HERE).

PLSS: T17S, R23E, Sec. 34, SE (M)
Accuracy: specific area
Area (acres): 153
UTM: Zone-11 N4031277 E279078
Latitude/Longitude: 36.40128 / -119.46353
Elevation (feet): 271

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

HAL07F0002	HALSTEAD, J. ET AL (HALSTEAD ASSOCIATES) - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2007-05-17
HEL16R0003	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL DRY-SEASON SAMPLING FOR FEDERALLY LISTED LARGE BRANCHIOPODS AT THE CROSS CREEK PROPERTIES, KINGS AND TULARE COUNTIES. 2016-09-XX
HEL17R0001	HELM, B. (HELM BIOLOGICAL CONSULTING) - RECONNAISSANCE-LEVEL LARGE BRANCHIOPOD WET-SEASON SURVEYS AT THE CROSS CREEK PROPERTIES KINGS AND TULARE COUNTIES. 2017-03-XX
OBR16F0008	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2016-08-22
OBR17F0004	O'BRIEN, S. ET AL. - FIELD SURVEY FORM FOR LEPIDURUS PACKARDI 2017-02-01

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 61636
EO Index: 61672
Key Quad: Guernsey (3611926)
Element Code: IICOL0220E
Occurrence Number: 2
Occurrence Last Updated: 2005-06-17

Scientific Name: *Cicindela tranquebarica joaquinensis*
Common Name: San Joaquin tiger beetle

Listing Status: **Federal:** None
State: None
Rare Plant Rank:
Other Lists:

CNDDB Element Ranks: **Global:** G5T1
State: S1

General Habitat:
KNOWN ONLY FROM TULARE AND KINGS COUNTIES.

Micro Habitat:

Last Date Observed: 2005-XX-XX
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2005-XX-XX
Occurrence Rank: Unknown
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
ABOUT 3.8-5.8 MILES WEST OF GUERNSEY.

Detailed Location:
SOUTH SIDE OF KANSAS AVENUE BETWEEN 14TH AND 16TH AVENUES.

Ecological:

Threats:

General:
UNKNOWN NUMBER COLLECTED IN SPRING 2005.

PLSS: T20S, R21E, Sec. 07 (M)
Accuracy: non-specific area
Area (acres): 222
UTM: Zone-11 N4010646 E254779
Latitude/Longitude: 36.20960 / -119.72773
Elevation (feet): 215

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:

HAI05U0003 HAINES, D. - NOTES OF PHONE CONVERSATION BETWEEN SANDY SHANKS & DENNIS HAINES REGARDING HIS COLLECTION DATA FOR THE SAN JOAQUIN TIGER BEETLE, CICINDELA TRANQUEBARICA NEW SUBSPECIES. 2005-05-09

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B9082
Key Quad: Traver (3611944)
Occurrence Number: 123
EO Index: 124256
Element Code: IIHYM24260
Occurrence Last Updated: 2023-06-28

Scientific Name: *Bombus pensylvanicus*
Common Name: American bumble bee

Listing Status: **Federal:** None
State: None
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3G4
State: S2

Rare Plant Rank:

General Habitat:

Micro Habitat:

LONG-TONGUED; FORAGES ON A WIDE VARIETY OF FLOWERS INCLUDING VETCHES (VICIA), CLOVERS (TRIFOLIUM), THISTLES (CIRSIUM), SUNFLOWERS (HELIANTHUS), ETC. NESTS ABOVE GROUND UNDER LONG GRASS OR UNDERGROUND. QUEENS OVERWINTER IN ROTTEN WOOD OR UNDERGROUND.

Last Date Observed: 1975-10-07
Last Survey Date: 1975-10-07
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

VICINITY OF ROAD 80 AT AVENUE 368, 5.5 MI S OF DINUBA AND 10.5 MI NW OF VISALIA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED NON-SPECIFICALLY TO LOCATION STATED AS "5.5 MI S OF DINUBA." MUSEUM GEOREFERENCING PUTS THIS 9.3 MILES S OF DINUBA NEAR SAINT JOHNS RIVER.

Ecological:

AREA COMPRISED PRIMARILY OF DAIRY AND AGRICULTURAL FIELDS.

Threats:

General:

4 ADULT MALES COLLECTED BY E. LINSLEY ET AL. ON 7 OCT 1975 (EMEC #550190, #550191, #550192, & #550193).

PLSS: T17S, R24E, Sec. 8 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4037642 E285893
Latitude/Longitude: 36.46015 / -119.38935
Elevation (feet): 295

County Summary:	Quad Summary:
Tulare	Monson (3611943), Traver (3611944)

Sources:

LIN75S0011	LINSLEY, E. ET AL. - EMEC #550190, #550191, #550192, & #550193 COLLECTED 5.5 MI S OF DINUBA, TULARE COUNTY 1975-10-07
RIC22D0001	RICHARDSON, L. (XERCES SOCIETY) - CALIFORNIA EXTRACT OF BUMBLE BEES OF NORTH AMERICA DATABASE. HTTPS://WWW.LEIFRICHARDSON.ORG/BBNA.HTML. ACCESSED 7 DEC 2022. 2022-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B9085
Key Quad: Visalia (3611933)
Occurrence Number: 125

EO Index: 124262
Element Code: IIHYM24260
Occurrence Last Updated: 2023-06-28

Scientific Name: *Bombus pensylvanicus*
Common Name: American bumble bee

Listing Status: **Federal:** None
State: None

Rare Plant Rank:
Other Lists: IUCN_VU-Vulnerable

CNDDB Element Ranks: **Global:** G3G4
State: S2

General Habitat:

Micro Habitat:

LONG-TONGUED; FORAGES ON A WIDE VARIETY OF FLOWERS INCLUDING VETCHES (VICIA), CLOVERS (TRIFOLIUM), THISTLES (CIRSIUM), SUNFLOWERS (HELIANTHUS), ETC. NESTS ABOVE GROUND UNDER LONG GRASS OR UNDERGROUND. QUEENS OVERWINTER IN ROTTEN WOOD OR UNDERGROUND.

Last Date Observed: 1979-09-18
Last Survey Date: 1979-09-18
Owner/Manager: UNKNOWN
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

TAGUS, NEAR CA-99 AT ROAD 92B, ABOUT 5.8 MI SW OF VISALIA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED NON-SPECIFICALLY TO COMMUNITY OF TAGUS.

Ecological:

Threats:

General:

2 ADULT MALES & 4 ADULT FEMALES COLLECTED BY E. LINSLEY & J. LINSLEY ON 18 SEP 1979 (EMEC #550194, #550195, #550730, #550731, #550732, & #550733).

PLSS: T19S, R24E, Sec. 15 (M)
UTM: Zone-11 N4016589 E287390

Accuracy: 1 mile
Latitude/Longitude: 36.27084 / -119.3669

Area (acres): 1,987
Elevation (feet): 298

County Summary:

Tulare

Quad Summary:

Visalia (3611933), Goshen (3611934)

Sources:

LIN79S0003	LINSLEY, E. & J. LINSLEY - EMEC #550194, #550195, #550730, #550731, #550732, & #550733 COLLECTED NEAR TAGUS, TULARE COUNTY 1979-09-18
RIC22D0001	RICHARDSON, L. (XERCES SOCIETY) - CALIFORNIA EXTRACT OF BUMBLE BEES OF NORTH AMERICA DATABASE. HTTPS://WWW.LEIFRICHARDSON.ORG/BBNA.HTML. ACCESSED 7 DEC 2022. 2022-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
Key Quad: Goshen (3611934)
Occurrence Number: 22
EO Index: 118554
Element Code: PDAST5L030
Occurrence Last Updated: 2020-05-28

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1914-03-26
Last Survey Date: 1914-03-26
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
GOSHEN.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS IN THE VICINITY OF GOSHEN BASED ON 1897 & 1914 COLLECTIONS.

Ecological:

Threats:
VICINITY HAS BEEN IMPACTED BY DEVELOPMENT OR CONVERSION TO AGRICULTURE.

General:
SITE BASED ON TWO SETCHELL COLLECTIONS FROM 1897 AND A 1914 EASTWOOD COLLECTION FROM GOSHEN. REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet):

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

EAS14S0010	EASTWOOD, A. - EASTWOOD #3919 CAS-BOT-BC #354207 & #354210, CAS #193460 & #5448, JEPS #17308, UC #895380, POM #50940 1914-03-26
SET97S0004	SETCHELL, W. - SETCHELL SN UC #80029 1897-04-23
SET97S0005	SETCHELL, W. - SETCHELL SN UC #31348 1897-04-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number:	B3004	**EO Index:**	118558
Key Quad:	Traver (3611944)	**Element Code:**	PDAST5L030
Occurrence Number:	23	**Occurrence Last Updated:**	2020-07-02

Scientific Name: *Lasthenia chrysantha* **Common Name:** alkali-sink goldfields

Listing Status: **Federal:** None **Rare Plant Rank:** 1B.1

State: None **Other Lists:**

CNDDB Element Ranks: **Global:** G2

State: S2

General Habitat:

VERNAL POOLS.

Micro Habitat:

ALKALINE. 0-200 M.

Last Date Observed:	2017-03-31	**Occurrence Type:**	Natural/Native occurrence
Last Survey Date:	2017-03-31	**Occurrence Rank:**	Unknown
Owner/Manager:	PVT	**Trend:**	Unknown
Presence:	Presumed Extant		

Location:

CROSS CREEK PROPERTY, ALONG WEST SIDE OF HIGHWAY 99, 3.7 MILES NW OF GOSHEN.

Detailed Location:

MAPPED BY CNDDB AS MANY POLYGONS BASED ON 2016-2017 PRESTON DIGITAL DATA FOR PUCCINELLA SIMPLEX. 1925 ABRAMS COLECTION FROM "TRAVERS TO GOSHEN" AND 1940 COPELAND COLLECTION FROM "15 MI N OF TULARE, U.S. 99" ALSO ATTRIBUTED HERE.

Ecological:

SHALLOW ALKALINE VERNAL POOLS AND SCALDS, WITH LEPIDIUM DICTYOTUM, HORDEUM DEPRESSUM, CENTROMADIA PUNGENS, JUNCUS BUFONIUS, SPERGULARIA ATROSPERMA, AND THE RARE PUCCINELLIA SIMPLEX.

Threats:

NONE NOTED.

General:

SITE BASED ON 2016 & 2017 PRESTON SURVEYS FOR PUCCINELLIA SIMPLEX WHERE LASTHENIA IS LISTED AS AN ASSOCIATE. UNKNOWN NUMBER OF PLANTS OBSERVED DURING PUCCINELLIA SURVEYS. PROPOSED MITIGATION SITE.

PLSS:	T18S, R23E, Sec. 3, N (M)	**Accuracy:**	specific area	**Area (acres):**	173
UTM:	Zone-11 N4031132 E278793	**Latitude/Longitude:**	36.39991 / -119.46666	**Elevation (feet):**	270

County Summary:	**Quad Summary:**
Kings, Tulare	Traver (3611944)

Sources:

ABR25S0005	ABRAMS, L. - ABRAMS #10788 CAS-BOT-BC #354206, DS #148202, POM #88213 1925-03-24
COP40S0001	COPELAND, H. - COPELAND SN UC #754033 1940-03-16
PRE16F0008	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2016-03-30
PRE17F0030	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-03-31

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5585
Key Quad: Remnoy (3611935)
Occurrence Number: 24

EO Index: 118561
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-03

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None

Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1965-04-11
Last Survey Date: 1965-04-11
Owner/Manager: UNKNOWN
Presence: Presumed Extant

Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
5 MILES EAST OF HANFORD ON GRANGEVILLE BLVD.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB ALONG E GRANGEVILLE BLVD ABOUT 4.5-5.5 ROAD MILES EAST OF 10TH AVE IN HANFORD BASED ON A 1965 JUNELL COLLECTION.

Ecological:
RANGELAND.

Threats:
MUCH OF AREA HAS BEEN CONVERTED TO AGRICULTURE.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1965 JUNELL COLLECTION. REMAINING HABITAT IN AREA SHOULD BE SEARCHED. NEEDS FIELDWORK.

PLSS: T18S, R22E, Sec. 24, S (M)
UTM: Zone-11 N4024984 E271933

Accuracy: non-specific area
Latitude/Longitude: 36.34293 / -119.54129

Area (acres): 110
Elevation (feet): 255

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
JUN65S0001 JUNELL, D. - JUNELL #19 HSC #5145 1965-04-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5587
Key Quad: Remnoy (3611935)
Occurrence Number: 25
EO Index: 118565
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-03

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1958-03-15
Last Survey Date: 1958-03-15
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:
AT 6TH AVENUE AND LACEY BOULEVARD, HANFORD, HIGHWAY 198.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB AROUND THE INTERSECTION OF 6TH AVE AND LACEY BLVD EAST OF HANFORD BASED ON A 1958 ORNDUFF COLLECTION.

Ecological:
IN ALKALI-SCALDED FIELD, ADJACENT TO SCALDS.

Threats:
MUCH OF AREA HAS BEEN CONVERTED TO AGRICULTURE.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1958 ORNDUFF COLLECTION. NEEDS FIELDWORK.

PLSS: T18S, R22E, Sec. 34, NE (M)
Accuracy: 2/5 mile
Area (acres): 280
UTM: Zone-11 N4023402 E269752
Latitude/Longitude: 36.32816 / -119.56511
Elevation (feet): 250

County Summary:
Kings

Quad Summary:
Remnoy (3611935)

Sources:
ORN58S0020 ORNDUFF, R. - ORNDUFF #4784 UC #1363804 1958-03-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5593
EO Index: 118570
Key Quad: Laton (3611946)
Element Code: PDAST5L030
Occurrence Number: 27
Occurrence Last Updated: 2020-05-28

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1958-03-15
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1958-03-15
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:
1.1 MILES NORTH OF LATON, DEL RIO RD.

Detailed Location:
ROADSIDE, ON EAST SIDE OF ROAD. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS ALONG S FOWLER AVE ABOUT 1.1 ROAD MILES NORTH OF LATON BASED ON A 1958 ORNDUFF COLLECTION.

Ecological:
LOW PLACES, ROADSIDE, ALKALI FLATS.

Threats:
AREA HAS BEEN HIGHLY MODIFIED BY AGRICULTURAL CONVERSION.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1958 ORNDUFF COLLECTION. POSSIBLY EXTIRPATED; REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T17S, R21E, Sec. 16, E (M)
Accuracy: non-specific area
Area (acres): 31
UTM: Zone-11 N4037404 E258853
Latitude/Longitude: 36.45159 / -119.69075
Elevation (feet): 255

County Summary:
Fresno

Quad Summary:
Laton (3611946)

Sources:
ORN58S0021 ORNDUFF, R. - ORNDUFF #4783 UC #1363805, RSA #202273 1958-03-15

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5595
Key Quad: Laton (3611946)
Occurrence Number: 28

EO Index: 118572
Element Code: PDAST5L030
Occurrence Last Updated: 2020-07-02

Scientific Name: *Lasthenia chrysantha*
Common Name: alkali-sink goldfields

Listing Status: **Federal:** None
State: None

Rare Plant Rank: 1B.1
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
VERNAL POOLS.

Micro Habitat:
ALKALINE. 0-200 M.

Last Date Observed: 1934-03-26
Last Survey Date: 1934-03-26
Owner/Manager: UNKNOWN
Presence: Possibly Extirpated

Occurrence Type: Natural/Native occurrence
Occurrence Rank: None
Trend: Unknown

Location:
4 MILES NORTH OF LATON.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS VARIOUS MEASUREMENTS OF ABOUT 4 AIR, ROAD, AND RAILROAD MILES NORTH OF LATON, BASED ON A 1934 ROSE COLLECTION.

Ecological:
ALKALINE PLAINS.

Threats:
AREA HAS BEEN HIGHLY MODIFIED BY AGRICULTURAL CONVERSION.

General:
ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1934 ROSE COLLECTION. PROBABLY EXTIRPATED; SURROUNDING AREA HAS BEEN CONVERTED TO AGRICULTURE.

PLSS: T17S, R21E, Sec. 4 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4041585 E258465
Latitude/Longitude: 36.48914 / -119.69638
Elevation (feet):

County Summary:
Fresno

Quad Summary:
Laton (3611946), Conejo (3611956)

Sources:

ROS34S0013 ROSE, L. - ROSE #34078 CAS-BOT-BC #354152, #354153 & #354158, CAS #235719, DS #379895 & #232243, JEPS #17264, RSA #94389 1934-03-26

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 3244
Key Quad: Goshen (3611934)
Element Code: PDCHE040B0
Occurrence Number: 30
Occurrence Last Updated: 2009-11-02

Scientific Name: *Atriplex cordulata var. cordulata*
Common Name: heartscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G3T2
State: S2

General Habitat:

CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, MEADOWS AND SEEPS.

Micro Habitat:

ALKALINE FLATS AND SCALDS IN THE CENTRAL VALLEY, SANDY SOILS. 3-275 M.

Last Date Observed: 1938-09-05
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1938-05-09
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

NEAR GOSHEN.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON GOSHEN.

Ecological:

Threats:

RESIDENTIAL AND COMMERCIAL DEVELOPMENT SURROUNDS; MAY NOT BE SUITABLE HABITAT REMAINING (SEE ATRIPLEX SUBTILIS EO 8).

General:

ONLY SOURCE OF INFO IS 1938 EASTWOOD & HOWELL COLLECTION. AREA SHOULD BE FIELD CHECKED FOR THE PRESENCE OF SUITABLE HABITAT. ID OF SPECIMEN SHOULD ALSO BE CHECKED; PRESTON (2009) HAS NOT FOUND THIS POPULATION, POSSIBLY A. ERECTICAULIS.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet): 285

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

EAS38S0010	EASTWOOD, A. & J. HOWELL - EASTWOOD #6274 RSA #22184, CAS #261511 1938-09-05
PRE09U0002	PRESTON, R. - ADDITIONAL INFORMATION REGARDING FIELD SURVEY FORMS SUBMITTED FOR ATRIPLEX CORDULATA 2009-10-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 24422
Key Quad: Laton (3611946)
Occurrence Number: 13
EO Index: 7077
Element Code: PDCHE042L0
Occurrence Last Updated: 2011-05-31

Scientific Name: *Atriplex depressa*
Common Name: brittlescale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, MEADOWS AND SEEPS, PLAYAS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:

USUALLY IN ALKALI SCALDS OR ALK. CLAY IN MEADOWS OR ANNUAL GRASSLND; RARELY ASSOCIATED WITH RIPARIAN, MARSHES, OR VERNAL POOLS. 1-325 M.

Last Date Observed: XXXX-XX-XX
Last Survey Date: XXXX-XX-XX
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

LATON.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON LATON.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION IS UNDATED KEARNEY COLLECTION. NEEDS FIELDWORK.

PLSS: T17S, R21E, Sec. 22 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4035584 E259139
Latitude/Longitude: 36.43527 / -119.68698
Elevation (feet):

County Summary:

Fresno, Kings

Quad Summary:

Laton (3611946)

Sources:

KEANDS0001 KEARNEY, T. - KEARNEY #33 US (CITED IN TAY93U0002) XXXX-XX-XX

TAY93U0002 TAYLOR, D. - ENDEMIC CA ANNUAL ATRIPLEX RECORDS. (COLLECTIONS FOR SEVERAL TAXA) 1993-07-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 82784
EO Index: 83810
Key Quad: Traver (3611944)
Element Code: PDCHE042L0
Occurrence Number: 76
Occurrence Last Updated: 2011-06-06

Scientific Name: *Atriplex depressa*
Common Name: brittlescale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, MEADOWS AND SEEPS, PLAYAS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.

Micro Habitat:

USUALLY IN ALKALI SCALDS OR ALK. CLAY IN MEADOWS OR ANNUAL GRASSLND; RARELY ASSOCIATED WITH RIPARIAN, MARSHES, OR VERNAL POOLS. 1-325 M.

Last Date Observed: 1968-05-13
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1968-05-13
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

4 MILES S OF DINUBA.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS 4 MILES S OF DINUBA FROM SOUTHERN PACIFIC RAILROAD; MULTIPLE ROADS LEAD S OUT OF DINUBA, CENTERED ON ROAD 80 AND ROAD 84.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION IS A 1968 HOOVER COLLECTION. NEEDS FIELDWORK.

PLSS: T17S, R24E, Sec. 05 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4040025 E285977
Latitude/Longitude: 36.48164 / -119.38907
Elevation (feet):

County Summary:

Tulare

Quad Summary:

Monson (3611943), Traver (3611944)

Sources:

HOO68S0019 HOOVER, R. - HOOVER #11078 OBI (CITED IN TAY93U0002) 1968-05-13

TAY93U0002 TAYLOR, D. - ENDEMIC CA ANNUAL ATRIPLEX RECORDS. (COLLECTIONS FOR SEVERAL TAXA) 1993-07-27

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56415
EO Index: 56431
Key Quad: Goshen (3611934)
Element Code: PDCHE042M0
Occurrence Number: 14
Occurrence Last Updated: 2011-05-11

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2002-09-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
N SIDE OF AVE 308, 0.4 MILE W OF ROAD 76, GOSHEN.

Detailed Location:
IN FIELD ON N SIDE OF ROAD. MAPPED WITHIN THE SW 1/4 NE 1/4 SECTION 19.

Ecological:
ALKALI GRASSLAND WITH CENTROMADIA PUNGENS, SUAEDA MOQUINII, BASSIA HYSSOPIFOLIA, CUSCUTA CALIFORNICA, AND ANNUAL GRASSES.

Threats:
FIELD DISKED SOMETIME IN PREVIOUS YEAR. NEW HOUSING DEVELOPMENT ADJACENT TO SITE.

General:
25 PLANTS SEEN IN 2002. COLLECTION BY EASTWOOD & HOWELL IN 1938 "NEAR GOSHEN" ATTRIBUTED TO THIS OCCURRENCE.

PLSS: T18S, R24E, Sec. 19, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4025366 E283702
Latitude/Longitude: 36.34909 / -119.41036
Elevation (feet): 290

County Summary:
Tulare

Quad Summary:
Goshen (3611934)

Sources:

EAS38S0037	EASTWOOD, A. & J. HOWELL - EASTWOOD #6275 RSA #22185, CAS #261516, CAS-BOT-BC #180937 1938-09-05
PRE02F0014	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2002-09-12
PRE02S0007	PRESTON, R. - PRESTON #1947 DAV #77395 2002-09-12

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56417
EO Index: 56433
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 15
Occurrence Last Updated: 2018-09-19

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2002-09-12
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
ALONG E SIDE OF ROAD 80, N OF COTTONWOOD CREEK, 7 MILES N OF GOSHEN.

Detailed Location:
MAPPED AS A SERIES OF 3 POLYGONS FROM 51-307 M N OF LEVEE AND ROAD 80 INTERESECTION. IN THE SW 1/4 NE 1/4 SECTION 20.

Ecological:
ROADSIDE DRAINAGE.

Threats:
PROPOSED ROAD WIDENING.

General:
UNKNOWN NUMBER IN 2000. 3 SMALL PATCHES OF PLANTS EACH ~900 SQ FT IN AREA SEEN BY PRESTON IN 2002. 1995 STUTZ COLLECTION FROM "5 MILES N OF GOSHEN" AND 2000 LEVERETT COLLECTION FROM "E SIDE OF RD 80, 0.1 MI S OF AVE 360" ATTRIBUTED HERE.

PLSS: T17S, R24E, Sec. 20, NE (M)
Accuracy: specific area
Area (acres): 1
UTM: Zone-11 N4035226 E285395
Latitude/Longitude: 36.43828 / -119.39423
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

LEV00S0001	LEVERETT, R. - LEVERETT SN DAV #148759 & #97544 2000-07-10
PRE00F0003	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS (INCLUDES MENTION OF A. MINUSCULA AT THE SITE) 2000-09-22
PRE02F0015	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2002-09-12
STU95S0008	STUTZ, H. - STUTZ #9791 RSA #612717 1995-08-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 56419
EO Index: 56435
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 16
Occurrence Last Updated: 2004-08-18

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2000-07-10
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2000-07-10
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

ALONG ROAD 80 BETWEEN BANKS DITCH AND BUTTON DITCH, S OF DINUBA AND N OF VISALIA.

Detailed Location:

MAPPED AT THE CENTER OF SECTION 17 EXTENDING FROM N TO S OF SECTION.

Ecological:

ANNUAL GRASSLAND COMMUNITY WITH LOLIUM MULTIFLORUM, HORDEUM MARINUM SSP. GUSSONEANUM, HELIOTROPIUM CURASSAVICUM, CRESSA TRUXILLENSIS, AND DISTICHLIS SPICATA. ALSO WITH CAPSELLA BURSA-PASTORIS, XANTHIUM STRUMARIUM, AND RUMEX CRISPUS.

Threats:

ROAD WIDENING.

General:

200 PLANTS SEEN IN 2000. THE RARE ATRIPLEX CORDULATA OR A. ERECTICAULIS MAY ALSO OCCUR AT THIS SITE. SITE NEEDS TO BE REVISITED.

PLSS: T17S, R24E, Sec. 17, E (M)
Accuracy: specific area
Area (acres): 59
UTM: Zone-11 N4036708 E285458
Latitude/Longitude: 36.45164 / -119.39394
Elevation (feet): 290

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

LEV00F0001 LEVERETT, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2000-07-10

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0731
EO Index: 112600
Key Quad: Waukena (3611925)
Element Code: PDCHE042M0
Occurrence Number: 51
Occurrence Last Updated: 2018-09-25

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Poor
Owner/Manager: PVT
Trend: Decreasing
Presence: Presumed Extant

Location:

FIELD ON NE SIDE OF THE HWY 43 AND NEVADA AVENUE JUNCTION, NORTH OF CORCORAN.

Detailed Location:

MAPPED ACCORDING TO COORDINATES AND LOCATION DESCRIPTION. EXACT LOCATIONS OF ATRIPLEX ACROSS PROPERTY UNCLEAR BUT LIKELY SCATTERED ACROSS SITE.

Ecological:

IN SCALDS, VERNAL POOLS, AND BLADED AREAS. ASSOCIATED WITH ATRIPLEX ERECTICAULIS, A. SUBTILIS, AND A. ARGENTEA.

Threats:

SOLAR DEVELOPMENT. BY 2016, AERIAL IMAGERY SHOWS MAJORITY OF SITE EXTIRPATED BY SOLAR DEVELOPMENT.

General:

6000 PLANTS IN 2011. ~50 PLANTS IN EXCAVATED AREA AT W END OF MAPPED AREA AND ONE LARGE OCCURRENCE (SEVERAL THOUSAND) IN E PORTION OF FIELD WITH MULTIPLE SATELLITE POPULATIONS THROUGHOUT PROPERTY. SITE MOSTLY EXTIRPATED ACC TO 2016 IMAGERY.

PLSS: T20S, R22E, Sec. 34, S (M)
Accuracy: non-specific area
Area (acres): 307
UTM: Zone-11 N4002719 E268398
Latitude/Longitude: 36.14155 / -119.57406
Elevation (feet): 215

County Summary:

Kings

Quad Summary:

Waukena (3611925)

Sources:

WIN11F0004 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0734
Key Quad: Traver (3611944)
Occurrence Number: 52
EO Index: 112603
Element Code: PDCHE042M0
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
CNDDB Element Ranks: **Global:** G2
State: S2
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Last Survey Date: 2016-08-02
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Excellent
Trend: Unknown

Location:
APPROXIMATELY 1.9 AIR MILES ENE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED AROUND THE NE 1/4 OF THE NE 1/4 OF SECTION 2 ACCORDING TO 2016 PRESTON INFORMATION.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:
NONE NOTED.

General:
1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T18S, R23E, Sec. 2, NE (M)
Accuracy: non-specific area
Area (acres): 39
UTM: Zone-11 N4030897 E281065
Latitude/Longitude: 36.39831 / -119.44128
Elevation (feet): 280

County Summary:	Quad Summary:
Tulare	Traver (3611944)

Sources:
PRE16F0005 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0735
EO Index: 112604
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 53
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:

IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-02
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

APPROXIMATELY 1.2 AIR MILES NE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:

PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, MOSTLY IN THE NW 1/4 OF THE NW 1/4 OF SECTION 2 AND THE NE 1/4 OF THE NE 1/4 OF SECTION 3.

Ecological:

ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:

NONE NOTED.

General:

1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T18S, R23E, Sec. 2, NW (M)
Accuracy: specific area
Area (acres): 24
UTM: Zone-11 N4030979 E279752
Latitude/Longitude: 36.39874 / -119.45594
Elevation (feet): 275

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE16F0005 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0736
EO Index: 112605
Key Quad: Traver (3611944)
Element Code: PDCHE042M0
Occurrence Number: 54
Occurrence Last Updated: 2018-09-20

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-02
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-02
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
APPROXIMATELY 1 AIR MILE NNE OF WHERE CROSS CREEK CROSSES THE KINGS/TULARE COUNTY LINE.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, IN THE SOUTH 1/2 OF SECTION 34.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, A. MINUSCULA, CENTROMADIA PUNGENS, FRANKENIA SALINA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND LEPIDIUM DICTYOTUM.

Threats:
NONE NOTED.

General:
1000S OF PLANTS OBSERVED IN 2016 BETWEEN OCCURRENCES #52-54.

PLSS: T17S, R23E, Sec. 34, S (M)
Accuracy: specific area
Area (acres): 17
UTM: Zone-11 N4031489 E279056
Latitude/Longitude: 36.40318 / -119.46384
Elevation (feet): 275

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

PRE16F0005	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-02
PRE16S0002	PRESTON, R. - PRESTON #3062 DAV #218568 & #166856 2016-08-02

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B0737
EO Index: 112606
Key Quad: Burris Park (3611945)
Element Code: PDCHE042M0
Occurrence Number: 55
Occurrence Last Updated: 2018-09-21

Scientific Name: *Atriplex minuscula*
Common Name: lesser saltscale

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.1
Other Lists: SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:
CHENOPOD SCRUB, PLAYAS, VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
IN ALKALI SINK AND GRASSLAND IN SANDY, ALKALINE SOILS. 0-225 M.

Last Date Observed: 2016-08-03
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2016-08-03
Occurrence Rank: Excellent
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
SOUTH SIDE OF CROSS CREEK, 3.4 MILES WEST OF HIGHWAY 99, 5.2 MILES NW OF GOSHEN.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED ACCORDING TO 2016 PRESTON DIGITAL DATA, IN THE NE 1/4 OF THE NW 1/4 OF SECTION 8.

Ecological:
ALKALINE RAIN POOLS/VERNAL POOLS WITH ATRIPLEX CORDULATA VAR. CORDULATA, HORDEUM DEPRESSUM, DISTICHLIS SPICATA, AND SPERGULARIA SP.

Threats:
NONE NOTED.

General:
100S OF PLANTS OBSERVED IN 2016.

PLSS: T18S, R23E, Sec. 8, NW (M)
Accuracy: specific area
Area (acres): 6
UTM: Zone-11 N4029513 E275390
Latitude/Longitude: 36.38454 / -119.50411
Elevation (feet): 265

County Summary:	Quad Summary:
Kings	Burris Park (3611945)

Sources:
PRE16F0006 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX MINUSCULA 2016-08-03

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 33912
Key Quad: Goshen (3611934)
Element Code: PDCHE042T0
Occurrence Number: 8
Occurrence Last Updated: 2011-05-23

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 1905-09-01
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:
NEAR RAILROAD STATION, GOSHEN.

Detailed Location:
EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON RAILROAD STATION IN GOSHEN.

Ecological:

Threats:
SURROUNDING LAND USE RESIDENTIAL OR COMMERCIAL. PRESTON STATES THAT LITTLE SUITABLE HABITAT REMAINS HERE.

General:
SITE BASED ON A 1905 BRANDEGEE COLLECTION. LISTED AS A. SUBTILIS BY STUTZ & CHU IN 1997 AND ANNOTATED TO A. SUBTILIS BY ZACHARIAS IN 2010. PLANTS NOT OBSERVED BY PRESTON IN 2002.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Goshen (3611934)

Sources:

BRA05S0005	BRANDEGEE, K. - BRANDEGEE SN UC #110268 1905-09-01
PRE02F0016	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2002-09-12
STU97A0001	STUTZ, H. & G. CHU - ATRIPLEX SUBTILIS: A NEW SPECIES FROM SOUTH-CENTRAL CALIFORNIA (IN MADRONO 44(2) PP. 184-188) 1997-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 41361
EO Index: 41361
Key Quad: Waukena (3611925)
Element Code: PDCHE042T0
Occurrence Number: 17
Occurrence Last Updated: 1999-07-08

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 1994-08-30
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1994-08-30
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
SE CORNER OF KANSAS AVENUE AND 6TH AVENUE, 12 MILES WEST OF TULARE.

Detailed Location:
MAPPED NEAR CROSS CREEK WITHIN THE NW 1/4 SECTION 11. COLLECTION LABEL STATES OCCURRENCE IS IN SECTION 4 BUT THIS DOES NOT MATCH LOCATION DESCRIPTION. MAPPED BY CNDDB ACCORDING TO LOCATION DESCRIPTION.

Ecological:

Threats:

General:
TYPE LOCALITY. ONLY SOURCE OF INFORMATION IS A 1994 COLLECTION BY STUTZ. NEEDS FIELDWORK.

PLSS: T20S, R22E, Sec. 11, NW (M)
Accuracy: 1/5 mile
Area (acres): 0
UTM: Zone-11 N4010181 E269653
Latitude/Longitude: 36.20907 / -119.56230
Elevation (feet): 225

County Summary:	Quad Summary:
Kings	Waukena (3611925)

Sources:

STU94S0003	STUTZ, H. - STUTZ #9654 UCR #100891, CAS #946662, NY #232837, RSA #612726, GH #107038, MO #4944369, BRY (ALSO CITED IN STU97A0001) 1994-08-30
STU97A0001	STUTZ, H. & G. CHU - ATRIPLEX SUBTILIS: A NEW SPECIES FROM SOUTH-CENTRAL CALIFORNIA (IN MADRONO 44(2) PP. 184-188) 1997-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 89597
EO Index: 90596
Key Quad: Waukena (3611925)
Element Code: PDCHE042T0
Occurrence Number: 30
Occurrence Last Updated: 2013-06-28

Scientific Name: *Atriplex subtilis*
Common Name: subtle orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
ALKALINE SOILS. 20-100 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
NORTH SIDE OF NEVADA AVE, APPROXIMATELY 120 FT EAST OF HIGHWAY 43, NORTH OF CORCORAN.

Detailed Location:
MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION OF SECTION 34.

Ecological:
EXCAVATED AREA. ASSOCIATED WITH ATRIPLEX ERECTICAULIS, A. MINUSCULA, AND A. ARGENTEA.

Threats:
SITE HISTORICALLY USED FOR AGRICULTURE. THREATENED BY SOLAR DEVELOPMENT.

General:
75 PLANTS OBSERVED IN 2011.

PLSS: T20S, R22E, Sec. 34, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4002427 E267642
Latitude/Longitude: 36.13875 / -119.58235
Elevation (feet): 210

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
WIN11F0002 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 47219
EO Index: 47219
Key Quad: Waukena (3611925)
Element Code: PDCHE042V0
Occurrence Number: 14
Occurrence Last Updated: 2020-06-19

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 1994-08-30
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2002-09-12
Occurrence Rank: Good
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
12 MILES WEST OF TULARE, NEAR JUNCTION OF KANSAS AVENUE & 6TH AVENUE.

Detailed Location:
MAPPED ACCORDING TO COORDINATES & MAP PROVIDED BY PRESTON, WHO STATES THAT THIS SITE IS THE PLANT'S "NEAREST SUITABLE HABITAT." MAPPED LOCATION IS ABOUT 0.5 MI DUE W OF JUNCTION OF KANSAS AVE AND 6TH AVE; SOUTH OF KANSAS AVE.

Ecological:
ALKALI GRASSLAND, WITH CENTROMADIA PUNGENS, CRESSA TRUXILLENSIS, FRANKENIA SALINA, DISTICHLIS SPICATA, & ANNUAL GRASSES.

Threats:

General:
SITE BASED ON A 1994 STUTZ COLLECTION. ZERO PLANTS OBSERVED IN 2002.

PLSS: T20S, R22E, Sec. 10, NE (M)
Accuracy: non-specific area
Area (acres): 24
UTM: Zone-11 N4010265 E269372
Latitude/Longitude: 36.20976 / -119.56545
Elevation (feet): 230

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:

PRE02F0033	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS 2002-09-12
STU94S0005	STUTZ, H. - STUTZ #9655 BRY #35981, SEINET #4133517 1994-08-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 47221
EO Index: 47221
Key Quad: Traver (3611944)
Element Code: PDCHE042V0
Occurrence Number: 16
Occurrence Last Updated: 2020-06-25

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2017-09-06
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-09-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
ALONG ROAD 80 BETWEEN AVENUE 360 AND COTTONWOOD CREEK.

Detailed Location:
MAPPED AS 3 POLYGONS ACCORDING TO 2000, 2002, AND 2017 PRESTON DATA. PORTIONS OF SITE WEST OF ROAD 80 ARE ON PROPOSED MITIGATION SITE.

Ecological:
IN DRAINAGE CHANNEL; DISTURBED AREAS IN ALKALI GRASSLAND WITH SUAEDA MOQUINII, DISTICHLIS SPICATA, CRESSA TRUXILLENSIS, CENTROMADIA PUNGENS, HELIOTROPIUM CURASSAVICUM, FRANKENIA SALINA, A. SERENANA, CYNODON DACTYLON & ANNUAL GRASSES.

Threats:
WIDENING OF ROAD 80 HAS ELIMATED PLANTS ON THE EAST SIDE OF ROAD 80.

General:
1000'S OF PLANTS ESTIMATED IN 2000. 100'S OF PLANTS OBSERVED IN 2002; FEWER PLANTS PROBABLY DUE TO DROUGHT YEAR. 1150 PLANTS SEEN WEST OF ROAD 80 ON 9/6/2017; NO PLANTS ON EAST SIDE OF ROAD 80 ON 9/7/2017, LIKELY ELIMINATED PRIOR TO 2012.

PLSS: T17S, R24E, Sec. 20 (M)
Accuracy: specific area
Area (acres): 38
UTM: Zone-11 N4035009 E285219
Latitude/Longitude: 36.43628 / -119.39614
Elevation (feet): 285

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:

PRE00F0003	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS (INCLUDES MENTION OF A. MINUSCULA AT THE SITE) 2000-09-22
PRE00S0041	PRESTON, R. - PRESTON #1441 DAV #77390 & #148613 2000-09-06
PRE02F0032	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX ERECTICAULIS 2002-09-12
PRE17F0005	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-06
PRE17F0009	PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-07
PRE17S0003	PRESTON, R. - PRESTON #3162 DAV #228936 2017-09-06

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 89948
EO Index: 90965
Key Quad: Waukena (3611925)
Element Code: PDCHE042V0
Occurrence Number: 22
Occurrence Last Updated: 2013-08-07

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2011-11-18
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2011-11-18
Occurrence Rank: Fair
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
NORTH SIDE OF NEVADA AVE, APPROXIMATELY 120 FT EAST OF HIGHWAY 43, NORTH OF CORCORAN.

Detailed Location:
MAPPED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 34.

Ecological:
EXCAVATED AREA AND WITHIN DEPRESSIONS/VERNAL POOLS SCATTERED THROUGHOUT FIELD. ASSOCIATED WITH ATRIPLEX SUBTILIS, A. MINUSCULA, AND A. ARGENTEA.

Threats:
SITE HISTORICALLY USED FOR AGRICULTURE. THREATENED BY SOLAR DEVELOPMENT.

General:
APPROXIMATELY 200 PLANTS OBSERVED IN EXCAVATED AREA AND ~300 PLANTS FOUND IN FIELD IN 2011.

PLSS: T20S, R22E, Sec. 34, SW (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4002388 E267674
Latitude/Longitude: 36.13840 / -119.58198
Elevation (feet): 200

County Summary:
Kings

Quad Summary:
Waukena (3611925)

Sources:
WIN11F0003 WINCHELL, C. - FIELD SURVEY FORM FOR ATRIPLEX SUBTILIS 2011-11-18

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B5726
EO Index: 118719
Key Quad: Traver (3611944)
Element Code: PDCHE042V0
Occurrence Number: 23
Occurrence Last Updated: 2020-06-22

Scientific Name: *Atriplex cordulata var. erecticaulis*
Common Name: Earlimart orache

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists:

CNDDB Element Ranks: **Global:** G3T1
State: S1

General Habitat:
VALLEY AND FOOTHILL GRASSLAND.

Micro Habitat:
60-115 M.

Last Date Observed: 2017-09-07
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-09-07
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:
WEST OF ROAD 80 APPROXIMATELY 5.4 AIR MILES NNE OF GOSHEN.

Detailed Location:
PROPOSED MITIGATION SITE. MAPPED AS SEVERAL POLYGONS ACCORDING TO 2017 PRESTON DIGITAL DATA, NEAR THE COMMON CORNER OF SECTIONS 19, 20, 29, & 30.

Ecological:
ALKALI GRASSLAND, WITH HORDEUM SPP., CENTROMADIA PUNGENS, ATRIPLEX SERENANA, HELIOTROPIUM CURASSAVICUM, AND TRICHOSTEMA LANCEOLATUM.

Threats:
NONE NOTED.

General:
150 PLANTS OBSERVED IN 2017.

PLSS: T17S, R24E, Sec. 29, NW (M)
Accuracy: specific area
Area (acres): 30
UTM: Zone-11 N4034184 E284615
Latitude/Longitude: 36.42872 / -119.40265
Elevation (feet): 287

County Summary:
Tulare

Quad Summary:
Traver (3611944)

Sources:
PRE17F0006 PRESTON, R. - FIELD SURVEY FORM FOR ATRIPLEX CORDULATA VAR. ERECTICAULIS 2017-09-07

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 80351
EO Index: 81338
Key Quad: Guernsey (3611926)
Element Code: PDHYD0A0H0
Occurrence Number: 23
Occurrence Last Updated: 2010-10-11

Scientific Name: *Nama stenocarpa*
Common Name: mud nama

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 2B.2
Other Lists:

CNDDB Element Ranks: **Global:** G4G5
State: S1S2

General Habitat:
MARSHES AND SWAMPS.

Micro Habitat:
LAKE SHORES, RIVER BANKS, INTERMITTENTLY WET AREAS. 15-815 M.

Last Date Observed: 1999-03-26
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1999-03-26
Occurrence Rank: Fair
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:
SW OF THE JUNCTION OF KANSAS AVENUE AND 11TH AVENUE, WEST OF GUERNSEY.

Detailed Location:

Ecological:
DRY BOTTOM OF FLOOD CONTROL CHANNEL WITH GNAPHALIUM PALUSTRE, RORIPPA CURVISILIQUA, POTENTILLA NORVEGICA, AND MONTIA FONTANA.

Threats:
AREA DISTURBED BY CATTLE GRAZING AND PERCOLATION BASINS BUT UNKNOWN IF THIS IS A THREAT.

General:
SEEN IN 1999.

PLSS: T20S, R21E, Sec. 11, NE (M)
Accuracy: 80 meters
Area (acres): 0
UTM: Zone-11 N4010155 E260791
Latitude/Longitude: 36.20668 / -119.66077
Elevation (feet): 215

County Summary:
Kings

Quad Summary:
Guernsey (3611926)

Sources:

PRE99F0009 PRESTON, R. (JONES AND STOKES ASSOCIATES) - FIELD SURVEY FORM FOR NAMA STENOCARPUM 1999-03-26

PRE99S0004 PRESTON, R. - PRESTON #1205 JEPS #110480 1999-03-26

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 51929
EO Index: 51929
Key Quad: Guernsey (3611926)
Element Code: PDRAN0B1J0
Occurrence Number: 15
Occurrence Last Updated: 2003-07-30

Scientific Name: *Delphinium recurvatum*
Common Name: recurved larkspur

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive
SB_SBBG-Santa Barbara Botanic Garden

CNDDB Element Ranks: **Global:** G2?
State: S2

General Habitat:

CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.

Micro Habitat:

ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHENOPOD SCRUB. 3-790 M.

Last Date Observed: 1914-03-25
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1914-03-25
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

GUERNSEY, TULARE CO.

Detailed Location:

AS THERE IS NO GUERNSEY IN TULARE COUNTY, SITE MAPPED IN KINGS COUNTY AT GUERNSEY AT THE JUNCTION OF KANSAS AVENUE WITH THE ATCHISON-TOPEKA & SANTE FE RAILROAD.

Ecological:

Threats:

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1914 COLLECTION BY EASTWOOD. NEEDS FIELDWORK.

PLSS: T20S, R21E, Sec. 01 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4010807 E262607
Latitude/Longitude: 36.21300 / -119.64079
Elevation (feet):

County Summary:	Quad Summary:
Kings	Waukena (3611925), Guernsey (3611926)

Sources:

EAS14S0002 EASTWOOD, A. - EASTWOOD #3898 CAS #89124, CAS-BOT-BC #17139 1914-03-25

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B8065
Key Quad: Guernsey (3611926)
Occurrence Number: 138
EO Index: 121178
Element Code: PMALI040Q0
Occurrence Last Updated: 2022-03-01

Scientific Name: *Sagittaria sanfordii*
Common Name: Sanford's arrowhead

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G3
State: S3

General Habitat:

MARSHES AND SWAMPS.

Micro Habitat:

IN STANDING OR SLOW-MOVING FRESHWATER PONDS, MARSHES, AND DITCHES. 0-605 M.

Last Date Observed: 1980-09-22
Last Survey Date: 1980-09-22
Owner/Manager: UNKNOWN
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Unknown
Trend: Unknown

Location:

10TH AVENUE AT KENT, SOUTH OF HANFORD.

Detailed Location:

MAPPED AS BEST GUESS BY CNDDB AT INTERSECTION OF 10TH AVE AND KENT AVE. LABEL ALSO GIVES TRS: T19S R21E SEC 36; INTERSECTION IS AT CONER OF SECS 1, 6, 31, & 36. LABEL STATES"10TH AVE AT KENT N. W. HANFORD," BUT JCT IS SOUTH OF HANFORD.

Ecological:

IN IRRIGATION DITCH.

Threats:

General:

SITE IS BASED ON A 1980 DUNNICLIFF COLLECTION. NEEDS FIELDWORK.

PLSS: T19S, R21E, Sec. 36, SE (M)
Accuracy: 2/5 mile
Area (acres): 280
UTM: Zone-11 N4012238 E262970
Latitude/Longitude: 36.22598 / -119.6372
Elevation (feet): 219

County Summary:

Kings

Quad Summary:

Guernsey (3611926)

Sources:

DUN80S0002 DUNNICLIFF, J. - DUNNICLIFF SN CDA #0046053 1980-09-22

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 25124
EO Index: 100163
Key Quad: Goshen (3611934)
Element Code: PMPOA53110
Occurrence Number: 14
Occurrence Last Updated: 2016-01-22

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1925-03-24
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1925-03-24
Occurrence Rank: None
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Possibly Extirpated

Location:

GOSHEN.

Detailed Location:

EXACT LOCATION UNKNOWN, MAPPED IN GENERAL VICINITY OF GOSHEN.

Ecological:

ALKALI.

Threats:

POSSIBLY EXTIRPATED BY DEVELOPMENT AND AGRICULTURAL CONVERSION BASED ON AERIAL IMAGERY OF THE AREA.

General:

SITE IS BASED ON A 1914 EASTWOOD COLLECTION FROM GOSHEN AND A 1925 ABRAMS COLLECTION FROM "TRAVERS TO GOSHEN." REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R24E, Sec. 19 (M)
Accuracy: 1 mile
Area (acres): 0
UTM: Zone-11 N4025373 E282725
Latitude/Longitude: 36.34893 / -119.42124
Elevation (feet):

County Summary:	Quad Summary:
Tulare	Goshen (3611934)

Sources:

ABR25S0004	ABRAMS, L. - ABRAMS #10794 DAV #92068 1925-03-24
EAS14S0006	EASTWOOD - EASTWOOD SN HERBARIUM UNKNOWN (CITED IN HOO37R0001) 1914-03-26
HOO37R0001	HOOVER, R. - ENDEMISM IN THE FLORA OF THE GREAT VALLEY OF CALIFORNIA. DISSERTATION FOR PHD, UNIVERSITY OF CALIFORNIA. 1937-XX-XX

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: 98703
EO Index: 100164
Key Quad: Remnoy (3611935)
Element Code: PMPOA53110
Occurrence Number: 15
Occurrence Last Updated: 2016-01-22

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1942-04-11
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1942-04-11
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

2 MILES EAST OF HANFORD.

Detailed Location:

EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.

Ecological:

ALKALINE SOIL, DRYING MUD FLAT ASSOC WITH DISTICHLIS SPICATA AND POLYPOGON MONSPELIENSIS.

Threats:

POSSIBLY EXTIRPATED BY DEVELOPMENT AND AGRICULTURAL CONVERSION BASED ON AERIAL IMAGERY OF THE AREA.

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1942 BEETLE COLLECTION. REMAINING HABITAT IN THIS AREA SHOULD BE SEARCHED.

PLSS: T18S, R22E, Sec. 29 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4023842 E266501
Latitude/Longitude: 36.33134 / -119.60142
Elevation (feet): 250

County Summary:

Kings

Quad Summary:

Remnoy (3611935)

Sources:

BEE42S0006 BEETLE, A. - BEETLE #2963 DAV #92071 1942-04-11

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3004
Key Quad: Traver (3611944)
Occurrence Number: 76
EO Index: 114929
Element Code: PMPOA53110
Occurrence Last Updated: 2019-05-03

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 2017-03-31
Last Survey Date: 2017-03-31
Owner/Manager: PVT
Presence: Presumed Extant
Occurrence Type: Natural/Native occurrence
Occurrence Rank: Good
Trend: Unknown

Location:

CROSS CREEK PROPERTY; WEST SIDE OF HIGHWAY 99, 3.7 MILES NW OF GOSHEN.

Detailed Location:

MOSTLY NORTH OF CROSS CREEK. PROPOSED MITIGATION SITE. MAPPED AS MANY POLYGONS ACCORDING TO PRESTON DIGITAL DATA.

Ecological:

IN SHALLOW ALKALINE VERNAL POOLS AND SCALDS WITH LEPIDIUM DICTYOTUM, LASTHENIA CHRYSANTHA, HORDEUM DEPRESSUM, CENTROMADIA PUNGENS, JUNCUS BUFONIUS, AND SPERGULARIA ATROSPERMA.

Threats:

NONE NOTED.

General:

20,000 PLANTS OBSERVED IN 2016 AND 2017.

PLSS: T18S, R23E, Sec. 3, N (M)
Accuracy: specific area
Area (acres): 173
UTM: Zone-11 N4031132 E278793
Latitude/Longitude: 36.39991 / -119.46666
Elevation (feet): 270

County Summary:

Kings, Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE16F0008	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2016-03-30
PRE17F0030	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-03-31
PRE17I0001	PRESTON, R. - PHOTOS OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0238 & 0239 2017-03-30

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3005
EO Index: 114931
Key Quad: Traver (3611944)
Element Code: PMPOA53110
Occurrence Number: 77
Occurrence Last Updated: 2019-05-06

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 2017-04-05
Occurrence Type: Natural/Native occurrence
Last Survey Date: 2017-04-05
Occurrence Rank: Good
Owner/Manager: PVT
Trend: Unknown
Presence: Presumed Extant

Location:

COTTONWOOD CREEK JUST WEST OF ROAD 80, 5.8 MILES NNE OF GOSHEN.

Detailed Location:

PROPOSED MITIGATION SITE. MAPPED AS 6 POLYGONS ACCORDING TO 2017 PRESTON DIGITAL DATA.

Ecological:

ALKALI VERNAL POOLS WITH LEPIDIUM DICTYOTUM, CENTROMADIA PUNGENS, HORDEUM MARINUM, H. DEPRESSUM, AND PLAGIOBOTHRYS.

Threats:

NONE NOTED.

General:

3,065 PLANTS OBSERVED IN 2017.

PLSS: T17S, R24E, Sec. 20, SW (M)
Accuracy: specific area
Area (acres): 24
UTM: Zone-11 N4034785 E284659
Latitude/Longitude: 36.43414 / -119.40232
Elevation (feet): 285

County Summary:

Tulare

Quad Summary:

Traver (3611944)

Sources:

PRE17F0031	PRESTON, R. - FIELD SURVEY FORM FOR PUCCINELLIA SIMPLEX 2017-04-04
PRE17I0002	PRESTON, R. - PHOTO OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0240 2017-04-04
PRE17I0003	PRESTON, R. - PHOTOS OF PUCCINELLIA SIMPLEX, CALPHOTOS ID: 0000 0000 0517 0241 & 0242 2017-04-05

Occurrence Report

California Department of Fish and Wildlife

California Natural Diversity Database

Map Index Number: B3009
EO Index: 114937
Key Quad: Hanford (3611936)
Element Code: PMPOA53110
Occurrence Number: 80
Occurrence Last Updated: 2019-05-03

Scientific Name: *Puccinellia simplex*
Common Name: California alkali grass

Listing Status: **Federal:** None
State: None
Rare Plant Rank: 1B.2
Other Lists: BLM_S-Sensitive

CNDDB Element Ranks: **Global:** G2
State: S2

General Habitat:

MEADOWS AND SEEPS, CHENOPOD SCRUB, VALLEY AND FOOTHILL GRASSLANDS, VERNAL POOLS.

Micro Habitat:

ALKALINE, VERNALLY MESIC. SINKS, FLATS, AND LAKE MARGINS. 1-915 M.

Last Date Observed: 1942-04-11
Occurrence Type: Natural/Native occurrence
Last Survey Date: 1942-04-11
Occurrence Rank: Unknown
Owner/Manager: UNKNOWN
Trend: Unknown
Presence: Presumed Extant

Location:

4 MILES SOUTH OF ARMONA, NORTH OF TULARE LAKE.

Detailed Location:

EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS ABOUT 4 AIR MILES SOUTH OF ARMONA.

Ecological:

IN ALKALINE MEADOW.

Threats:

General:

ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1942 BEETLE COLLECTION. NEEDS FIELDWORK.

PLSS: T19S, R21E, Sec. 21 (M)
Accuracy: 1 mile
Area (acres): 1,987
UTM: Zone-11 N4015944 E256630
Latitude/Longitude: 36.25777 / -119.70882
Elevation (feet): 230

County Summary:	Quad Summary:
Kings	Guernsey (3611926), Hanford (3611936)

Sources:

BEE42S0009 BEETLE, A. - BEETLE #2969 SEINET #12895811, F 1942-04-11

Appendix F: Dust Control Plan



4CREEKS

DCP

Dust Control Plan

Sozinho Dairy #5 – BioFiltro Project

San Joaquin Valley Air Pollution Control District
Regulation VIII – Fugitive PM10 Prohibitions

Construction Notification

Pursuant to section 6.4 of **District Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator of a construction project of at least 1.0 acre in size shall provide written notification to the District at least 48 hours prior to his/her intent to commence any earthmoving activities. Use the first two pages of this form to submit a written Construction Notification. There are no fees for filing a construction notification.

Larger construction projects, as outlined below, may be required to submit a full Dust Control Plan. If a Dust Control Plan is required the owner/operator does not need to submit a separate construction notification.

Dust Control Plan

Pursuant to section 6.3 of **Rule 8021 – *Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities***, the owner or operator shall submit a Dust Control Plan to the District for a construction project that will involve any of the following:

- Residential developments that will include ten acres or more of disturbed surface area, or
- Non-residential developments that will include five acres or more of disturbed surface area, or
- Will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days of the project.

A Dust Control Plan identifies the fugitive dust sources at the construction site and describes all of the dust control measures to be implemented before, during, and after any dust generating activity for the duration of the project. The District will review and approve, conditionally approve, or disapprove the Dust Control Plan within 30 days of submittal. **Construction activities shall not commence until the Dust Control Plan has been approved or conditionally approved by the District.** A copy of the approved Dust Control Plan must be retained at the project site and made available upon request by a District inspector.

At least one key individual representing the owner or operator, or any person who prepares a Dust Control Plan must complete a Dust Control Training Course presented by the District. Please contact the District to find out when courses are being offered.

Pursuant to **District Rule 3135 – *Dust Control Plan Fee***, payment must accompany each Dust Control Plan submitted to the District. A separate fee is charged for any major modification made to an approved plan, such as modifying the size and scope of the project or making significant changes to the types of control or preventative measures. No fees are charged for administrative changes to an approved plan.

Regardless of whether a Construction Notification or Dust Control Plan is required, the owner or operator of any construction project shall comply with all other applicable requirements of Regulation VIII, and other District Rules.

Construction Notifications and Dust Control Plans should be submitted to the District's Compliance Division at:

San Joaquin, Stanislaus, Merced Counties	*Madera, Fresno, Kings Counties*	*Tulare, Kern Counties*
Northern Region Office 4800 Enterprise Way Modesto, CA 95356 (209)557-6400 Fax: (209)557-6475	**Central Region Office** 1990 East Gettysburg Avenue Fresno, CA 93726 (559)230-5950 Fax: (559) 230-6062	**Southern Region Office** 34946 Flyover Court Bakersfield, CA 93308 (661) 392-5500 Fax: (661) 392-5585

Section 1 – General Information – Page 1

☐ **Construction Notification** (Complete section 1) ☒ **Dust Control Plan** (Complete sections 1-7)	Date Received: *(For District Use)*

1-A Project Name and Location

Project Name: Sozinho Dairy #5

Project Address: 7205 Houston Avenue

Major X-Streets: Houston Avenue & 7th Avenue

City: Hanford County: 93230

GPS Coordinate(s): 36°17'46.14"N & 119°35'03.99"W

Expected Construction Start Date: August 1, 2024 End Date: February 28, 2025

1-B Project Details

This project is: ☐ Residential ☒ Non-Residential (commercial, industrial, institutional, public, etc.)

Total project site area: 15.24 Acres

Total disturbed surface area: 15.24 Acres

Total disturbed areas that will be left inactive for more than seven days: 0.00 Acres

Maximum daily volume of earthmoving: 3,500 Cubic Yards

Average daily volume of earthmoving: 2,500 Cubic Yards

1-C Provide a brief description of the project's operations.

Project will include excavation, grading, concrete work, pipelaying, and all necessary subtrades for the construction of a manure separator.

1-D Indirect Source Review (ISR) (Rule 9510)

Final Land Use Approval: ☐ Discretionary ☐ Ministerial

☐ Approval is Pending ☐ Approval was granted on: _____

Air Impact Assessment (AIA) application submitted? ☐ No ☐ Yes Date: _____

ISR Project ID: _____ Type of space: _____ Project square ft: _____

☒ Exempt from ISR. Explain: Wastewater processing upgrades.

☐ I would like additional information about opportunities to reduce water usage on the project site.

Section 1 – General Information – Page 2

Project Name: Sozinho Dairy #5

1-E Contacts

Property Owner:	Joe Sozinho				
Address:	12252 7th Avenue				
City:	Hanford	State:	CA	Zip:	93230
Phone:	559-381-3920	Fax:			
Mobile:		Email:			

Developer:	BioFiltro, Inc.				
Address:	1949 5th Street, Suite 101				
City:	Davis	State:	CA	Zip:	95616
Contact Person:	Rafael Concha				
Phone:	530-746-1770	Fax:			
Mobile:		Email:	rconcha@biofiltro.com		

General Contractor:	4CG Construction				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Contact Person:	Alec Grassel				
Phone:	559-372-0215	Fax:			
Mobile:	559-786-3694	Email:	alecg@4cgconstruction.com		

Other Contact:	Tyler Esteves, EIT				
Company:	4Creeks, Inc.				
Address:	324 S. Santa Fe St. Suite B				
City:	Visalia	State:	CA	Zip:	93292
Phone:	509-802-3052	Fax:			
Mobile:	559-805-3306	Email:			

STOP HERE FOR CONSTRUCTION NOTIFICATION ONLY

Section 2 – Dust Control Plan Implementation – Page 1

Project Name: Sozinho Dairy #5

2-A This Dust Control Plan was prepared by:

Name: Josh Thomas Title: Environmental QSD/QSP

Company Name: 4Creeks Engineering

Address: 324 S. Santa Fe St. Suite A

City: Visalia State: CA Zip: 93292

Phone: 559-802-3052 Fax:

Mobile: 661-343-3611 Email: josht@4-creeks.com

Date training completed: May 7, 2024 ☒ Copy of course certificate attached.

2-B Contractors

Provide the names, addresses, and phone numbers of the contractors involved in dust generating activities **or** performing dust control as part of this project (Rule 8021 Sec. 6.3.6.1). A supplemental list may be attached.

1. 4CG Construction, 324 S. Santa Fe St. Suite B, Visalia, CA 93292
   Alec Grassel, 559-786-3694, alec@4cgconstruction.com
2.
3.
4.

2-C Who will have the primary responsibility for implementing this Dust Control Plan?

(Rule 8021 Sec 6.3.6.1)

☐ Property Owner ☐ Developer ☒ General / Prime Contractor

☐ Sub-Contractor(s) ☐ Other:

Primary Project Contact: Alec Grassel

Title: Construction Manager

Company Name: 4CG Construction

Address: 324 S. Santa Fe St. Suite B

City: Visalia State: CA Zip: 93292

On-Site Phone: 559-372-0215 Fax:

Mobile: 559-786-3694 Email: alecg@4cgconstruction.com

Date training completed: ☐ Attach a copy of the course certificate

San Joaquin Valley
Air Pollution Control District
Compliance Division

Presents this
Certificate of Completion
to

Josh Thomas

On May 7, 2024, at Fresno, California for

Regulation VIII — Dust Control Training

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Signature

5/7/2024
Date

Section 2 – Dust Control Plan Implementation – Page 2

Project Name: Sozinho Dairy #5

2-D Dust Generating Activity Dates

The expected start and completion dates of **dust generating activities and soil disturbance activities** to be performed on site. For phased projects, it may be necessary to report expected start and completion dates separately. (Rule 8021 Sec. 6.3.6.4)

Expected start date:	August 1, 2024	Completion Date:	February 28, 2025
Phase Project Start – A:		Completion – A:	
Phase Project Start – B:		Completion – B:	
Phase Project Start – C:		Completion – C:	

2-E Other Locations

Identify whether any other locations should be included with this plan that are involved with this project. An example may include listing any site where bulk materials will be imported from or exported to. This does not need to include quarries or retailers of building materials. (Rule 8021 Sec. 6.3.2)

☒ No other locations are included with this project.

Location 1:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 2:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Location 3:

☐ No Dust Control Plan Required ☐ Included with this plan ☐ Included with another plan

Section 3 – Fugitive PM10 Sources – Page 1

Project Name: Sozinho Dairy #5

3-A Sources of Fugitive Dust

This section describes the minimum requirements for limiting visible dust emissions from activities that cause fugitive dust emissions. (Rule 8021 Sec. 6.3.6.5) **Check at least one box under each category**.

Structural Demolition. (Rule 8021 Sec. 5.1, 6.3.3, & 6.3.6.5)

- ☒ No demolitions are planned for this project.
- ☐ Asbestos NESHAP notification and fees will be submitted to the District. (Rule 3050 and Rule 4002)
  Water will be applied to the following areas for the duration of the demolition activities:
  - Building exterior surfaces;
  - Unpaved surface areas where equipment will operate;
  - Razed building materials; and
  - Water or dust suppressants will be applied to unpaved surface areas within 100 feet of structure during demolition.

Pre-Activity (Rule 8021 Sec. 5.2)

- ☐ Not applicable for this project (Please explain why in Section 3-C).
- ☒ The site will be pre-watered and work will be phased to reduce the amount of disturbed surface area at any one time (Complete Section 4-A).

Active Operations (Rule 8021 Sec. 5.2)

- ☒ Water will be applied to dry areas during leveling, grading, trenching, and earthmoving activities (Complete Section 4-A).
- ☐ Wind barriers will be constructed and maintained, and water or dust suppressants will be applied to the disturbed surface areas (Complete Sections 4-A or 4-B, and 4-C).

Inactive Operations, Including After Work Hours, Weekends, and Holidays (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C).
- ☐ Water or dust suppressants will be applied on disturbed surface areas to form a visible crust, and vehicle access will be restricted to maintain the visible crust. (Complete Section 4-A or 4-B, and 4-C)

Temporary stabilization of areas that remain unused for seven or more days (Rule 8021 Sec. 5.2)

- ☒ Not applicable for this project (Please explain why in Section 3-C)
- ☐ Vehicular access will be restricted and water or dust suppressants will be applied and maintained at all un-vegetated areas (Complete Section 4-A or 4-B, and 4-C).
- ☐ Vegetation will be established on all previously disturbed areas (Complete Section 4-C).
- ☐ Gravel will be applied and maintained at all previously disturbed areas (Complete Section 4-C).
- ☐ Previously disturbed areas will be paved (Complete Section 4-C).

Unpaved Access and Haul Roads, Traffic and Equipment Storage Areas (Rule 8021 Sec. 5.2 and 5.3)

- ☐ Not applicable for this project (Please explain why in Section 3-C)
- ☒ Apply water or dust suppressants to unpaved haul and access roads (Complete Section 4-A or 4-B)
- ☐ Post speed limit signs of not more than 15 miles per hour at each entrance, and again every 500 feet. (Complete Section 4-C)
- ☐ Water or dust suppressants will be applied to vehicle traffic and equipment storage areas (Complete Section 4-A or 4-B).

Wind Events (Rule 8021 Sec. 5.4)

- ☒ Water application equipment will apply water to control fugitive dust during wind events, unless unsafe to do so. Outdoor construction activities that disturb the soil will cease whenever visible dust emissions cannot be effectively controlled.

Section 3 – Fugitive PM10 Sources – Page 2

Project Name: Sozinho Dairy #5

3-B Bulk Materials (Rule 8021 Sec. 6.3.6.6 and Rule 8031)

Outdoor Handling of Bulk Materials (Rule 8031 Sec. 5.0 A)

- ☐ No bulk materials will be handled during this project.
- ☒ Water or dust suppressants will be applied when handling bulk materials.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained, and water or dust suppressants will be applied.

Outdoor Storage of Bulk Materials (Rule 8031 Sec. 5.0 B)

- ☐ No bulk materials will be stored during this project.
- ☒ Water or dust suppressants will be applied to storage piles.
- ☐ Storage piles will be covered with tarps, plastic, or other suitable material and anchored in such a manner that prevents the cover from being removed by wind action.
- ☐ Wind barriers with less than 50 percent porosity will be installed and maintained around the storage piles, and water or dust suppressants will be applied.
- ☐ A three-sided structure (< 50% porosity) will be used that is at least as high as the storage piles.

On-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 C)

- ☐ No bulk materials will be transported on the project site.
- ☐ Vehicle speed will be limited on the work site.
- ☒ All haul trucks will be loaded such that the freeboard is not less than six inches when transported across any paved public access road.
- ☒ A sufficient amount of water will be applied to the top of the load to limit visible dust emissions.
- ☐ Haul trucks will be covered with a tarp or other suitable cover.

Off-Site Transporting of Bulk Materials (Rule 8031 Sec. 5.0 D)

- ☒ No bulk materials will be transported to or from the project site.
- ☐ Measures in section 5-B will be implemented to prevent haul trucks from becoming a source of visible emissions or carryout onto public roads. (complete Section 5-B)

Outdoor Transport using a Chute or Conveyor (Rule 8031 Sec. 5.0 E)

- ☒ No chutes or conveyors will be used.
- ☐ Chute or conveyor will be fully enclosed.
- ☐ Water spray equipment will be used to sufficiently wet the materials.
- ☐ Transported materials will be washed or screened to remove fines (PM10 or smaller).

3-C Comments

The Dairy is currently implementing its own set of Dust Control regulations, watering the site as needed, and is active 7 days a week.

Section 4 – Dust Control Methods – Page 1

Project Name: Sozinho Dairy #5

4-A Water Application

Complete this section if water application will be used as a control method for limiting visible dust emissions and stabilizing surface areas. Check and answer everything that applies to this project.
(Rule 8021 Sec. 6.3.6.6)

Water Application Equipment:

☐ Sprinklers: Describe the activities that will utilize sprinklers:

Minimum treated area: _____ ☐ Square Feet ☐ Acres

Maximum treated area: _____ ☐ Square Feet ☐ Acres

Minimum water flow rate: _____ Gallons/minute Duration: _____

☒ Water Truck, ☐ Water Trailer, ☐ Water Wagon, ☐ Other: _____

Describe the activities that will utilize this equipment:

Grading and excavation

Number of application equipment available: 1

Application equipment capacity: 2,500

Application frequency (on a typical dry day): Minimum 2 times a day

Application rate: ☒ 650 gallons per acre ☐ _____ gallons per acre (Greater than 650)

Hours of operation: 6AM to 4PM ☐ Daily ☒ Mon-Fri ☐ Other: _____

Water application equipment is available to operate after normal working hours, on weekends, and holidays.

After-hours contact: Alec Grassel Phone No.: 559-786-3694

After-hours contact: Rafael Concha Phone No.: 530-746-1770

Water Supply: *Include the relative locations of these sources on the plot plan in Section 6.*

☐ Fire hydrants Number of hydrants available On-Site: _____ Off-Site: _____

☐ Storage tanks Number and capacity: _____

☒ Wells Number and flow rate: 7

☐ Canal, River, Pond, Lake, etc. Describe: _____

☐ Other: _____

Approval granted by the owner or public agency to use their water source for this project.

Owner or Agency: Owner

Contact: Joe Sozinho Phone No.: 559-381-3920

Section 4 – Dust Control Methods – Page 2

Project Name: Sozinho Dairy #5

4-B Dust Suppressant Products

Complete this section if a dust suppressant product will be used. These materials include, but are not limited to: hygroscopic suppressants (road salts), adhesives, petroleum emulsions, polymer emulsions, and bituminous materials (road oils). (Rule 8021 Sec. 6.3.6.6)

Copy this page if more than one dust suppressant product will be used.

☒ **Not Applicable.** No dust suppressant products will be used. **Skip to 4-C.**

Application Area: _____

Product Name: _____

Contractor's Name: _____ Phone No: _____

Application Rate: _____ Gallons of undiluted material per ☐ mile or ☐ acre treated.

Application Frequency: _____ Applications per ☐ week, ☐ month, ☐ year

Application Equipment: _____

Number of Application Equipment Available: _____

Application Equipment Capacity: _____

Attach each of the following information that fully describes this product. Use the checklist below to make sure all information is submitted with this plan.

- ☐ Product Specifications (MSDS, Product Safety Data Sheet, etc.)
- ☐ Manufacturer's Usage Instructions (method, frequency, and intensity of application)
- ☐ Environmental impacts and approvals or certifications related to the appropriate and safe use for ground application.

Section 4 – Dust Control Methods – Page 3

Project Name: Sozinho Dairy #5

4-C Other Dust Control Methods

Check below the other types of dust control methods that will be employed at the construction site.
(Rule 8021 Sec. 5.2)

☒ Restricting unauthorized vehicle access:

☐ Fences ☐ Gates ☐ Posts ☐ Berms ☐ Concrete Barriers ☐ Signs

☒ Other: "Authorized Vehicles Only" sign to be placed at main entrance

☐ Wind barriers Describe: _____

☐ Posted speed limit signs that meet State and Federal Department of Transportation standards.
(Rule 8021 Sec. 5.3)

☐ Posted at 15 miles per hour ☐ Posted at _____ miles per hour (less than 15 MPH)

☐ Re-establish vegetation for temporarily stabilizing previously disturbed surfaces.

Explain: _____

☐ Apply and maintain gravel:

☐ On haul roads ☐ On access roads ☐ At equipment storage yards

☐ At vehicle traffic areas ☐ For temporarily stabilizing previously disturbed areas.

Explain: _____

☐ Apply pavement:

Explain: _____

☒ Other: See attached

4-D Contingencies

Contingencies to be implemented should the listed control measures fail to meet the stability and visible emission requirements. Examples include, but are not limited to: replacement equipment, additional equipment, increased water application, additional water resources, adding chemical/organic dust suppressants, restricting access, and additional staffing. Attach any additional information if needed.
(Rule 4102 and Rule 8021 Sec. 5.2)

See attached

4-E Record Keeping (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained, but only for those days when a control measure is implemented. The District has developed record keeping forms that may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the forms developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

4-C Other Dust Control Methods

The project site is set back on the dairy (private property), so there are existing measures to restrict access. Also, the site will be graded and excavated in phases as construction occurs to avoid having disturbed soil left exposed.

4-D Contingencies

Contractor will provide additional water trucks at their corporation yard, in case of breakdwon of primary water truck. If additional water trucks are unavailable at that time, then General Contractor will rent an additional water truck from a local equipment rental company. Additionally, if omissions from the construction site cannot be controlled by the Contractor all work on-site will cease until the Contractor is able to implement additional mitigation measures.

Section 5 – Carryout and Trackout – Page 1

Project Name: Sozinho Dairy #5

5-A Treatments for Preventing Trackout

Select the control devices that will be used for preventing trackout from occurring onto paved public roads. Trackout is any material that adheres to vehicle tires and is deposited onto a paved public road or the paved shoulder of a paved public road. Check one or a combination that will apply to this project.

☐ **Grizzly:** Rails, pipes, or grates used to dislodge debris off of vehicles before exiting the site. Extends from the intersection with the paved public road surface for the full width of the unpaved exit surface for a distance of at least 25 feet. (Rule 8041 Sec. 5.9.1)

Width: _____ Feet Length: _____ Feet

☒ **Gravel Pad:** A layer of washed gravel at least one (1) inch or larger in diameter, three (3) inches deep, and extends from the intersection with the public paved road surface for the full width of the unpaved exit surface for a distance of at least 50 feet. (Rule 8041 Sec. 5.9.2)

Width: **20** Feet Length: **50** Feet Depth: **3** Inches

Gravel Size: **1** Inches Clean-up Frequency: **as needed**

☐ **Paved Surface:** Extends from the intersection with the paved public road surface for the full width of the unpaved access road for at least 100 feet to allow mud and dirt to drop off of vehicles before exiting the site. (Rule 8041 Sec. 5.9.3)

Width: _____ Feet Length: _____ Feet

Mud and dirt deposits accumulating on paved interior roads used for trackout control will be removed with sufficient frequency, but not less frequently than once per workday. Cleanup will commence within ½ hour of generating any carryout and trackout onto public roads. (Rule 8041 Sec. 5.8.2 and 5.9.3)

Clean-up Frequency: _____

☐ **Wheel Washer:** Uses water to dislodge debris from tires and vehicle undercarriage. (Rule 8011 Sec. 3.73)

Describe: _____

☐ **Other:** (Rule 8041 Sec. 5.8.1.2) _____

5-B Treatments for Preventing Carryout

Report the required treatments that will be used for preventing carryout from occurring on paved public roads. Carryout occurs when materials from emptied or loaded haul trucks, vehicles, or trailers falls onto a paved public road or paved shoulder of a paved public road. (Rule 8031 Sec 5.0)

☒ No haul trucks will be routinely entering or leaving the project site.

☐ Spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates will be prevented when material is transported onto any paved public access road.

Emptied Haul Trucks:

- ☐ Interior cargo compartments will be cleaned before leaving the project site.
- ☐ Cargo compartment will be covered with a tarp or suitable cover before leaving the project site.

Loaded Haul Trucks:

- ☐ Haul trucks will be loaded such that the freeboard is not less than six inches with water applied to the top of the load before leaving the project site.
- ☐ Cargo compartment and load will be covered with a tarp or suitable cover before leaving the project site.

☐ **Other:** _____

Section 5 – Carryout and Trackout – Page 2

Project Name: Sozinho Dairy #5

5-C Cleaning up Carryout and Trackout

Check and report below the methods and frequency for cleaning up carryout and trackout from the surface and paved shoulders of paved public roads.

The use of blower devices, or dry rotary brushers or brooms, for removal of carryout and trackout from paved public roads is prohibited. (Rule 8041 Sec. 5.0)

Projects subject to a dust control plan are required to prevent and mitigate carryout and trackout beyond the minimum cleanup requirements. (Rule 8041 Sec. 5.3)

Cleanup Frequency:

☒ In the event the control device becomes insufficient to prevent carryout and trackout, removal of any carryout and trackout must be accomplished within one-half hour of the generation of such carryout and trackout. (Rule 8041 Sec. 5.8.2.)

Cleanup Method: Check the method below that will be used for cleaning carryout and trackout.

☒ Manually sweeping and picking up. (Rule 8041 Sec. 5.7.1)

☐ Mechanical sweeping with a rotary brush or broom accompanied or preceded by water. (Rule 8041 Sec. 5.7.2)

Describe the types of equipment that will used: _____

☐ Operating a PM10-efficient street sweeper. (Rule 8041 Sec. 5.7.3)

Make and Model: _____

☒ Flushing with water: allowed if: (Rule 8041 Sec. 5.7.4)

- No curbs or gutters are present.
- Using water will not result as a source of trackout and carryout.
- Using water will not result in adverse impacts on storm water drainage systems.
- Using water will not violate any National Pollutant Discharge Elimination System permit program.

5-D Record keeping for Cleanup of Carryout and Trackout (Rule 8011 Sec. 6.2)

Records and any other supporting documents for demonstrating compliance must be maintained. The District has developed a record keeping form specific for cleaning carryout and trackout from paved public roads and may be used for complying with this requirement. Check one or both below:

☒ Records will be maintained using the form developed by the District.

☐ Records will be maintained using documents or forms developed by the owner or operator.

Explain and include copies: _____

Section 6 – Plot Plan

Project Name: Sozinho Dairy #5

6-A Plot Plan

A plot plan identifies the type and location of each project. Attach appropriately sized maps with the project boundaries outlined or use the space in section 6-B to draw a plot plan. Attached maps may include tract maps, site maps, and topographic maps. Use the checklist below to make sure all areas have been identified on the plot plan. (Rule 8021 Sec. 6.3.6.2 & 6.3.6.5)

Identify the relative locations of actual and potential sources of fugitive dust emissions.

- ☒ Bulk material handling and storage areas.
- ☒ Paved and unpaved access roads, haul roads, traffic areas, and equipment storage yards.
- ☒ Exit points where carryout and trackout onto paved public roads may occur.
- ☒ Water supply locations if water application will be used for controlling visible dust emissions.

Identify the relative locations of sensitive receptors within ¼ mile of the project. (Rule 4102 Sec. 4.1)

- ☐ No sensitive receptors within ¼ mile of the project.
- ☒ Residential areas, schools, day care, churches, hospitals, nursing facilities, commercial, retail, etc.
- ☒ Freeways, roads, or traffic areas that may be affected by the dust generating activities.
- ☐ Other: _____

6-B Draw Plot Plan (if one is not attached)

May use the back of this form
Include a North Arrow

☒ Plot plan is attached (Skip to Section 7).

Section 7 – Certification

Project Name: Sozinho Dairy #5

7-A Certification

The owner, principle operator, or the individual implementing must certify the plan. (Rule 8021 Sec 6.3). For Title V sources, the responsible official must provide the certification. (Rule 2520 Sec. 3.28 and 10.0).

I certify that all information contained herein and information submitted in the attachments to this documents are true and correct.

Alec Grassel	**Project Manager**
Print Name	Title
Digitally signed by Alec Grassel DN: C=US, E=alecg@4cgconstruction.com, O=4Creeks, OU=Build, CN=Alec Grassel Date: 2024.06.13 16:03:35-07'00'	
Signature	Date

559-372-0215		**559-786-3694**
Phone Number	Fax Number	Cell Number

San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT

Regulation VIII Record Keeping Forms

This matrix lists the suggested forms that may be used for Regulation VIII record keeping. The left column lists potentially applicable rules. The next column lists major industry groups affected by the various rules of Regulation VIII. The letters A, B, C, and D refer to the record keeping forms developed by the SJVUAPCD.

		Activity at site and corresponding record keeping forms					
Regulation VIII Rule Number	Type of Business or Commercial Activity	Bulk Materials	Unpaved Roads	Equip. & Vehicle Storage	Open Areas	Earth Moving	Trackout and Carryout
8021 8031 8041 8051 8061 8071	Construction	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8021 8031 8041 8051 8061 8071	Oilfields	**A C**	**A C D**	**A C D**	**A C**	**A**	**B**
8081	Off-field Agricultural Operations	**A C**	**A C D**	**A C D**			
8031 8041 8551 8061	Agricultural Product Processing	**A C**	**A C D**	**A C D**			**B**
8031 8041 8071	Bulk Materials	**A C**	**A C D**	**A C D**			**B**
8041 8061 8071	Equipment and Vehicle Storage	**A C**	**A C D**	**A C D**	**A C**		**B**
8041 8051 8071	Truck Stops	**A C**	**A C D**	**A C D**	**A C**		**B**

Form A = Area Water Application
Form B = Sweeping/cleanup
Form C = Permanent control measure such as paving, gravel, a grizzly, chemical/organic dust suppressants
Form D = Water Application onto Unpaved Roads and Traffic Areas

(Rev. 06.01.09)

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 ♦ FAX (209) 557-6475

Central Region (Main Office)
1990 East Gettysburg Avenue
Fresno, CA 93726-0244
Tel: (559) 230-6000 ♦ FAX (559) 230-6062

Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
Tel: (661) 392-5500 ♦ FAX (661) 392-5585

www.valleyair.org

Regulation VIII Record Keeping Form

Month:

FORM A – Area Water Application

Project Location: 7205 Houston Avenue City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Watering Schedule

Use this form to document daily water applications at a single site by recording total gallons per day and number of applications per day at a single area. Use additional forms, as necessary, for areas with different treatment schedules.

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Area treated: _____

Week	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1							
2							
3							
4							
5							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM B – For Cleanup of Trackout and Carryout

Project Location: 7205 Houston Avenue City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Sweeping / Cleanup Schedule

Use this form to document the cleanup schedule by entering the time of day cleanup is done.
Mornings =am; Afternoon = pm. Write "end of day" if cleanup is done at the end of the workday. In urban areas, preventing or cleaning-up trackout at construction sites is required immediately if it extends 50 feet or more. Record keeping is required for construction sites subject to Rule 8021, sites that store bulk materials subject to Rule 8031 and vehicle/equipment storage areas subject to Rule 8071.

Week		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	am							
	pm							
2		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
3		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
4		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							
5		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	am							
	pm							

Retain for one year after project ends. Title V sources are required to retain for five years after project ends.

Regulation VIII Record Keeping Form

Month:

FORM C: For Permanent / Long Term Dust Controls

Project Location: 7205 Houston Avenue City: Hanford Size: 15.24 (Miles/ Acres)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Permanent Activities

Describe the types of permanent dust controls implemented, the date, the activity, such as applying an organic dust suppressant, gravel, paving or a trackout control device. Add comments such as the amount used, where used, brand name.

Date	Dust Control Activity Performed (Gravel, paving)	Comments: Type of material, application rate.

Comments:

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.

Regulation VIII Record Keeping Form

Month:

FORM D: Water Application onto Unpaved Roads & Equipment Areas

Project Location: 7205 Houston Avenue Hanford, CA 93230 Size: 15.24 Miles or (Acres) (circle one)

Owner: Joe Sozinho Address: 12252 7th Avenue City: Hanford Zip: 93230

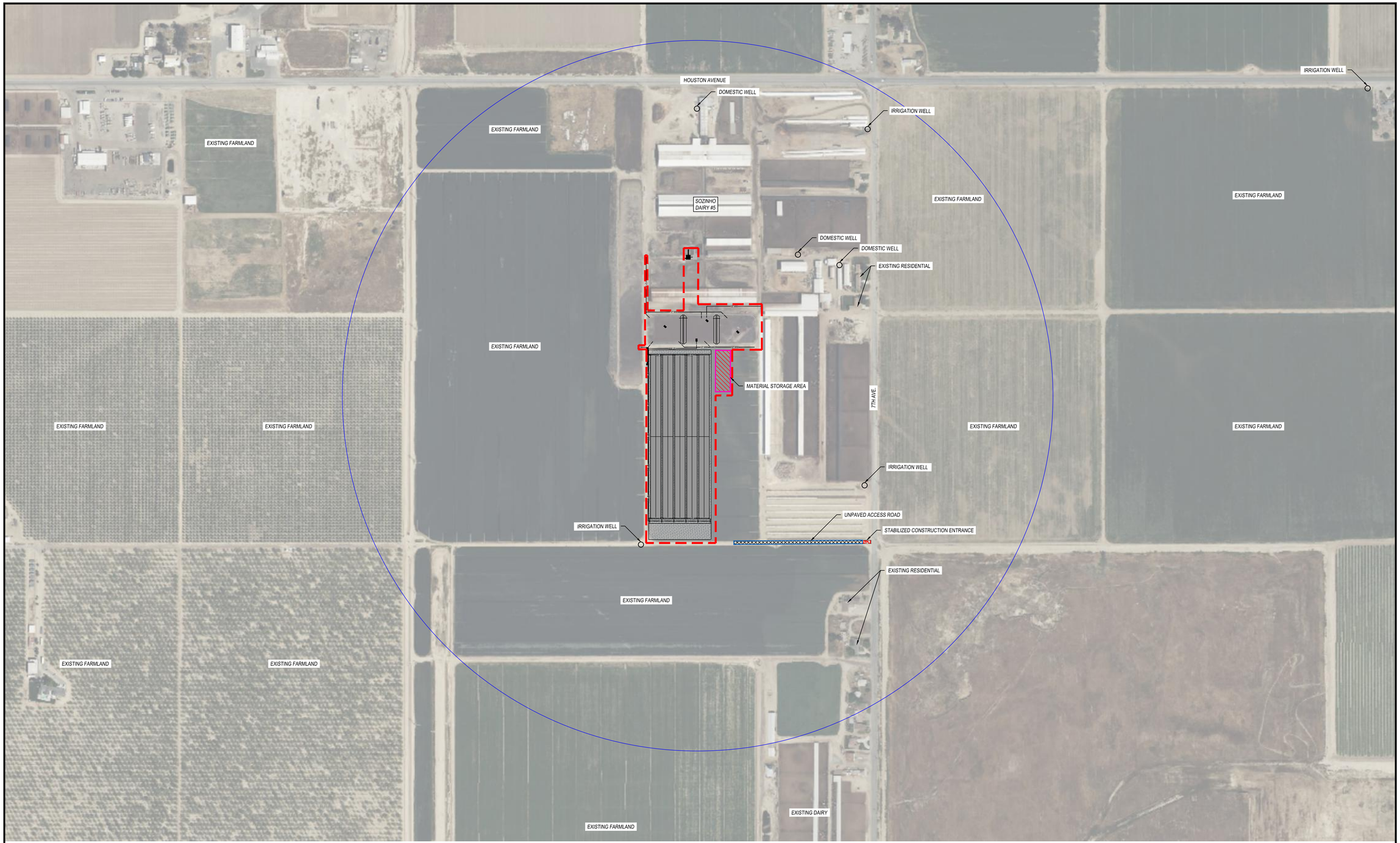
Contact Person: Alec Grassel Title: Construction Manager Phone: 559-786-3694

Use this form to document daily water applications at the same or different areas. Use additional forms, as necessary.

Date	Time	Area Treated	Distance, Area, or Gallons Applied

Comments: _____

Retain for one year after project ends. Title V sources are required to retain for five years after project ends. Attach product information, maps and other specifications as appropriate unless already addressed in an approved or verified Fugitive PM10 Management Plan.



LEGEND

CONSTRUCTION BMPS:

BMPs SHOWN ON MAP

- LIMITS OF SURFACE DISTURBANCE = 15.24 ACRES
- ¼ MILE RADIUS
- WATER SOURCE
- ACCESS/HAUL ROAD
- MATERIAL STORAGE AREA
- STABILIZED CONSTRUCTION ENTRANCE

BMPs NOT SHOWN ON MAP

VEHICLE AND EQUIPMENT FUELING (NS-9)
VEHICLE AND EQUIPMENT MAINTENANCE (NS-10)
CONCRETE FINISHING (NS-13)
SPILL PREVENTION AND CONTROL (WM-4)

811 Know what's **below.** **Call** before you dig.

NORTH

REVISIONS

DATE	BY	DESCRIPTION

PREPARED BY:
4CREEKS
324 S. SANTA FE., STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3275
www.4-creeks.com

CHK BY: TE

DRW BY: AF

IMPROVEMENT PLANS FOR:
SOZINHO DAIRY #5
7205 HOUSTON AVNUE
HANFORD, CA 93230

BIOFILTRO WASTEWATER PROCESSING DUST CONTROL PLAN

PLOT DATE:	Jun 11, 2024
JOB NO.:	240504
FILE NAME:	240504 - DCP EXHIBIT
SCALE:	1" = 250'
SHEET NO.:	1 OF 1

Appendix G: Cultural Resources Records Search

California Historical Resources Information System



Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

To: Tyler Esteves
4Creeks
324 S. Santa Fe, Suite A
Visalia, CA 93292

Record Search 24-175

Date: April 22, 2024

Re: Sozinho Dairy #5 Improvements

County: Kings

Map(s): Remnoy 7.5'

CULTURAL RESOURCES RECORDS SEARCH

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

The following are the results of a search of the cultural resource files at the Southern San Joaquin Valley Information Center. These files include known and recorded cultural resources sites, inventory and excavation reports filed with this office, and resources listed on the National Register of Historic Places, the OHP Built Environment Resources Directory, California State Historical Landmarks, California Register of Historical Resources, California Inventory of Historic Resources, and California Points of Historical Interest. Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the OHP are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area.

PRIOR CULTURAL RESOURCE STUDIES CONDUCTED WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there have been no previous cultural resource studies completed within the project area. There have been no cultural resource studies completed within the one-half mile radius.

KNOWN/RECORDED CULTURAL RESOURCES WITHIN THE PROJECT AREA AND THE ONE-HALF MILE RADIUS

According to the information in our files, there are no recorded resources within the project area. There is one recorded resource within the one-half mile radius: P-16-000250. A historic era agricultural ditch.

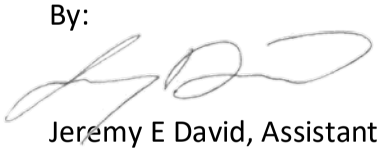
There are no recorded cultural resources within the project area or radius that are listed in the National Register of Historic Places, the California Register of Historical Resources, the California Points of Historical Interest, California Inventory of Historic Resources, for the California State Historic Landmarks.

COMMENTS AND RECOMMENDATIONS

We understand this project proposes to construct BioFiltro wastewater processing beds and necessary infrastructure for wastewater management. Additionally, we understand this project area is an existing dairy and the ground surface has been heavily disturbed. No further cultural resource work is needed within the existing facility at this time. However, we understand the surrounding land is undeveloped agricultural land. Please note that agriculture does not constitute previous development, as it does not destroy cultural resources, but merely moves them around within the plow zone. Therefore, prior to any ground disturbance activities on undeveloped ag land, we recommend a qualified, professional consultant conduct a field survey to determine if cultural resources are present. Further, if any cultural resources are unearthed during any ground disturbance activities, all work must halt in the area of the find and a qualified, professional consultant should be called out to assess the findings and make the appropriate mitigation recommendations. A list of qualified consultants can be found at www.chrisinfo.org.

We also recommend that you contact the Native American Heritage Commission in Sacramento. They will provide you with a current list of Native American individuals/organizations that can assist you with information regarding cultural resources that may not be included in the CHRIS Inventory and that may be of concern to the Native groups in the area. The Commission can consult their "Sacred Lands Inventory" file to determine what sacred resources, if any, exist within this project area and the way in which these resources might be managed. Finally, please consult with the lead agency on this project to determine if any other cultural resource investigation is required. If you need any additional information or have any questions or concerns, please contact our office at (661) 654-2289.

By:



Jeremy E David, Assistant Coordinator **Date**: April 22, 2024

Please note that invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

NATIVE AMERICAN HERITAGE COMMISSION

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California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

April 15, 2024

Tyler Esteves
4Creeks Inc.

Via Email to: tylere@4-creeks.com

Re: Sozinho Dairy #5 Project, Kings County

Dear Mr. Esteves:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Cameron.vela@nahc.ca.gov.

Sincerely,

Cameron Vela

Cameron Vela
Cultural Resources Analyst

Attachment

Appendix H: Waste Management Plan Addendum

November 3, 2025

Mr. Lewis Lummen
Central Valley Regional Water Quality Control Board
1685 E. Street, Suite 200
Fresno, CA 93706

RE: Sozinho Dairy #5 Waste Management Plan Addendum

Dear Mr. Lummen,

Sozinho Dairy #5 (Facility) submitted a Waste Management Plan (WMP), completed by Matthew C. Sutton, P.E., on June 18, 2010. Recently, the Facility has proposed to revise the existing wastewater flow process with the addition/modification of the following items: two (2) earthen berms in an existing lagoon, one (1) mechanical separator, one (1) tank and concrete pad, two (2) lift stations and five (6) wastewater processing beds. The Facility has hired 4Creeks, Inc. (4Creeks) to amend the previously approved 2010 WMP to analyze the new proposed modifications to the wastewater process system and ensure the facility will still comply with the Reissued General Order No. R5-2013-0122 (General Order).

According to the calculations of the approved WMP completed by Matthew C. Sutton, P.E., in June of 2010, the Facility met the required wastewater storage for the 120-day required storage period (November 1st – February 28). The addition of proposed processing beds will increase the reduction of solids from the wastewater, prior to reaching the storage ponds. Additionally, the processing beds will increase the impervious area within the stormwater tributary area. According to the analysis completed by 4Creeks the proposed modifications will result in a total excess wastewater storage capacity of **6,411,614 gallons**. This analysis is demonstrated in the attached calculations and exhibits.

Based upon the results of the provided analysis, the Facility will meet the storage capacity requirements set forth by the General Order, once the proposed modifications become operational. No additional modifications to the facility will be required.

Operations and Maintenance of the existing wastewater retention ponds shall be conducted in accordance with the previous Waste Management Plan / Operations and Maintenance Plan provided to the Facility.

Respectfully,

Moises Ramirez, PE #88232

VISALIA
324 S Santa Fe Suite A
Visalia, CA 93292
559-802-3052
info@4-creeks.com

HANFORD
308 N. Irwin St.
Hanford, CA 93230
559-802-3052
info@4-creeks.com

FRESNO
1444 Fulton St. Suite B11,
Fresno, CA 93721
559-802-3052
info@4-creeks.com

Attachments

A. Dairy Facility Wastewater Flow Diagram
B. Storm Water Tributary Area Map
C-2C. Wastewater Retention Pond 2C Detail
C-2B. Wastewater Retention Pond 2B Detail
C-2A. Wastewater Retention Pond 2A Detail

Appendices:

A. Wastewater Retention Pond Volume Analysis Summary
B. Normal Precipitation Summary Analysis
C. 25 Year, 24 Hour Storm Water Data
D. FEMA Map
E. Evaporation History 1958 – 2010
F. Waste Management Plan, Sozinho Dairy #5
Completed by Matthew C. Sutton, P.E. Submitted to Regional Water Quality Control Board on June 18, 2010.

PROCESS FLOW KEYNOTES

1. *EXISTING WATER SUPPLY WELLS:*
SUPPLIES ALL MILK BARN PROCESS WATER USE.

2. *EXISTING MILK BARN PROCESS WATER:*
SOURCE: WATER SUPPLY WELLS.
PLATE COOLER, ABOVE GROUND TANK, BARN FLUSH, SPRINKLER PENS, AND MISC. BARN WASH WATER.

3. *PROPOSED RECEPTION PIT:*
SOURCE: EXISTING MILK BARN PROCESS WATER AND FLUSH WATER.
PUMPS WASTEWATER OVER PROPOSED MECHANICAL SEPARATORS.

4. *PROPOSED PRIMARY MECHANICAL SEPARATOR:*
SOURCE: PROPOSED RECEPTION PIT.
WASTEWATER GRAVITY FLOWS INTO RECEPTION TANK OR TO PROPOSED WASTEWATER RETENTION POND 2A AND 2B.

5. *PROPOSED RECEPTION TANK:*
SOURCE: PROPOSED PRIMARY MECHANICAL SEPARATOR.
GRAVITY FLOWS INTO PROPOSED WASTEWATER RETENTION POND 2B OR POND 2A. SETTLED SOLIDS ARE PUMPED TO PROPOSED SECONDARY MECHANICAL SEPARATOR.

6. *PROPOSED SECONDARY MECHANICAL SEPARATOR:*
SOURCE: PROPOSED RECEPTION TANK.
GRAVITY FLOWS TO WASTEWATER RETENTION POND 2A OR POND 2B.
ALTERNATIVELY SENDS WASTEWATER TO EXISTING RECEPTION PIT.

7. *WASTEWATER RETENTION PONDS 2A AND 2B:*
SOURCE: PROPOSED RECEPTION TANK.
GRAVITY FLOWS INTO WASTEWATER RETENTION POND 2C.

8. *WASTEWATER RETENTION POND 2C:*
SOURCE: WASTEWATER RETENTION POND 2A AND 2B. WASTEWATER FLOWS INTO PROPOSED BIDA BED LIFT STATION.

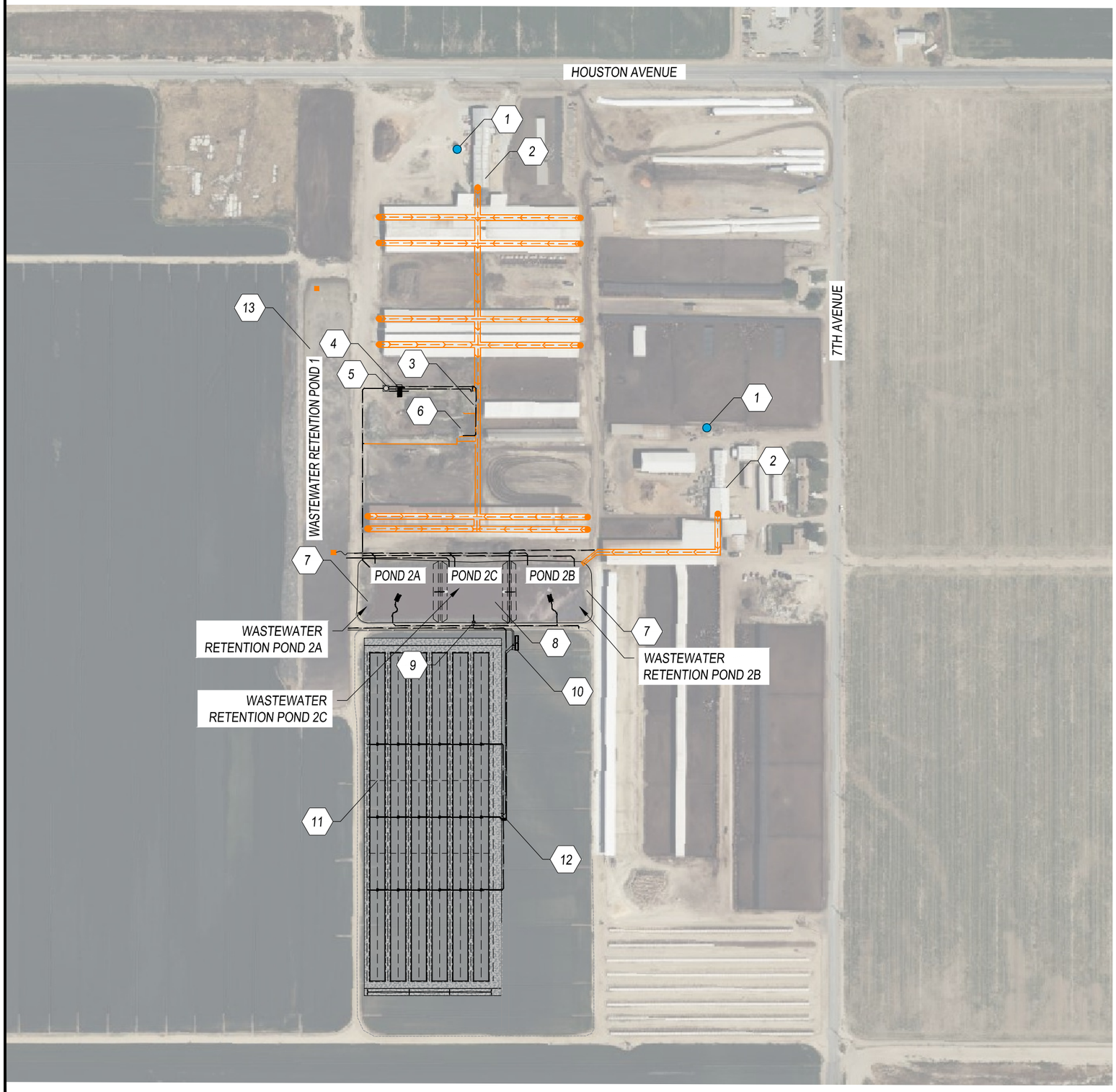
9. *PROPOSED BIDA BED LIFT STATION:*
SOURCE: WASTEWATER RETENTION POND 2C.
WASTEWATER IS PUMPED THROUGH THE PROPOSED CONTROL UNIT TO THE WASTEWATER PROCESSING BEDS. ALTERNATIVELY PUMPS WASTEWATER TO THE FLUSH SYSTEM.

10. *PROPOSED CONTROL UNIT:*
SOURCE: PROPOSED BIDA BED LIFT STATION.
MONITORS THE FLOW OF WASTEWATER TO AND FROM THE PROPOSED WASTEWATER PROCESSING BEDS.

11. *PROPOSED WASTEWATER PROCESSING BEDS (TYP. 6)*
SOURCE: PROPOSED CONTROL UNIT.
PROCESS WATER RUNS THOUGH THE SYSTEM AND IS CONVEYED TO A PROPOSED POST-PROCESSING BED LIFT STATION.

12. *PROPOSED POST-PROCESSING BED LIFT STATION*
SOURCE: PROPOSED WASTEWATER PROCESSING BEDS
PUMPS WASTEWATER POST PROCESSING BEDS TO WASTEWATER RETENTION POND 1.

13. *WASTEWATER RETENTION POND 1:*
SOURCE: PROPOSED POST-WASTEWATER PROCESSING BED LIFT STATION.
STORES WASTEWATER LONG TERM. PROCESS WATER IS USED FOR THE IRRIGATION SYSTEM. ALTERNATIVELY WASTEWATER IS PUMPED TO WASTEWATER RETENTION PONDS 2A, 2B AND 2C.



NORTH

JOB NO. 240504
ATTACHMENT A
11/3/2025
SCALE: 1" = 300'

DAIRY FACILITY WASTEWATER FLOW DIAGRAM

SOZINHO DAIRY #5
KINGS COUNTY, CA

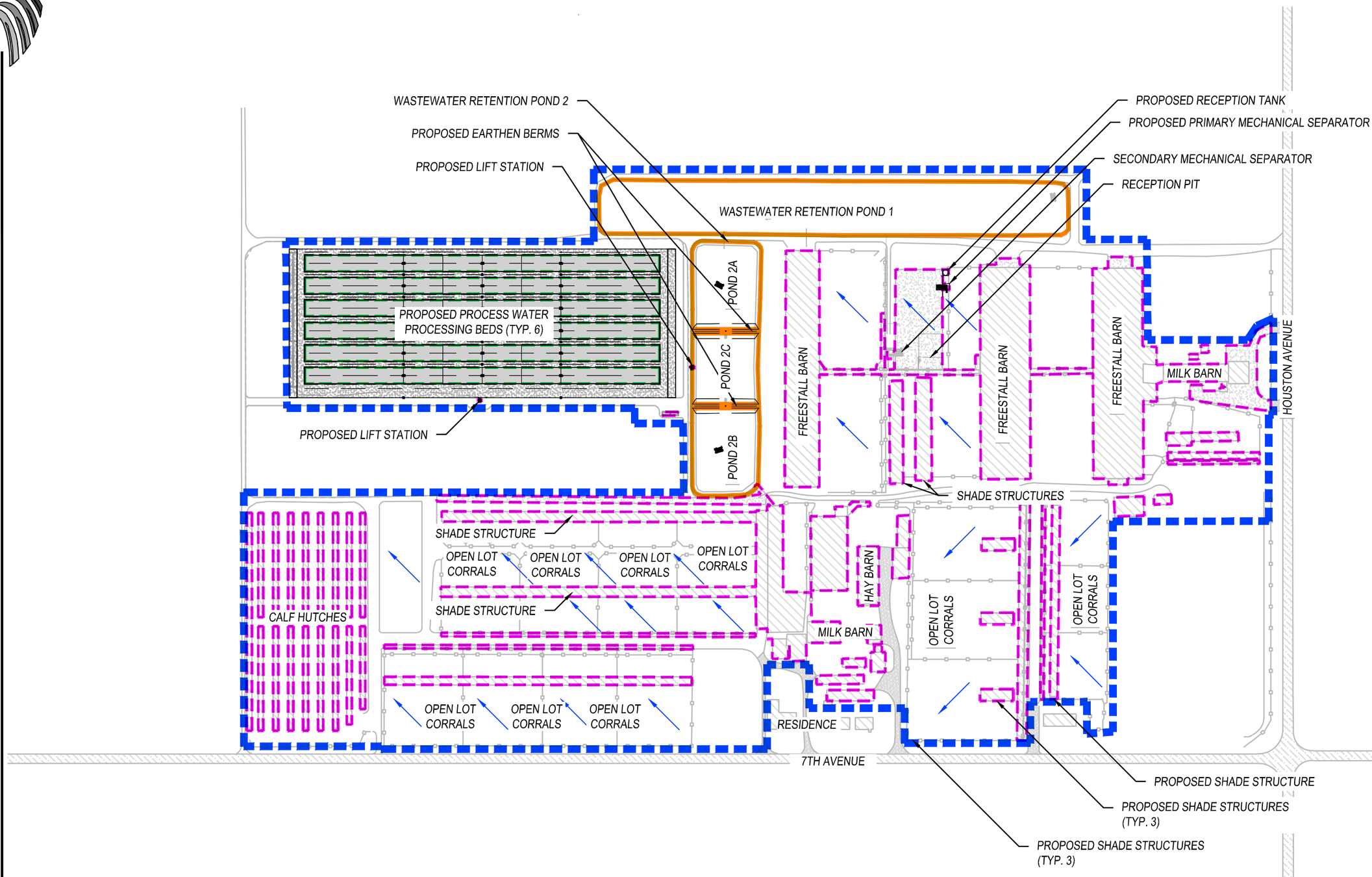
324 S. SANTA FE, STE. A
VISALIA, CA 93292
(559) 802-3052
www.4-creeks.com
4CREEKS

STORM WATER TRIBUTARY AREA MAP

SOZINHO DAIRY #5

KINGS COUNTY, CA

JOB NO. 240504 | ATTACHMENT B | 11/3/2025 | SCALE: SEE SHEET



LEGEND

- IMPERVIOUS AREA BOUNDARY
- TRIBUTARY AREA BOUNDARY
- WASTEWATER POND AREA
- BIDA BED SYSTEM AREA
- DIRECTION OF SLOPE

TOTAL AREA WITHIN MANURE HANDLING LIMITS: 2,929,972 SQ. FT.
TOTAL IMPERVIOUS AREA: 571,807 SQ. FT.
TOTAL POND AREA: 267,293 SQ. FT.
TOTAL BIDA BED SYSTEM AREA: 216,000 SQ. FT.

NORTH

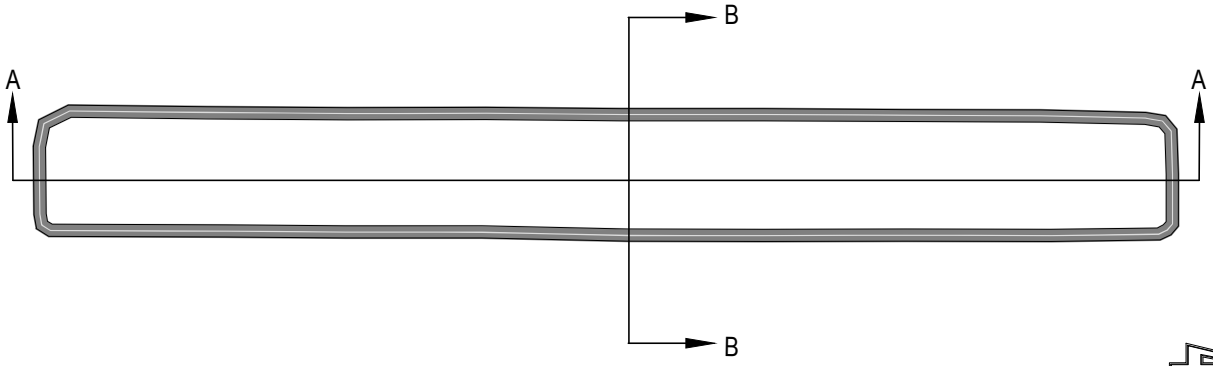
250' 0' 250'

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Visalia, CA 93292
(559) 802-3052
www.4-creeks.com

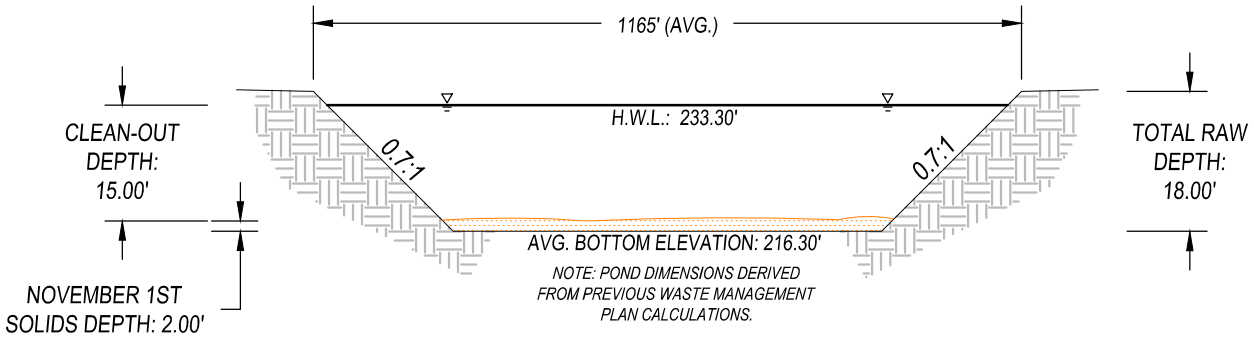
4CREEKS

WASTEWATER RETENTION POND 1 - IRRIGATION POND

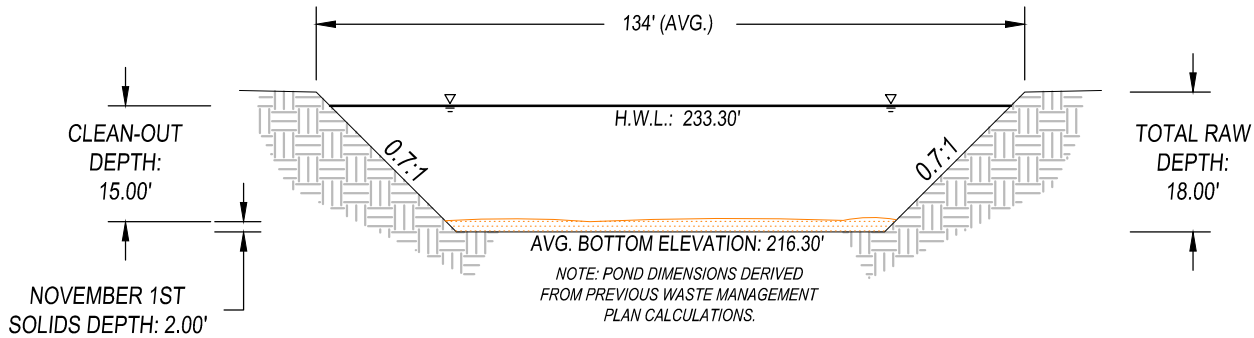
TOTAL VOLUME: 18,844,753 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 1,160,987 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 1,881,514 GALLONS
TOTAL RETENTION VOLUME: 15,802,252 GALLONS



PLAN VIEW NTS



SECTION A-A NTS



SECTION B-B NTS

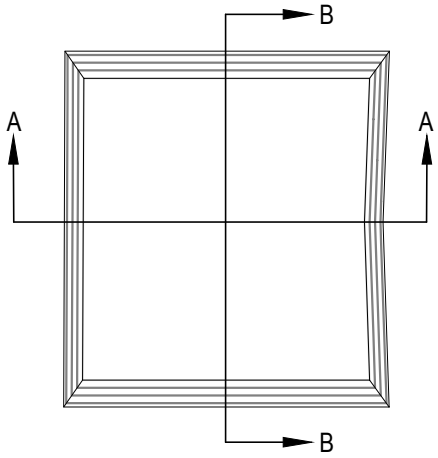
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Visalia, CA 93292
(559) 802-3052
www.4-creeks.com

WASTEWATER RETENTION POND 1 DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO.	240504
ATTACHMENT	C-1
	11/3/2025
	NTS

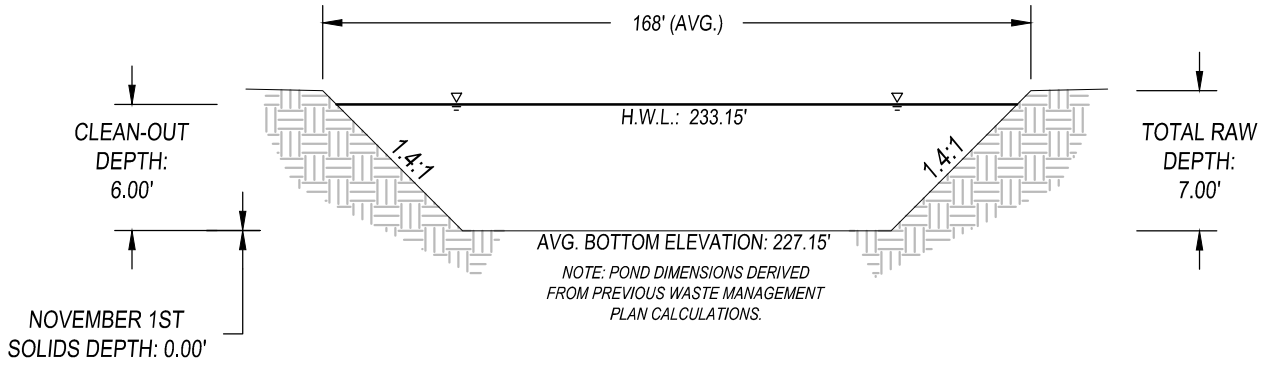
WASTEWATER RETENTION POND 2C - IRRIGATION POND

TOTAL VOLUME: 1,328,761 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 210,123 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 84,265 GALLONS
TOTAL RETENTION VOLUME: 1,034,373 GALLONS

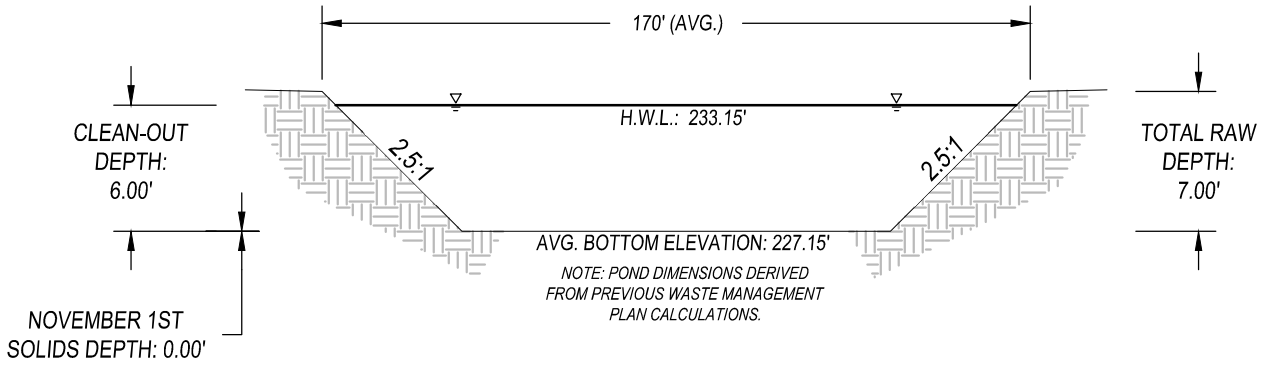


NORTH

PLAN VIEW — NTS



SECTION A-A — NTS



SECTION B-B — NTS

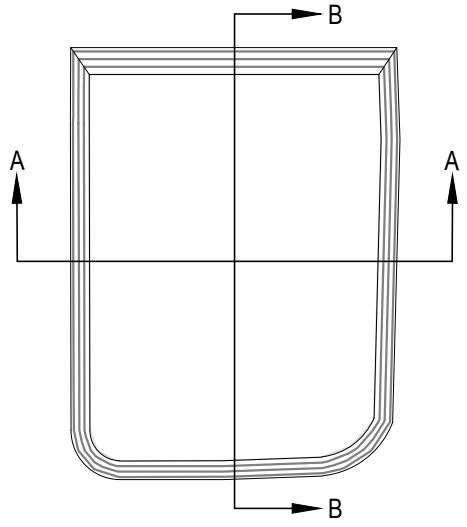
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WASTEWATER RETENTION POND 2C DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO. 240504
ATTACHMENT C-2C
11/3/2025
NTS

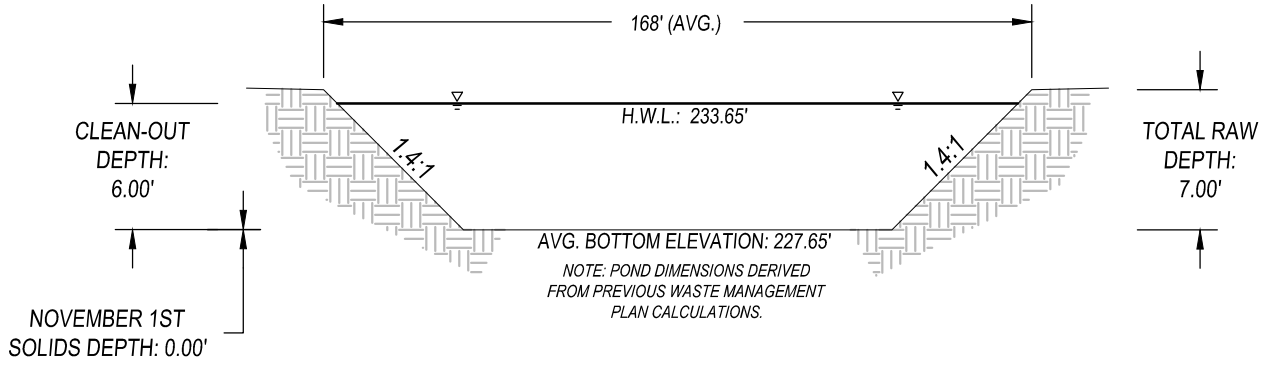
WASTEWATER RETENTION POND 2B - IRRIGATION POND

TOTAL VOLUME: 1,742,958 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 272,436 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 112,149 GALLONS
TOTAL RETENTION VOLUME: 1,358,373 GALLONS

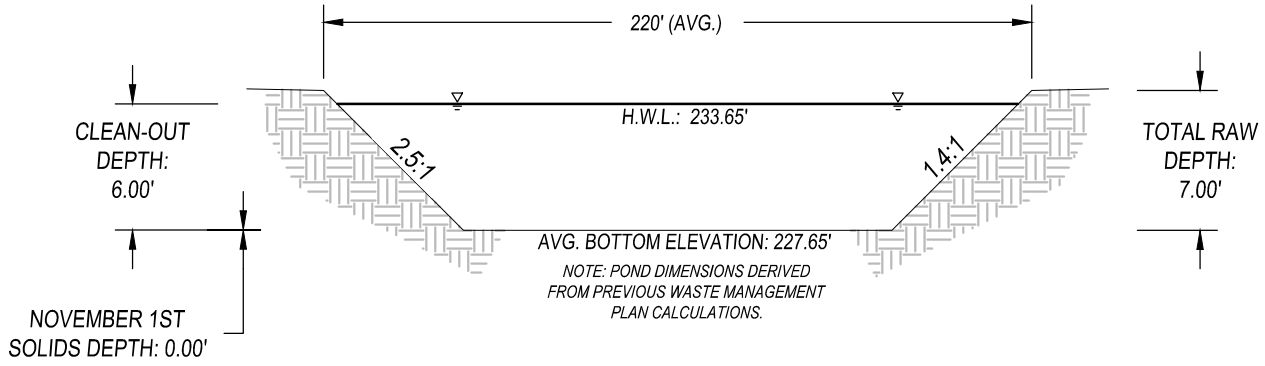


NORTH

PLAN VIEW — NTS



SECTION A-A — NTS



SECTION B-B — NTS

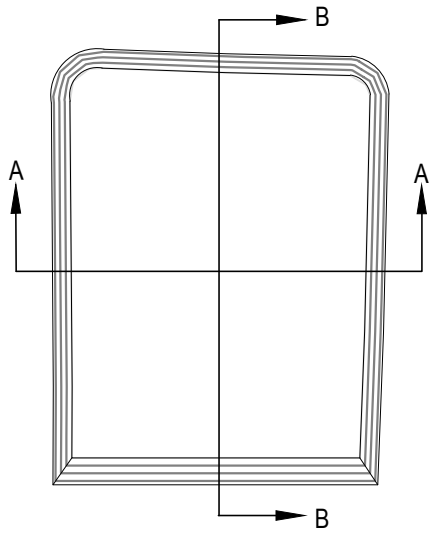
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WASTEWATER RETENTION POND 2B DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO.	240504
ATTACHMENT	C-2B
	11/3/2025
	NTS

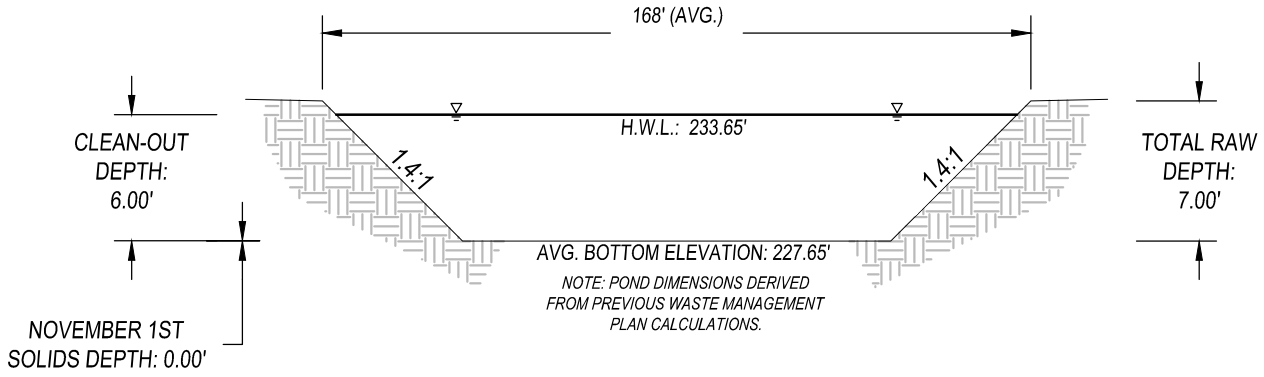
WASTEWATER RETENTION POND 2A - IRRIGATION POND

TOTAL VOLUME: 1,742,958 GALLONS
REDUCTION - 1 FT OF FREEBOARD: 272,436 GALLONS
REDUCTION - STORAGE PERIOD POND REDUCTION: 112,149 GALLONS
TOTAL RETENTION VOLUME: 1,358,373 GALLONS

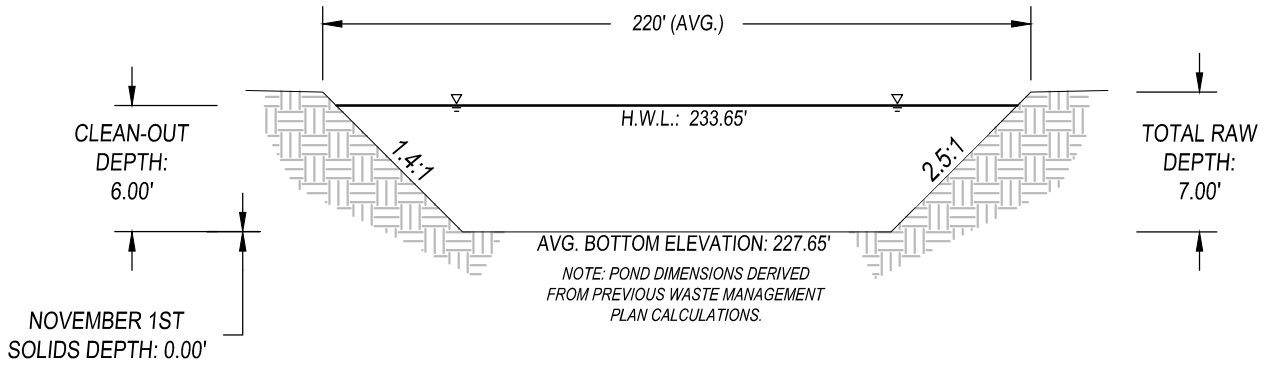


NORTH

PLAN VIEW *NTS*



SECTION A-A *NTS*



SECTION B-B *NTS*

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WASTEWATER RETENTION POND 2A DETAIL
SOZINHO DAIRY #5
KINGS COUNTY, CA

PROJECT NO. 240504
ATTACHMENT C-2A
11/3/2025
NTS

APPENDIX A

WASTEWATER RETENTION POND VOLUME ANALYSIS SUMMARY

Calculations Completed By: AF
Calculations Checked By: TE
Date: 11/3/2025

Wastewater Retention Pond Volume Analysis

SOZINHO DAIRY #5

A. POND STORAGE VOLUME

SUMMARY ***(See Appendix B for Calculations)***

Pond	Pond Type	Depth of Pond November 1st (ft)	Storage Period Pond Volume Reduction (ft^3)
Pond 1:	Irrigation	2.00	251,522
Pond 2C:	Irrigation	0.50	11,265
Pond 2A:	Irrigation	0.50	14,992
Pond 2B:	Irrigation	0.50	14,992

Pond	Total Raw Volume (gal)	1 Foot Freeboard Reduction (gal)	Storage Period Pond Reduction (gal)	Total Retention Volume (gal)
Pond 1:	18,844,753	1,160,987	1,881,514	15,802,252
Pond 2C:	1,328,761	210,123	84,265	1,034,373
Pond 2A:	1,742,958	272,436	112,149	1,358,373
Pond 2B:	1,742,958	272,436	112,149	1,358,373
			TOTAL:	**19,553,372**

B. PROCESS WASTEWATER VOLUME ANALYSIS

Age of Animal & Housing Type	*# of Animals*	*Waste Produced - Urine & Manure (ft^3/day) (ASABE 384.2)*	*Hours/Day on Flush Surface*	*Single Stage Mechanical Separator, BIDA Beds, and Separation Ponds Reduction Factor*	*Total (gal/day)*
Milking Cows (Freestall)	1,250	2.4	18	75%	4,208
Dry Cows (Open Lot)	187	1.3	0	75%	0
Heifers: 15-24 mo. (Open Lot)	747	0.78	0	75%	0
Heifers: 7-14 mo. (Open Lot)	799	0.78	0	75%	0
Heifers: 4-6 mo. (Open Lot)	325	0.3	0	75%	0
Calves: up to 3 mo. (Not Flushed)	975	0.3	0	75%	0
				Total :	**4,208**

Milk Barn Wastewater Output (Obtained from 2010 WMP)

Sprinkler Pen/Barn Flush Combo:	43,100	gallons/day*
TOTAL:	**43,100**	**gallons/day**

Summary

Wastewater Source	*Volume (gal./day)*	*Total Volume Accumulated in 120 day period (gal.)*
Milk Barn Wastewater Output:	43,100	5,172,000
Animal Output (Urine & Manure):	4,208	504,900
Total Process Wastewater Volume From Operations:	**47,308**	**5,676,900**

C. PRECIPITATION RUN-OFF VOLUME ANALYSIS

Rainfall Run-off from Production Area

Total Additional Production Tributary Area	2,929,972	ft^2
	67.26	*acres*

Run-off Coefficients

Runoff Coefficient for Impervious:	0.50
Runoff Coefficient for Pervious:	0.20
25 Yr. 24 Hr. Storm Runoff Coefficient for Impervious:	0.97
25 Yr. 24 Hr. Storm Runoff Coefficient for Pervious:	0.35

Conversion Factor: **0.623377**

(7.48051941 gal/ft^3 x 1 ft/12 in)

Production Area Subdivision Summary

Area Description	Run-off Area (ft^2)	Run-off Coefficient	Weighted Run-off Area (ft^2)
Wastewater Retention Pond Area	267,293	1.00	267,293
BioFiltro Vermifiltration System	216,000	1.00	216,000
Total Impervious Area	571,807	0.50	285,904
Total Pervious Area	2,090,872	0.20	418,174
Total Production Area	**3,145,972**		**1,187,371**

25 year 24 hour Rainfall Event

Source: NOAA Online Weather Data: NOAA Atlas 14, Volume 6, Version 2 for 25 yr / 24 hr

Area Description	Rainfall (in.)*	Weighted Run-off Area	Total Volume Accumulated (gal)
Wastewater Retention Pond Area	2.49	267,293	**414,894**
Total BioFiltro System of Tributary Area	2.49	216,000	**335,277**
Total Impervious Part of Tributary Area	2.49	285,903.50	**443,782**
Total Pervious Part of Tributary Area	2.49	418,174	**649,094**
Total Production Area		**1,187,371**	**1,843,046**

Run-Off to Wastewater Retention Basin

Source: California Department of Water Resources (DWR) & California Irrigation Management Information Systems (CIMIS) Online Data from Sampling Stations, Appendix B

Rational Method - Equation:

Average Rainfall (in)/12 X (Total Production Area (ft^2)- Wastewater Pond Area(ft^2)) X (Weighted Run-off Coefficient) X 7.48051941 (ft^3 to gallons) = Normal Rainfall Run-off Volume to Pond (gallons)

Normal Precipitation & Run-off

Month	Ave. Rainfall (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	0.86	30	636,554
December	1.65	31	1,221,296
January	1.91	31	1,413,742
February	1.70	28	1,258,305
Total:	**6.12**	**120**	**4,529,897**

Normal Precipitation & Run-off times a factor of 1.5

Month	Ave. Rainfall X 1.5 (in.)	Days of Retention	Total Volume Accumulated in Each Period (gal.)
November	1.29	30	954,831
December	2.48	31	1,831,944
January	2.87	31	2,120,614
February	2.55	28	1,887,457
Total:	**9.18**	**120**	**6,794,846**

Evaporation from Wastewater Basin

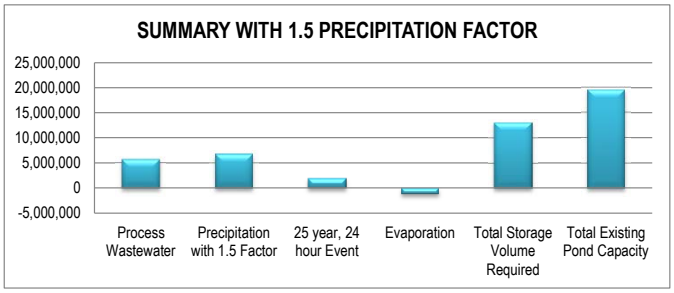
Source DWR-San Joaquin District Plan Evaporation Monthly Averages for Fresno and Bakersfield from 1958-2010

Month	*Bakersfield Evaporation Rate (in.)*	*Fresno Evaporation Rate (in.)*	*Average Evaporation Rate (in.)*	*Total Volume Evaporated (gal.)*
November	2.24	2.25	2.25	374,071
December	1.35	1.21	1.28	213,279
January	1.44	1.26	1.35	224,943
February	2.25	2.08	2.17	360,741
Total:	**7.28**	**6.80**	**7.04**	**1,173,034**

D. SUMMARY OF REQUIRED WASTEWATER RETENTION POND STORAGE VOLUME:

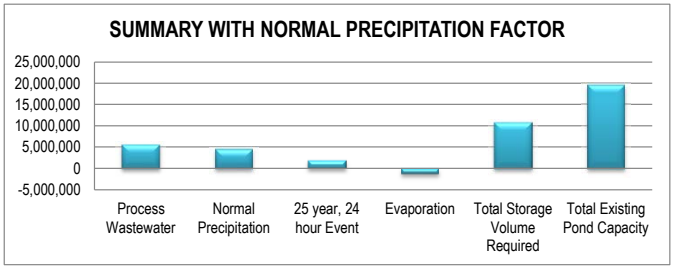
1.5 PRECIPITATION FACTOR

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	5,676,900
Wastewater Accumulated From Normal Precipitation w/ 1.5 Factor	6,794,846
Wastewater Accumulated From 25 Year, 24 Hour Event	1,843,046
Less: Evaporation from Wastewater Retention Ponds	(1,173,034)
Net Required Wastewater Retention Pond Storage Volume	**13,141,757**
Less: Net Existing Wastewater Retention Ponds Storage Volume	19,553,372
Excess Wastewater Retention Pond Capacity	**6,411,614**



1.5 PRECIPITATION FACTOR NOT INCLUDED

Volume Description	Total Volume in 120 Day Period (gal.)
Wastewater from Operations	5,676,900
Wastewater Accumulated From Normal Precipitation w/o 1.5 Factor	4,529,897
Wastewater Accumulated From 25 Year, 24 Hour Event	1,843,046
Less: Evaporation from Wastewater Retention Ponds	(1,173,034)
Net Required Wastewater Retention Pond Storage Volume	**10,876,809**
Less: Net Existing Wastewater Retention Ponds Storage Volume	19,553,372
Excess Wastewater Retention Pond Capacity	**8,676,563**



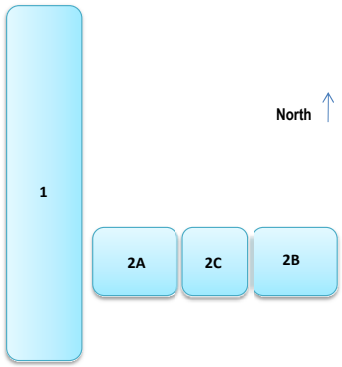
Total Available Retention Days of Storage (1.5 factor): 178.5

Total Available Retention Days of Storage (Normal): 215.7

Calculations Completed By:	AF
Calculations Checked By:	TE
Date:	11/3/2025

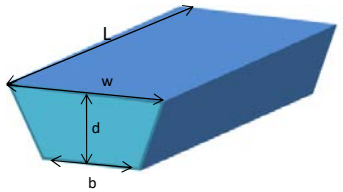
Wastewater Retention Pond Field Capacity Analysis
SOZINHO DAIRY #5

KEY MAP



Volume Formula

B_1= (L)(W)
M= [L-(Sd)][W-(Sd)]
Volume= 1/6d(B_1+4M+B_2)



SUMMARY

Pond	Total Raw Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Volume Reduction (ft^3)	Total Retention Volume (ft^3)
Pond 1:	2,519,177	155,201	251,522	**2,112,454**
Pond 2C:	177,630	28,089	11,265	**138,276**
Pond 2A:	233,000	36,419	14,992	**181,588**
Pond 2B:	233,000	36,419	14,992	**181,588**
			TOTAL:	**2,613,906**

Pond	Total Volume (gal)	1 Foot Freeboard Reduction (gal)	Storage Period Pond Reduction (gal)	Total Retention Volume (gal)
Pond 1:	18,844,753	1,160,987	1,881,514	**15,802,252**
Pond 2C:	1,328,761	210,123	84,265	**1,034,373**
Pond 2A:	1,742,958	272,436	112,149	**1,358,373**
Pond 2B:	1,742,958	272,436	112,149	**1,358,373**
			TOTAL:	**19,553,372**

Definitions:

Irrigation Pond: Capacity is that volume above the residual solids*, less the freeboard

** Residual Solids are assumed to be 2 feet deep if the wastewater did not pass through a solids separation system before entering the pond. If there is solids separation before entering the pond, the assumed level of residual solids is reduced by half. If there is secondary separation after the primary separation, the residual solids are reduced again by half.*

Pond 1 - Irrigation Pond



Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	1165.00	1165.00	1142.60
Pond Top Width	134.00	134.00	111.60
Average Depth (d)	18.00	1.00	2.00
Side Slope H:V (S)	0.70	0.70	0.70
Wastewater Pond Surface Area	156,110	156,110	127,514
Calculations:			
B_1=	156,110	156,110	127,514
B_2=	124,010	154,293	124,010
M=	139,901	155,201	125,760
Calculated Volume (ft^3):	**2,519,177**	**155,201**	**251,522**

Pond 2C - Irrigation Pond



Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	170.00	170.00	151.80
Pond Top Width	168.00	168.00	149.80
Average Depth (d)	7.00	1.00	0.50
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	28,560	28,560	22,740
Calculations:			
B_1=	28,560	28,560	22,740
B_2=	22,319	27,621	22,319
M=	25,344	28,089	22,529
Calculated Volume (ft^3):	**177,630**	**28,089**	**11,265**

Pond 2A - Irrigation Pond



Note: Pond depth and side slopes derived from 2010 WMP calculations.

Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	220.00	220.00	201.80
Pond Top Width	168.00	168.00	149.80
Average Depth (d)	7.00	1.00	0.50
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	36,960	36,960	30,230
Calculations:			
B_1=	36,960	36,960	30,230
B_2=	29,739	35,881	29,739
M=	33,254	36,419	29,984
Calculated Volume (ft^3):	**233,000**	**36,419**	**14,992**

Pond 2B - Irrigation Pond



Note: Pond depth and side slopes derived from 2010 WMP calculations.

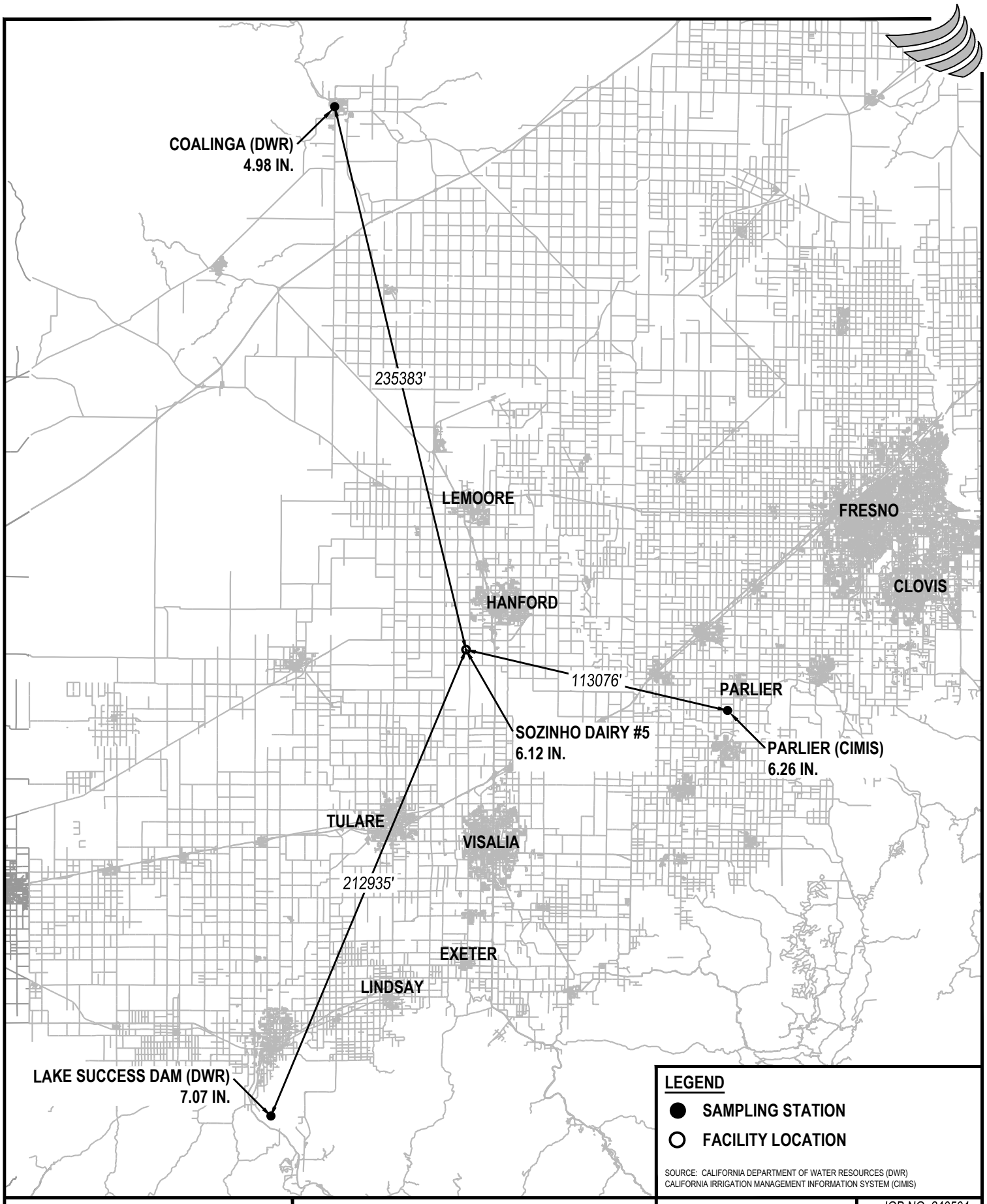
Existing Pond Surveyed Dimensions

	Total Volume (ft^3)	1 Foot Freeboard Reduction (ft^3)	Storage Period Pond Reduction (ft^3)
Pond Top Length	220.00	220.00	201.80
Pond Top Width	168.00	168.00	149.80
Average Depth (d)	7.00	1.00	0.50
Side Slope H:V (S)	1.40	1.40	1.40
Wastewater Pond Surface Area	36,960	36,960	30,230
Calculations:			
B_1=	36,960	36,960	30,230
B_2=	29,739	35,881	29,739
M=	33,254	36,419	29,984
Calculated Volume (ft^3):	**233,000**	**36,419**	**14,992**

0.86

APPENDIX B

NORMAL PRECIPITATION ANALYSIS SUMMARY



4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
TEL: 559.802.3052
FAX: 559.802.3215
www.4-creeks.com

DWR COLLECTION LOCATIONS

SOZINHO DAIRY #5

KINGS COUNTY, CA

NORTH

JOB NO. 240504

APPENDIX B

11/3/2025

1"= 10 MILES

Calculations Completed By:	AF
Calculations Checked By:	TE
Date:	11/3/2025

SOZINHO DAIRY #5

Appendix B - Normal Precipitation Analysis Summary

Source: Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: CIMIS
http://wwwcimis.water.ca.gov/cimis/frontMonthlyReport.do

Average Precipitation at 3 Nearest Precipitation Recording Station *(Inches)*

	Parlier	*Success Dam*	*Coalinga*
November	0.98	0.93	0.66
December	1.72	2.00	1.21
January	1.90	2.18	1.64
February	1.66	1.97	1.47
March	1.92	2.30	1.17

Average Rainfall

Enter Latitude & Longitude:

Latitude: 36°17'39.95"N Longitude: 119°35'7.97"W

Enter State Plane Coordinates:

x:	1,947,404	meters
	6,389,122	ft
y:	606,805	meters
	1,990,830	ft

(State Plane Coordinates and Station proximity detailed in CAD Exhibit, See Attachment)

Normal Precipitation Summary

(Average based on proximity to DWR collection station)

120 Day Precipitation (November - February)

November:	0.86	inches
December:	1.65	inches
January:	1.91	inches
February:	1.70	inches

Retention Period Total Precipitation

November - February: 6.12 in.

Normal Precipitation Averages

Source:Department of Water Resources
http://cdec.water.ca.gov/selectQuery.html
Source: NOAA Geodetic to SPC
http://www.ngs.noaa.gov/cgi-bin/spc_getpc.prl

CIMIS-Parlier (#39)
1983-2025

Latitude: 36.597444 N 36° 35' 51" N
Longitude: 119.50404 W 119° 30' 15" W
Zone: 404

State Plane Coordinates:
x: 1,954,902.121 meters
6,413,720.869 ft
y: 640,385.499 meters
2,101,002.293 ft

Date / Time	RAIN INCHES
May-1983	1.65
Jun-1983	2.95
Jul-1983	0
Aug-1983	0.08
Sep-1983	1.73
Oct-1983	0.16
Nov-1983	3.23
Dec-1983	2.05
Jan-1984	0.16
Feb-1984	1.5
Mar-1984	0.79
Apr-1984	0.2
May-1984	0
Jun-1984	0.08
Jul-1984	0.08
Aug-1984	0.55
Sep-1984	0
Oct-1984	0.71
Nov-1984	3.31
Dec-1984	2.01
Jan-1985	0.12
Feb-1985	1.14
Mar-1985	3.19
Apr-1985	0.2
May-1985	0
Jun-1985	0.31
Jul-1985	0.08
Aug-1985	0.08
Sep-1985	0.2
Oct-1985	0.94
Nov-1985	3.43
Dec-1985	0.98
Jan-1986	1.73
Feb-1986	4.57
Mar-1986	4.45
Apr-1986	0.83
May-1986	0.16
Jun-1986	0.08
Jul-1986	0.16
Aug-1986	0.08
Sep-1986	0.35
Oct-1986	0.08
Nov-1986	0.16
Dec-1986	1.54
Jan-1987	2.44
Feb-1987	2.76
Mar-1987	2.6
Apr-1987	0.67
May-1987	0.87
Jun-1987	0.12
Jul-1987	0.31
Aug-1987	0.08
Sep-1987	0.08
Oct-1987	2.48
Nov-1987	1.73
Dec-1987	1.69
Jan-1988	2.36
Feb-1988	0.83
Mar-1988	0.35
Apr-1988	2.64
May-1988	0.59
Jun-1988	0.47
Jul-1988	0.16
Aug-1988	0.12
Sep-1988	0.28
Oct-1988	0.08
Nov-1988	1.85
Dec-1988	2.87
Jan-1989	0.59
Feb-1989	1.34
Mar-1989	2.13
Apr-1989	0.16
May-1989	0.67
Jun-1989	0.16
Jul-1989	0.12
Aug-1989	0.12
Sep-1989	0.87
Oct-1989	0.08
Nov-1989	0.31
Dec-1989	0.04
Jan-1990	3.19
Feb-1990	1.69
Mar-1990	0.75

Parlier (#39)

November:	0.9757	in.
December:	1.7181	in.
January:	1.8988	in.
February:	1.6638	in.
March:	1.9161	in.
April:	0.9234	in.

November - February Total
6.2564 in.

DWR-SUCCESS DAM (SCC)
1981-2025

Latitude: 36.056667 N 36° 03' 24"
Longitude: 118.924167 W 118° 55' 27"
Zone: 404

State Plane Coordinates:
x: 2,007,027.540 meters
6,584,736.024 ft
y: 580,746.326 meters
1,905,335.715 ft

Date / Time	RAIN INCHES
Aug-1981	0
Sep-1981	0
Oct-1981	0.94
Nov-1981	0.89
Dec-1981	0.84
Jan-1982	0.7
Feb-1982	0.08
Mar-1982	0.28
Apr-1982	0.7
May-1982	0
Jun-1982	0.54
Jul-1982	0
Aug-1982	0
Sep-1982	0.95
Oct-1982	0.48
Nov-1982	0.87
Dec-1982	0.85
Jan-1983	0.95
Feb-1983	0.22
Mar-1983	0.18
Apr-1983	0.53
May-1983	0.58
Jun-1983	0
Jul-1983	0
Aug-1983	0
Sep-1983	0.59
Oct-1983	0.74
Nov-1983	0.74
Dec-1983	0.29
Jan-1984	0.12
Feb-1984	0.8
Mar-1984	0.05
Apr-1984	0.51
May-1984	0
Jun-1984	0.02
Jul-1984	0.15
Aug-1984	0.12
Sep-1984	0
Oct-1984	0.6
Nov-1984	2.47
Dec-1984	1.55
Jan-1985	1
Feb-1985	0.86
Mar-1985	1.99
Apr-1985	0.06
May-1985	0.19
Jun-1985	0.01
Jul-1985	0
Aug-1985	0
Sep-1985	0.99
Oct-1985	0.57
Nov-1985	3.91
Dec-1985	0.83
Jan-1986	1.82
Feb-1986	3.01
Mar-1986	3.33
Apr-1986	0.36
May-1986	0
Jun-1986	0
Jul-1986	0
Aug-1986	0
Sep-1986	0
Oct-1986	0.17
Nov-1986	0.85
Dec-1986	0.91
Jan-1987	1.93
Feb-1987	1.83
Mar-1987	1.79
Apr-1987	0.32
May-1987	0.02
Jun-1987	0.04
Jul-1987	0
Aug-1987	0
Sep-1987	0
Oct-1987	0.68
Nov-1987	1.3
Dec-1987	1.29
Jan-1988	2.16
Feb-1988	0.12
Mar-1988	0.89

SUCCESS DAM (SCC)

November:	0.9251	in.
December:	2.0034	in.
January:	2.1767	in.
February:	1.9712	in.
March:	2.3028	in.
April:	1.1341	in.

November - February Total
7.0764 in.

DWR-Coalinga (CLN)
1940 - 2025

Latitude: 36.1360°N 36° 8' 9.6"
Longitude: 120.3610°W 120° 21' 39.6"
Zone: 404

State Plane Coordinates:
x: 1,877,505.172 meters
6,159,793.871 ft
y: 589,933.250 meters
1,935,476.542 ft

Date / Time	RAIN INCHES
Oct-1940	0
Nov-1940	0
Dec-1940	3.89
Jan-1941	1.79
Feb-1941	4.96
Mar-1941	2.83
Apr-1941	1.06
May-1941	0
Jun-1941	0
Jul-1941	0
Aug-1941	0
Sep-1941	0
Oct-1941	0.56
Nov-1941	0.5
Dec-1941	2.51
Jan-1942	1.39
Feb-1942	0.41
Mar-1942	0.85
Apr-1942	1.28
May-1942	0.13
Jun-1942	0
Jul-1942	0
Aug-1942	0
Sep-1942	0
Oct-1942	0.31
Nov-1942	0.2
Dec-1942	0.53
Jan-1943	2.63
Feb-1943	0.72
Mar-1943	2.14
Apr-1943	0.45
May-1943	0
Jun-1943	0
Jul-1943	0
Aug-1943	0
Sep-1943	0
Oct-1943	0.31
Nov-1943	0.15
Dec-1943	1.68
Jan-1944	0.39
Feb-1944	3.13
Mar-1944	0.15
Apr-1944	0.25
May-1944	0.36
Jun-1944	0.43
Jul-1944	0
Aug-1944	0
Sep-1944	0
Oct-1944	0.18
Nov-1944	0.29
Dec-1944	0.31
Jan-1945	0.48
Feb-1945	1.7
Mar-1945	1.16
Apr-1945	0.09
May-1945	0.85
Jun-1945	0.01
Jul-1945	0
Aug-1945	0.07
Sep-1945	0
Oct-1945	0.72
Nov-1945	0.4
Dec-1945	1.42
Jan-1946	0.27
Feb-1946	0.96
Mar-1946	1.39
Apr-1946	0.01
May-1946	0.17
Jun-1946	0
Jul-1946	0.03
Aug-1946	0
Sep-1946	0
Oct-1946	0.27
Nov-1946	1.33
Dec-1946	1.3
Jan-1947	0.24
Feb-1947	0.41
Mar-1947	0.52

Coalinga (CLN)

November:	0.6617	in.
December:	1.2071	in.
January:	1.6388	in.
February:	1.4719	in.
March:	1.1743	in.
April:	0.5399	in.

November - February Total
4.9795 in.

NOVEMBER

Appendix B - Normal Precipitation Analysis Summary

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413720.869
y1	2101002.293
z1(Rain)	0.975714286

Point 2	Success(Sta.)
x2	6584736.024
y2	1905335.715
z2(Rain)	0.925079365

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	0.661686747

		1	2101002.293	0.975714286	
A=		1	1905335.715	0.925079365	A= 53063.31065
		1	1935476.542	0.661686747	

	6413720.869		1	0.975714286	
B=	6584736.024		1	0.925079365	B= 66561.04135
	6159793.871		1	0.661686747	

	6413720.869	2101002.293		1	
C=	6584736.024	1905335.715		1	C= -77992438672
	6159793.871	1935476.542		1	

	6413720.869	2101002.293	0.975714286		
-D=	6584736.024	1905335.715	0.925079365		D= -4.0408E+11
	6159793.871	1935476.542	0.661686747		

X=	6389122.096	
Y=	1990829.921	
Z=	0.86	Value of rainfall data on site

DECEMBER

Appendix B - Normal Precipitation Analysis Summary

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413720.869
y1	2101002.293
z1(Rain)	1.718095238

Point 2	Success(Sta.)
x2	6584736.024
y2	1905335.715
z2(Rain)	2.003384615

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.207108434

A= | 1 | 2101002.293 | 1.718095238 |
| 1 | 1905335.715 | 2.003384615 |
| 1 | 1935476.542 | 1.207108434 |

A= 147205.778

B= | 6413720.869 | 1 | 1.718095238 |
| 6584736.024 | 1 | 2.003384615 |
| 6159793.871 | 1 | 1.207108434 |

B= 14943.812

C= | 6413720.869 | 2101002.293 | 1 |
| 6584736.024 | 1905335.715 | 1 |
| 6159793.871 | 1935476.542 | 1 |

C= -77992438672

-D= | 6413720.869 | 2101002.293 | 1.718095238 |
| 6584736.024 | 1905335.715 | 2.003384615 |
| 6159793.871 | 1935476.542 | 1.207108434 |

D= -8.41535E+11

X= 6389122.096

Y= 1990829.921

Z= 1.65 Value of rainfall data on site

JANUARY

Appendix B - Normal Precipitation Analysis Summary

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413720.869
y1	2101002.293
z1(Rain)	1.898809524

Point 2	Success(Sta.)
x2	6584736.024
y2	1905335.715
z2(Rain)	2.176666667

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.638780488

		1	2101002.293	1.898809524	
A=		1	1905335.715	2.176666667	A= 96871.50401
		1	1935476.542	1.638780488	
	6413720.869		1	1.898809524	
B=	6584736.024		1	2.176666667	B= -26086.52448
	6159793.871		1	1.638780488	
	6413720.869	2101002.293		1	
C=	6584736.024	1905335.715		1	C= -77992438672
	6159793.871	1935476.542		1	
	6413720.869	2101002.293		1.898809524	
-D=	6584736.024	1905335.715		2.176666667	D= -4.18406E+11
	6159793.871	1935476.542		1.638780488	

X= 6389122.096

Y= 1990829.921

Z= 1.91 Value of rainfall data on site

FEBRUARY

Appendix B - Normal Precipitation Analysis Summary

Calculations of a point on a Plane

Equation for a Plane

Ax+By+Cz+D=0

Point 1	Parlier(Sta.)
x1	6413720.869
y1	2101002.293
z1(Rain)	1.663809524

Point 2	Success(Sta.)
x2	6584736.024
y2	1905335.715
z2(Rain)	1.971230769

Point 3	Coalinga(Sta.)
x3	6159793.871
y3	1935476.542
z3(Rain)	1.471927711

		1	2101002.293	1.663809524	
A=		1	1905335.715	1.971230769	A= 88430.99036
		1	1935476.542	1.471927711	
	6413720.869		1	1.663809524	
B=	6584736.024		1	1.971230769	B= -45247.85615
	6159793.871		1	1.471927711	
	6413720.869	2101002.293		1	
C=	6584736.024	1905335.715		1	C= -77992438672
	6159793.871	1935476.542		1	
	6413720.869	2101002.293		1.663809524	
-D=	6584736.024	1905335.715		1.971230769	D= -3.42341E+11
	6159793.871	1935476.542		1.471927711	

X= 6389122.096

Y= 1990829.921

Z= 1.70 Value of rainfall data on site

APPENDIX C

25 YEAR, 24 HOUR STORM WATER DATA

NOAA Atlas 14, Volume 6, Version 2
Location name: Hanford, California, USA*
Latitude: 36.2969°, Longitude: -119.5865°
Elevation: 235 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.068 (0.057-0.081)	0.083 (0.070-0.099)	0.107 (0.090-0.128)	0.130 (0.108-0.157)	0.166 (0.134-0.209)	0.200 (0.157-0.257)	0.239 (0.183-0.317)	0.287 (0.212-0.392)	0.363 (0.256-0.520)	0.433 (0.294-0.645)
10-min	0.097 (0.082-0.116)	0.119 (0.101-0.142)	0.153 (0.129-0.184)	0.186 (0.155-0.225)	0.238 (0.192-0.299)	0.286 (0.225-0.369)	0.343 (0.262-0.454)	0.411 (0.304-0.561)	0.520 (0.367-0.745)	0.621 (0.421-0.925)
15-min	0.118 (0.100-0.140)	0.144 (0.122-0.172)	0.185 (0.157-0.222)	0.225 (0.188-0.272)	0.288 (0.232-0.362)	0.346 (0.272-0.446)	0.415 (0.317-0.549)	0.497 (0.367-0.679)	0.629 (0.443-0.901)	0.751 (0.509-1.12)
30-min	0.162 (0.137-0.193)	0.198 (0.168-0.237)	0.255 (0.215-0.305)	0.309 (0.258-0.374)	0.397 (0.319-0.498)	0.476 (0.374-0.613)	0.571 (0.436-0.755)	0.683 (0.505-0.934)	0.865 (0.610-1.24)	1.03 (0.700-1.54)
60-min	0.224 (0.190-0.266)	0.274 (0.232-0.327)	0.353 (0.298-0.422)	0.427 (0.357-0.517)	0.548 (0.441-0.689)	0.659 (0.517-0.848)	0.789 (0.602-1.04)	0.945 (0.698-1.29)	1.20 (0.843-1.71)	1.43 (0.968-2.13)
2-hr	0.330 (0.280-0.393)	0.402 (0.340-0.479)	0.508 (0.429-0.609)	0.607 (0.507-0.733)	0.759 (0.610-0.953)	0.892 (0.700-1.15)	1.04 (0.796-1.38)	1.22 (0.900-1.66)	1.49 (1.05-2.13)	1.73 (1.17-2.57)
3-hr	0.407 (0.345-0.485)	0.498 (0.421-0.594)	0.630 (0.531-0.754)	0.748 (0.625-0.904)	0.928 (0.746-1.16)	1.08 (0.849-1.39)	1.25 (0.956-1.66)	1.44 (1.07-1.98)	1.74 (1.22-2.49)	1.99 (1.35-2.96)
6-hr	0.550 (0.466-0.656)	0.686 (0.580-0.818)	0.875 (0.739-1.05)	1.04 (0.869-1.26)	1.28 (1.03-1.61)	1.48 (1.16-1.90)	1.69 (1.29-2.23)	1.92 (1.42-2.62)	2.26 (1.59-3.23)	2.54 (1.72-3.78)
12-hr	0.702 (0.595-0.837)	0.923 (0.782-1.10)	1.22 (1.03-1.46)	1.46 (1.22-1.77)	1.80 (1.45-2.26)	2.07 (1.62-2.66)	2.34 (1.79-3.10)	2.63 (1.94-3.59)	3.03 (2.14-4.34)	3.35 (2.27-4.99)
24-hr	0.879 (0.753-1.05)	1.22 (1.04-1.45)	1.66 (1.42-1.98)	2.01 (1.71-2.42)	2.49 (2.05-3.08)	2.85 (2.31-3.59)	3.22 (2.56-4.13)	3.60 (2.80-4.73)	4.11 (3.08-5.59)	4.51 (3.29-6.32)
2-day	1.07 (0.917-1.28)	1.50 (1.28-1.78)	2.04 (1.75-2.44)	2.49 (2.11-3.00)	3.09 (2.55-3.82)	3.55 (2.88-4.46)	4.01 (3.19-5.15)	4.49 (3.49-5.90)	5.14 (3.86-6.99)	5.64 (4.11-7.90)
3-day	1.20 (1.03-1.43)	1.67 (1.43-1.99)	2.27 (1.94-2.72)	2.76 (2.34-3.33)	3.44 (2.84-4.25)	3.95 (3.21-4.97)	4.48 (3.56-5.75)	5.03 (3.91-6.61)	5.78 (4.33-7.85)	6.36 (4.64-8.90)
4-day	1.33 (1.14-1.58)	1.81 (1.55-2.16)	2.45 (2.09-2.92)	2.97 (2.52-3.58)	3.70 (3.05-4.57)	4.26 (3.46-5.36)	4.84 (3.85-6.22)	5.45 (4.23-7.16)	6.29 (4.72-8.55)	6.95 (5.06-9.73)
7-day	1.59 (1.36-1.89)	2.08 (1.78-2.48)	2.74 (2.34-3.28)	3.31 (2.80-3.98)	4.11 (3.39-5.08)	4.75 (3.85-5.97)	5.43 (4.31-6.96)	6.15 (4.78-8.08)	7.18 (5.38-9.76)	8.01 (5.84-11.2)
10-day	1.75 (1.50-2.09)	2.23 (1.91-2.66)	2.90 (2.48-3.47)	3.48 (2.95-4.19)	4.32 (3.56-5.34)	5.01 (4.06-6.30)	5.75 (4.57-7.38)	6.55 (5.09-8.60)	7.71 (5.78-10.5)	8.67 (6.32-12.1)
20-day	2.19 (1.87-2.61)	2.76 (2.36-3.29)	3.56 (3.04-4.26)	4.27 (3.62-5.14)	5.30 (4.38-6.56)	6.17 (5.00-7.76)	7.10 (5.65-9.12)	8.13 (6.32-10.7)	9.64 (7.23-13.1)	10.9 (7.94-15.3)
30-day	2.56 (2.20-3.06)	3.28 (2.81-3.92)	4.29 (3.66-5.12)	5.16 (4.37-6.20)	6.41 (5.29-7.92)	7.44 (6.03-9.35)	8.53 (6.78-11.0)	9.73 (7.56-12.8)	11.4 (8.59-15.6)	12.9 (9.37-18.0)
45-day	3.06 (2.62-3.64)	4.02 (3.44-4.80)	5.34 (4.56-6.38)	6.45 (5.47-7.76)	8.01 (6.61-9.90)	9.25 (7.51-11.6)	10.6 (8.39-13.5)	11.9 (9.27-15.7)	13.9 (10.4-18.9)	15.4 (11.3-21.6)
60-day	3.53 (3.02-4.21)	4.76 (4.07-5.68)	6.39 (5.46-7.64)	7.74 (6.57-9.31)	9.60 (7.92-11.9)	11.1 (8.96-13.9)	12.5 (9.97-16.1)	14.1 (10.9-18.5)	16.2 (12.2-22.1)	17.9 (13.1-25.1)

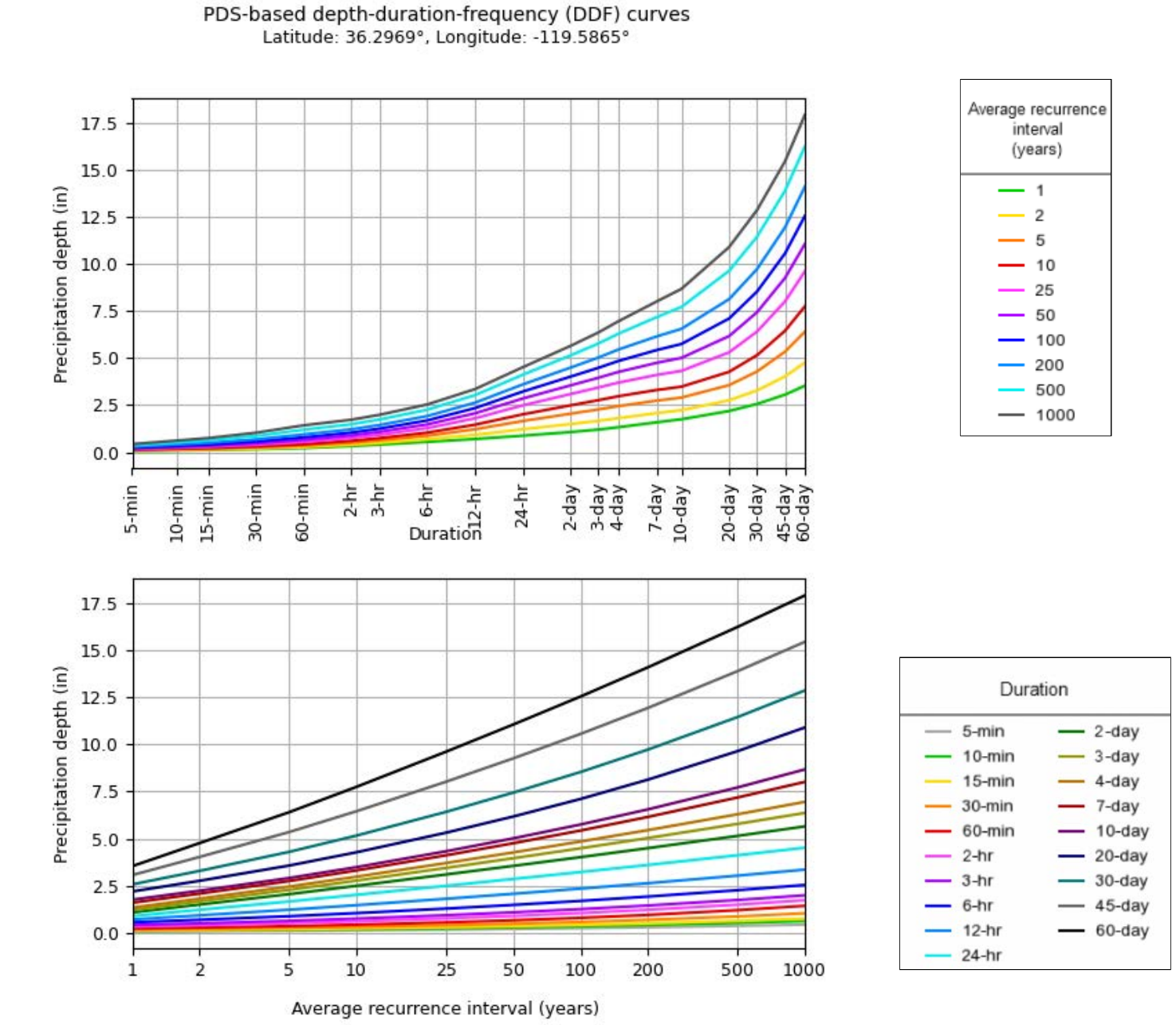
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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PF graphical



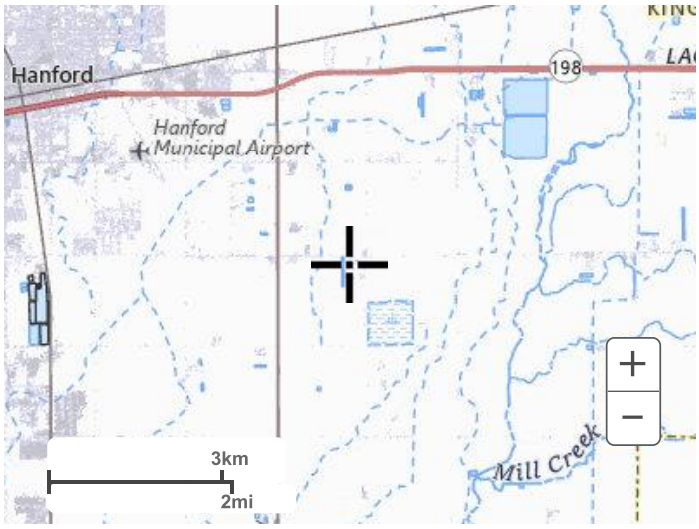
NOAA Atlas 14, Volume 6, Version 2

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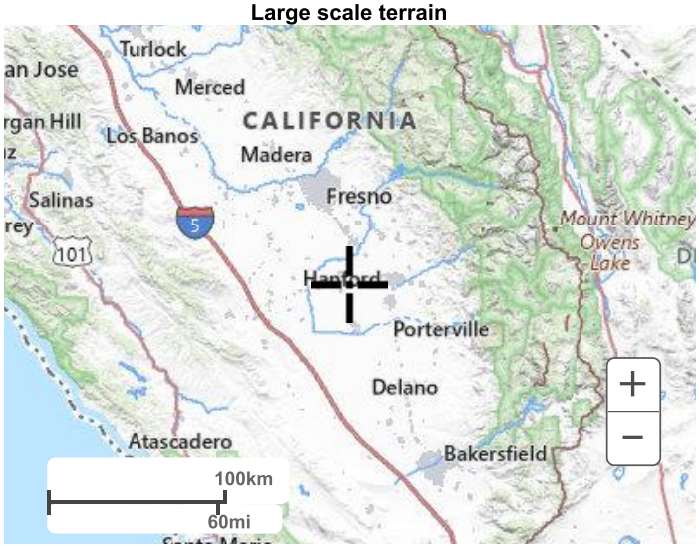
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Maps & aerials

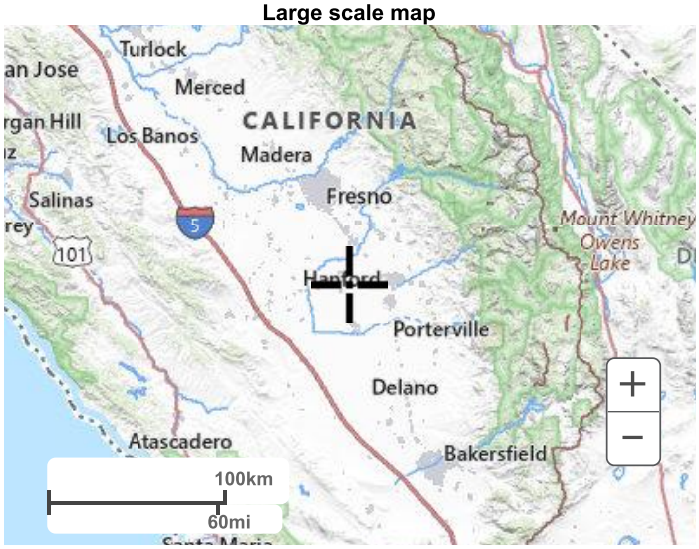
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial



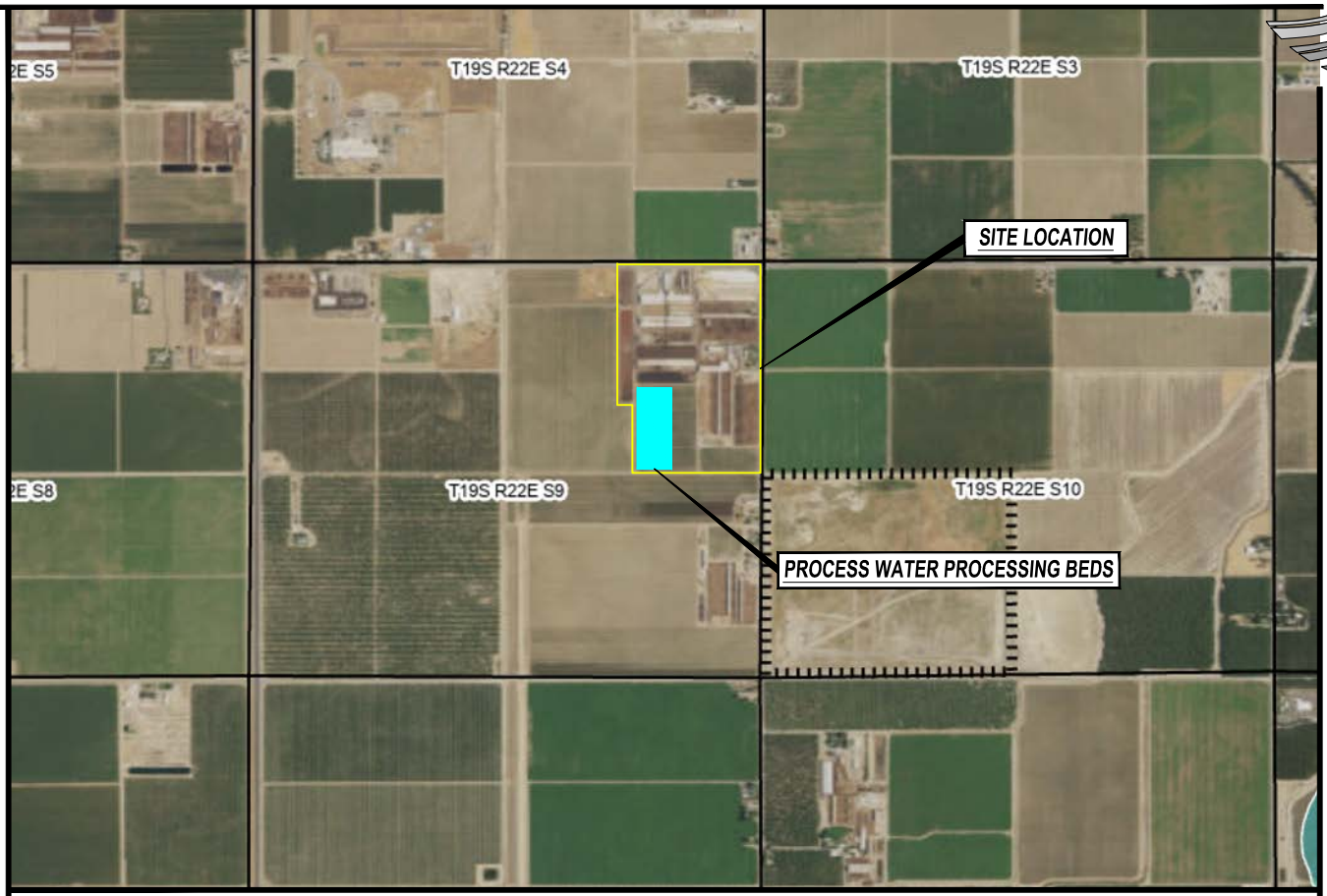
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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX D

FEMA MAP





NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
PANEL 225 OF 875

Panel Contains:

COMMUNITY	NUMBER	PANEL
KINGS COUNTY	060086	0225
CITY OF HANFORD	060088	0225
TULARE COUNTY	065066	0225
UNINCORPORATED AREAS		

MAP NUMBER
06031C0225C
EFFECTIVE DATE
June 16, 2009

FLOOD HAZARD INFORMATION
SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee See Notes Zone X
- Area with Flood Risk due to Levee Zone D

NO SCREEN
- Area of Minimal Flood Hazard Zone X
- Effective LOMRs

OTHER AREAS
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

THE PROJECT SITE IS LOCATED IN THE FLOOD INSURANCE RATE MAP 06031C0225C.

4CREEKS
324 S. SANTA FE, STE. A
VISALIA, CA 93292
(559) 802-3052

FEMA MAP
SOZINHO DAIRY #5
KINGS COUNTY, CA

JOB NO. 240504
APPENDIX D
11/3/2024
NO SCALE

APPENDIX E

EVAPORATION HISTORY 1958 – 2010

AVERAGE MONTHLY EVAPORATION FROM CLASS
'A' PAN IN IRRIGATED PASTURE ENVIRONMENTS NEAR
BAKERSFIELD, CALIFORNIA FROM 1958-2010 /1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAR - OCT TOTAL	JAN - DEC TOTAL
							****EVAPORATION IN INCHES****							
AVERAGE	1.44	2.25	4.13	5.95	8.35	9.58	9.94	8.85	6.62	4.47	2.24	1.35	57.89	65.17
STD DEV	0.34	0.45	0.71	0.86	0.82	0.79	0.82	0.71	0.64	0.43	0.36	0.36	0.72	0.61
STD ERROR	0.05	0.06	0.10	0.12	0.11	0.11	0.11	0.10	0.09	0.06	0.05	0.05	0.10	0.08

AVERAGE MONTHLY EVAPORATION FROM CLASS
'A' PAN IN IRRIGATED PASTURE ENVIRONMENTS AT
CALIFORNIA STATE UNIVERSTIY AT FRESNO
FROM 1968-2010 /1

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MAR - OCT TOTAL	JAN - DEC TOTAL
							****EVAPORATION IN INCHES****							
AVERAGE	1.26	2.08	3.94	6.03	8.75	10.43	11.02	9.67	6.99	4.42	2.25	1.21	61.26	68.07
STD DEV	0.28	0.41	0.77	0.86	1.03	0.92	0.73	0.68	0.57	0.49	0.40	0.30	0.76	0.62
STD ERROR	0.04	0.06	0.12	0.13	0.16	0.14	0.11	0.11	0.09	0.07	0.06	0.05	0.12	0.10

1/ Evaporation measurements are taken from evaporation pans located at standardized sites (irrigated pastures) with static water levels maintained in the pans by supply tanks. The sites are visited at least weekly to measure evaporation from a U.S. Weather Bureau Class 'A' Pan. Other agrometeorological equipment, (i.e.raingauge, anemometer, ambient air thermometers) is installed at onsite DWR agroclimatic stations, and this data is collected weekly along with pan evaporation. The evaporation may be adjusted during times of high wind or dry periods, which represent non-standard conditions.

APPENDIX F

WASTE MANAGEMENT PLAN 2010

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

JUL [illegible] 2010

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

19S	22E	9	Mt. Diablo	36° 17' 53.57" N	119° 35' 11.21" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1970

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:

0016-0020-0006-0000 0016-0020-0028-0000 0016-0020-0035-0000

B. OPERATOR NAME: Mendes, Joe Telephone no.: (559) 582-4906 (Landline) (Cellular)

3790 Lacey BLVD	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Martella, Robin Telephone no.: (559) 752-1019 (Landline) (Cellular)

12051 8th AVE	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sutton, Matt Telephone no.: (925) 944-2856 (Landline) (Cellular)

Title: Professional Engineer

3451-C Vincent RD	Pleasant Hill	CA	94523
Mailing Address Number and Street	City	State	Zip Code

CONTACT NAME: Cordeiro, Kristy Rocha Telephone no.: (209) 669-1800 (Landline) (209) 277-5596 (Cellular)

Title: Technical Service Provider

3213 Liberty Square PKWY	Turlock	CA	95382
Mailing Address Number and Street	City	State	Zip Code

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,300 milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)

1,495 milk and dry cows combined + 15% (pre-expansion limit)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	1,250	1,300	22	1,400
Dry Cows	195	195	0	1,450
Bred Heifers (15-24 mo.)	80	82	0	900
Heifers (7-14 mo.)	1,000	1,020	0	750
Calves (4-6 mo.)	200	205	0	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Holstein

Average milk production: 70 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 125 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 4.0 per day

Number of hours spent milking each day: 20.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 3.0 run cycles/wash

Bulk tank wash vat volume: 75 gallons/cycle

Bulk tank wash wastewater: 900.0 gallons/day

Pipeline wash and sanitizing: 3.0 run cycles/wash

Pipeline wash vat volume: 200 gallons/cycle

Pipeline wash wastewater: 1,200.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 7,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 25,000 gallons/day

Vacuum pumps / air compressors / chillers type: Well Water Cooled (Water Reused/Recycled)

Vacuum pumps / air compressors / chillers volume: 15,000 gallons/day

Milkbarn and equipment wastewater volume generated daily: 43,100 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0	0	0	0	0	0
	of 1,250	*of 195*	*of 80*	*of 1,000*	*of 200*	*of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 78 sprinklers

Duration of each sprinkler cycle: 2.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 4.0 gallons/minute

Total sprinkler pen wastewater volume: 12,980 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

Description	Source	Throughput (gallons per day)	Discharge Destination
Drop hoses and misc	Fresh Water	1,000	Sent to pond

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 40,000 gallons/day

Recycled water reused: 19,980 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 20,020 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 5,172,000 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	113	40.0	50%	2,813
			Total:	2,813

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 20 %

Description of all solids separation equipment used in flushed lane manure management systems:

Separator and processing pit

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	4,179.14	501,496	31,262.11	3,751,453
Manure generated by the herd sent to pond(s):	2,503.64	300,437	18,728.56	2,247,427
Manure generated by the herd sent to dry lot(s):	1,499.20	179,904	11,214.78	1,345,774
Manure solids (herd) removed by separation:	85.34	10,241	638.41	76,609
Liquid component in separated solids not send to pond(s):	90.95	10,914	680.35	81,642
Imported and facility generated bedding sent to pond(s):	23.44	2,813	175.32	21,039
Total manure and bedding sent to pond(s):	2,527.08	303,250	18,903.89	2,268,466
Residual manure solids and bedding sent to pond(s) w/factor:	182.40	21,888	1,364.48	163,737
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:		66,577		498,034

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Hanford

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.10 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 5.88 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
apron	920	4	0.97	0.50	Drains into pond(s).
apron	510	2	0.97	0.50	Drains into pond(s).
apron	350	1	0.97	0.50	Drains into pond(s).
cistern pad	384	1	0.97	0.50	yard
corral pad	5,180	1	0.97	0.50	Drains into pond(s).
drain	70	1	0.97	0.50	Drains into pond(s).
drain	20	1	0.97	0.50	Drains into pond(s).

drivelane	290	1	0.97	0.50	Drains into pond(s).
drivelane	520	1	0.97	0.50	Drains into pond(s).
exposed concrete	360	1	0.97	0.50	Drains into pond(s).
exposed concrete	1,300	1	0.97	0.50	Drains into pond(s).
exposed feedlane	416	1	0.97	0.50	Drains into pond(s).
extra lane	1,215	1	0.97	0.50	Drains into pond(s).
feed area	60,982	1	0.97	0.50	Drains into pond(s).
feedlane	6,960	1	0.97	0.50	Drains into pond(s).
feedlane	40,400	1	0.97	0.50	Drains into pond(s).
feedlane	4,290	1	0.97	0.50	Drains into pond(s).
feedlane	1,640	1	0.97	0.50	Drains into pond(s).
feedlane	17,986	1	0.97	0.50	Drains into pond(s).
feedlane	18,170	1	0.97	0.50	Drains into pond(s).
flush apron	144	1	0.97	0.50	Drains into pond(s).
lane	900	1	0.97	0.50	Drains into pond(s).
main transfer	8,040	1	0.97	0.50	Drains into pond(s).
milkbarn area	4,700	1	0.97	0.50	Drains into pond(s).
milkbarn pad	646	1	0.97	0.50	Drains into pond(s).
milktruck pad	1,260	1	0.97	0.50	Drains into pond(s).
old lane	1,425	1	0.97	0.50	Drains into pond(s).
pad	1,190	1	0.97	0.50	yard
parking	1,488	1	0.97	0.50	Drains into pond(s).
reminant concrete	2,678	1	0.97	0.50	Drains into pond(s).
road	396	1	0.97	0.50	Drains into pond(s).
separator area	30,210	1	0.99	0.99	Drains into pond(s).
separator pad	300	1	0.97	0.50	Drains into pond(s).
silage pad	14,500	1	0.97	0.50	Drains into pond(s).
transfer lane	2,920	1	0.97	0.50	Drains into pond(s).
transfer lane	3,168	1	0.97	0.50	Drains into pond(s).
transfer lane	4,800	1	0.97	0.50	Drains into pond(s).
transfer lane	1,300	1	0.97	0.50	Drains into pond(s).
transfer lane	3,900	1	0.97	0.50	Drains into pond(s).
transfer lane	624	1	0.97	0.50	Drains into pond(s).
transfer lane	2,448	1	0.97	0.50	Drains into pond(s).
transfer lane	360	1	0.97	0.50	Drains into pond(s).
transfer lane exposed	200	1	0.97	0.50	Drains into pond(s).

washpen	1,360	1	0.97	0.50	Drains into pond(s).

Surface area that does not run off into pond(s):	1,574	sq. ft.
Surface area that runs off into pond(s):	252,616	sq. ft.
Total surface area:	254,190	sq. ft.
Runoff from normal storage period rainfall:	517,236	gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	775,853	gallons/storage period
25 year/24 hour storm event runoff:	321,567	gallons/storage period
Total surface area runoff:	838,803	gallons/storage period
Total surface area runoff with 1.5 factor:	1,097,421	gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	yard
commodity barn	1,170	1	yard
commodity barn	3,848	1	yard
fsb's	32,500	4	Wastewater pond
haybarn	7,950	1	yard
milkbarn	7,728	1	Wastewater pond
milkhouse	2,860	1	yard
old equipment shade	72	1	yard
old milkbarn	1,792	1	Wastewater pond
old shade	1,170	1	Wastewater pond
old shade	1,260	1	Wastewater pond
old shade	1,320	1	yard
old shade	2,640	1	yard
old shade	360	1	yard
old shade	3,120	1	yard
old shade	660	1	yard
old washpen	4,536	1	Wastewater pond
shade	1,280	1	Wastewater pond
shade	1,344	1	Wastewater pond
shade	2,310	1	yard
shade	2,499	1	yard
shade	2,560	1	yard

shade	3,276	1	yard
shade	2,400	1	corral
shade	52,976	1	Wastewater pond
shade	8,700	1	Wastewater pond
shade	12,800	1	Wastewater pond
shade	6,200	1	Wastewater pond
shade	4,840	1	yard
shop	630	1	Wastewater pond
shop	1,900	1	yard
shop attachment	216	1	yard

Surface area that does not run off into pond(s): 44,649 sq. ft.

Surface area that runs off into pond(s): 231,712 sq. ft.

Total surface area: 276,361 sq. ft.

Runoff from normal storage period rainfall: 849,330 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,273,995 gallons/storage period

25 year/24 hour storm event runoff: 303,332 gallons/storage period

Total surface area runoff: 1,152,662 gallons/storage period

Total surface area runoff with 1.5 factor: 1,577,327 gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
dairy facility	1,697,957	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 1,697,957 sq. ft.

Total surface area: 1,697,957 sq. ft.

Runoff from normal storage period rainfall: 1,244,757 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,867,135 gallons/storage period

25 year/24 hour storm event runoff: 777,973 gallons/storage period

Total surface area runoff: 2,022,730 gallons/storage period

Total surface area runoff with 1.5 factor: 2,645,108 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: SSB

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	630 ft.	Earthen Depth (ED):	7 ft.
Earthen Width (EW):	168 ft.	Side Slope (S):	1.4 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	0.0 ft.
Calculations			
Liquid Length (LL):	627 ft.	Storage Volume Adjusted for Dead Storage Loss:	582,308 cu. ft.
Liquid Width (LW):	165 ft.		
Pond Surface Area:	105,840 sq. ft.	Pond Marker Elevation:	5.1 ft.
Storage Volume:	582,308 cu. ft.	Evaporation Volume:	667,762 gals/period
		Adjusted Surface Area:	102,605 sq. ft.

POND OR BASIN DESCRIPTION: WWS

Pond is rectangular in shape: [X] Yes [ ] No

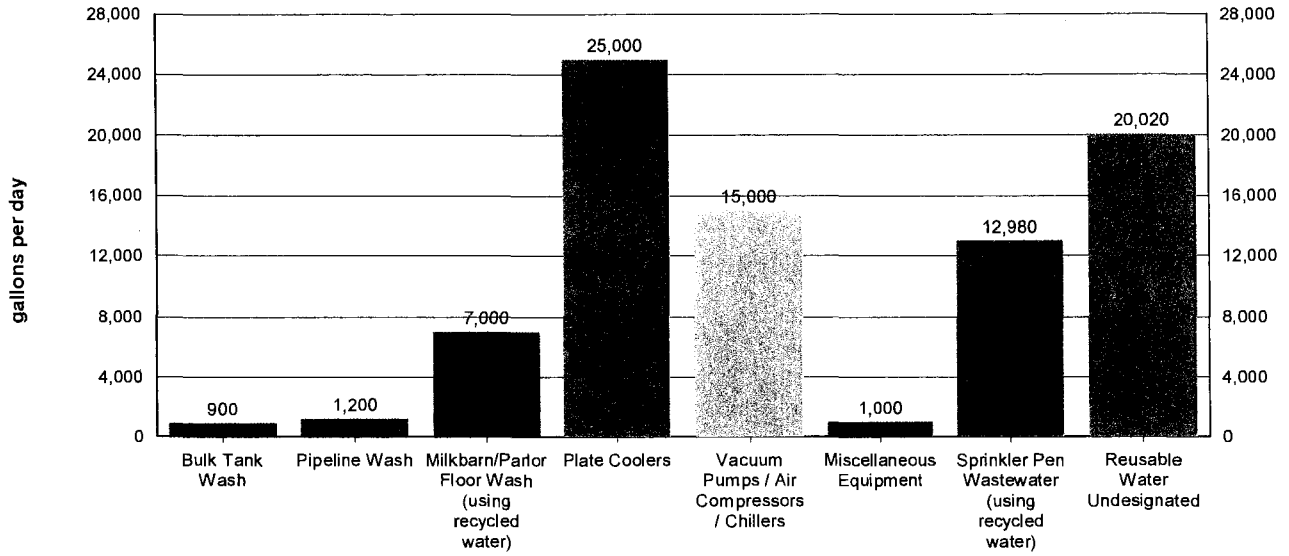
Dimensions			
Earthen Length (EL):	1,165 ft.	Earthen Depth (ED):	18 ft.
Earthen Width (EW):	134 ft.	Side Slope (S):	0.7 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	2.0 ft.
Calculations			
Liquid Length (LL):	1,164 ft.	Storage Volume Adjusted for Dead Storage Loss:	2,112,454 cu. ft.
Liquid Width (LW):	133 ft.		
Pond Surface Area:	156,110 sq. ft.	Pond Marker Elevation:	16.1 ft.
Storage Volume:	2,363,976 cu. ft.	Evaporation Volume:	998,829 gals/period
		Adjusted Surface Area:	153,476 sq. ft.

Potential storage losses (due to dead storage):	251,522.0 cubic feet - or - 1,881,515.2 gallons
Liquid storage surface area:	257,907 sq. ft.
Rainfall onto retention pond(s):	960,166 gallons/storage period
Rainfall runoff into retention pond(s):	2,611,322 gallons/storage period
Normal rainfall onto retention pond(s) with 1.5 factor:	1,440,249 gallons/storage period
Normal rainfall runoff into retention pond(s) with 1.5 factor:	3,916,983 gallons/storage period
Storage period evaporation (default):	13.92 inches/storage period
Storage period evaporation (user-override):	inches/storage period

Storage period evaporation volume:	1,666,591	gallons/storage period
Manure and bedding sent to pond(s):	2,268,466	gallons/storage period
Milkbarn water sent to pond(s):	5,172,000	gallons/storage period
Fresh flush water for storage period:	0	gallons/storage period

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

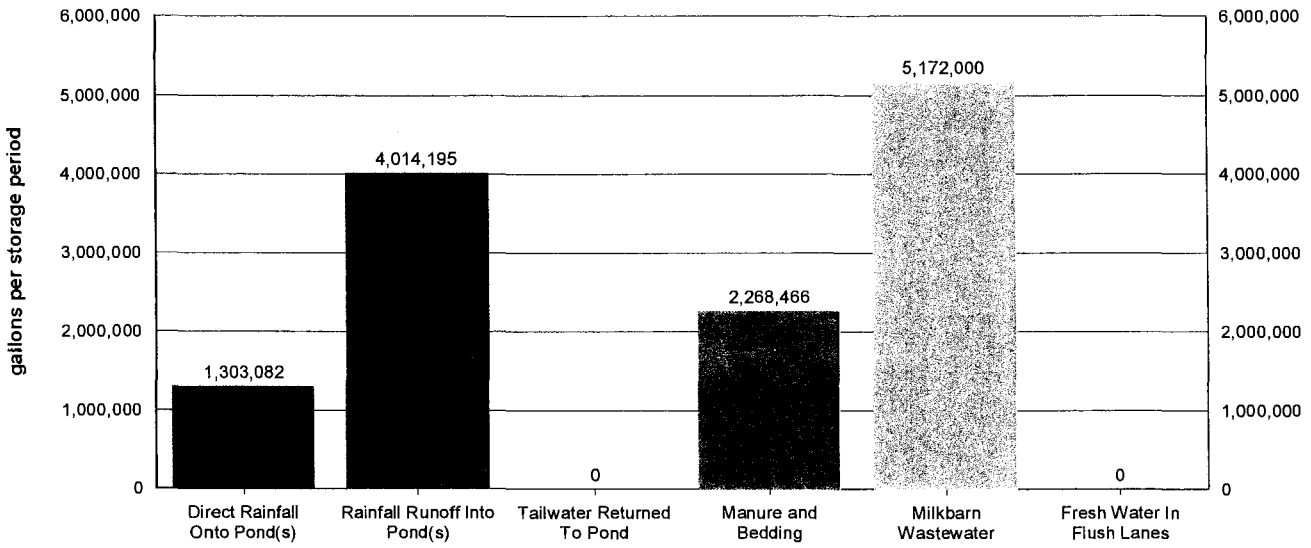


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 43,100 gallons/day

Total milkbarn wastewater generated per period: 5,172,000 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

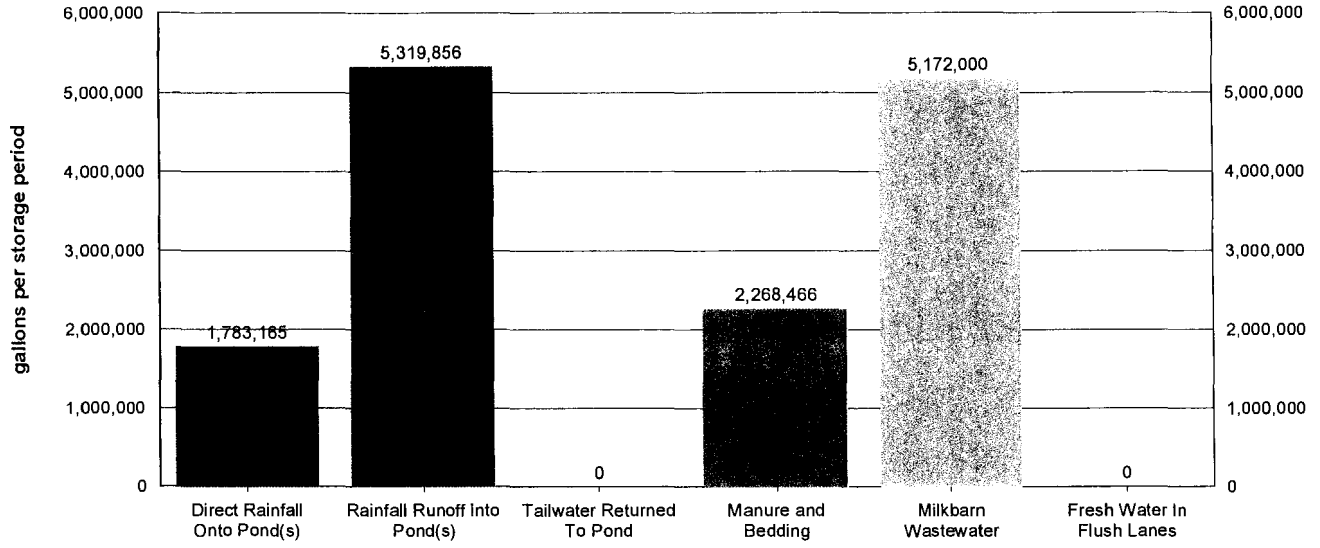


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	106,315	gallons/day
Total process wastewater generated per period:	12,757,743	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	11,091,152	gallons
	1,482,671	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	121,196	gallons/day
Total process wastewater generated per period:	14,543,487	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	12,876,896	gallons
	1,721,391	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy 's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: SSB

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 0 feet above the pond invert beginning in May of each year.

Sludge accumulation will be measured monthly.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are removed using a loader.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2 feet above the pond invert beginning in April of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 6.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are pumped out during irrigations.
Solids are pumped into slurry trucks.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
1/2 old milkhouse	1	648
commodity barn	1	3,848
fsb's	4	130,000
milkbarn	1	7,728
old milkbarn	1	1,792
old shade	1	1,170
old shade	1	1,260
old shade	1	360
old shade	1	3,120
old shade	1	660
old washpen	1	4,536
shade	1	1,280
shade	1	1,344

shade	1	2,310
shade	1	2,499
shade	1	2,560
shade	1	3,276
shade	1	2,400
shade	1	52,976
shade	1	8,700
shade	1	12,800
shade	1	6,200
shade	1	4,840
shop	1	630
Buildings without rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
commodity barn	1	1,170
haybarn	1	7,950
milkhouse	1	2,860
old equipment shade	1	72
old shade	1	1,320
old shade	1	2,640
shop	1	1,900
shop attachment	1	216

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 5th of October

Assessment for other rainfall collections systems will occur on or before: 5th of November

Description of how rainfall collection systems will be assessed:

Gutters and downspouts will be cleaned and repaired as needed.
Roofwater that comes in contact with manured areas will be collected and conveyed to the wastewater system.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 5th of October

Conditions requiring manure removal and/or regrading:

Solid manure is removed twice a year, in the Spring and Fall, usually after harvest.

Solid manure removal and/or regrading will occur on or before: 5th of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 5th of October

Animal housing drainage system maintenance will occur on or before: 5th of November

Animal housing area drainage system assessment and maintenance methods:

Debris is removed from flush lanes, drains and corral drains as needed.
Pumps are monitored daily.
Scrape lanes are cleaned as needed.
Corrals are regraded and fill dirt is added as needed to prevent ponding.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Baker Commodities, Inc.

Rendering company or landfill telephone number: (559) 237-4310

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Semiannually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
Roundup	8	gallons	year	fencelines, ponds, and roadways	triple-rinsed and recycled			
Goal	4	gallons	year	fencelines, ponds, roadways	triple-rinsed and recycled			

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Figure 2

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Figure 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: none

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Figure 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Figure 3

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Figure 2

E. FLOOD PROTECTION / INUNDATION REPORT

Provide a published flood zone map that shows the facility is outside the relevant flood zones.

Flood zone map and/or document reference number: 06019C2100H

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: Backflow form

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

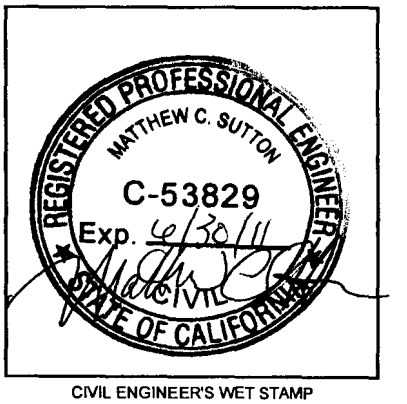
Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☒ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)



CIVIL ENGINEER'S WET STAMP

SIGNATURE OF CIVIL ENGINEER — DATE: 6/21/10

Matt Sutton
PRINT OR TYPE NAME

3451-C Vincent RD; Pleasant Hill, CA 94523
MAILING ADDRESS

(925) 944-2856
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6-25-10	6-28-10
DATE	DATE



LEGEND

☐ Facility Boundary

SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:

0 4000 8000

APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

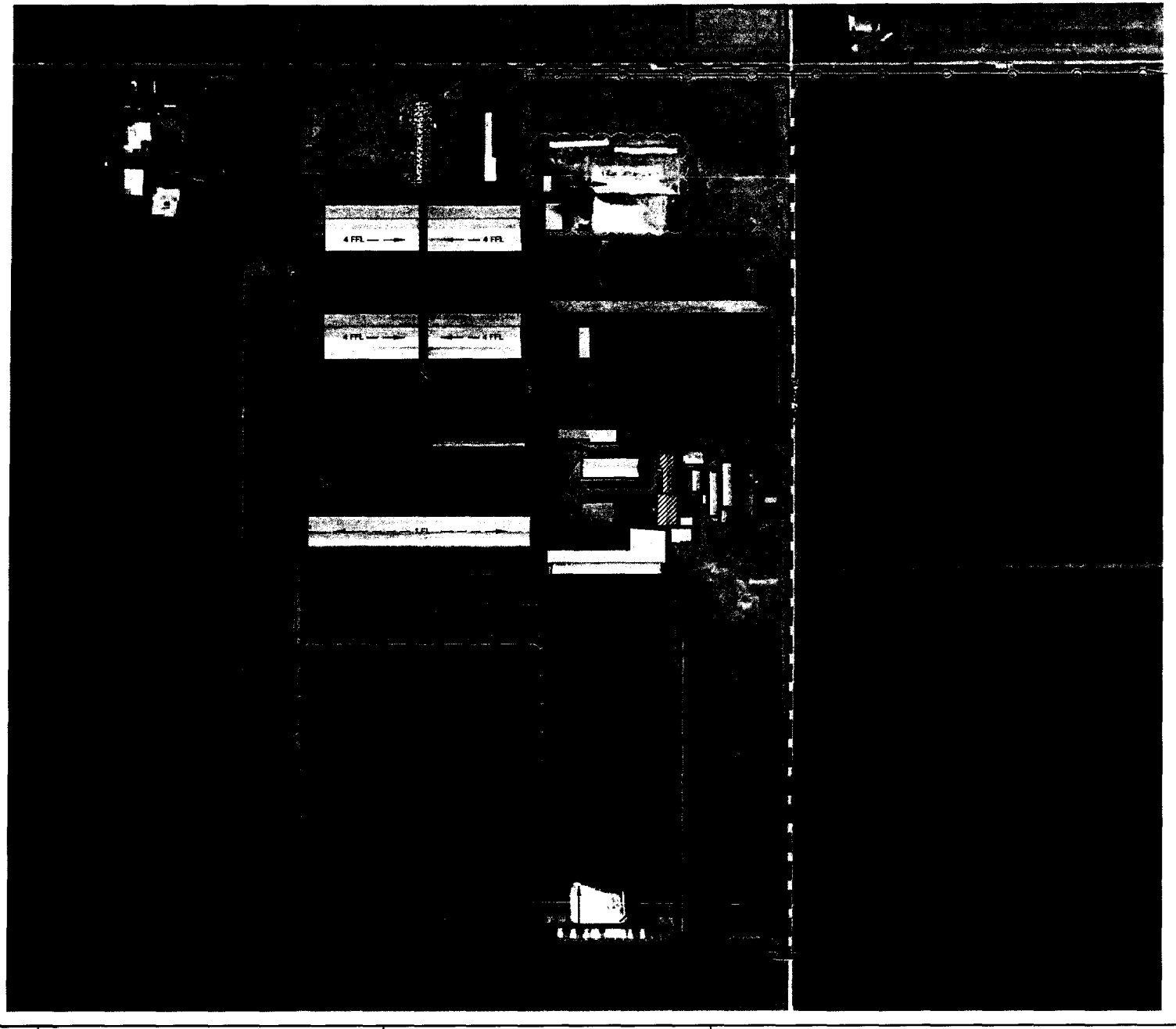
FIGURE 1
TOPOGRAPHIC MAP

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Milk Barn
- Old Milk Barn
- Animal Housing/Shade
- Waste Water Storage
- Corral
- Shop
- Solids Settling Basin
- Commodity/Hay Barn
- Separator Area
- Soild Stacking Area
- Scraped Lane
- Mechanical Separator
- Feed Storage
- Drain
- Pump Point
- Irrigation Well
- Domestic Well
- Stormwater Flow
- Wastewater Pipeline
- Facility Boundary



THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 400 600
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

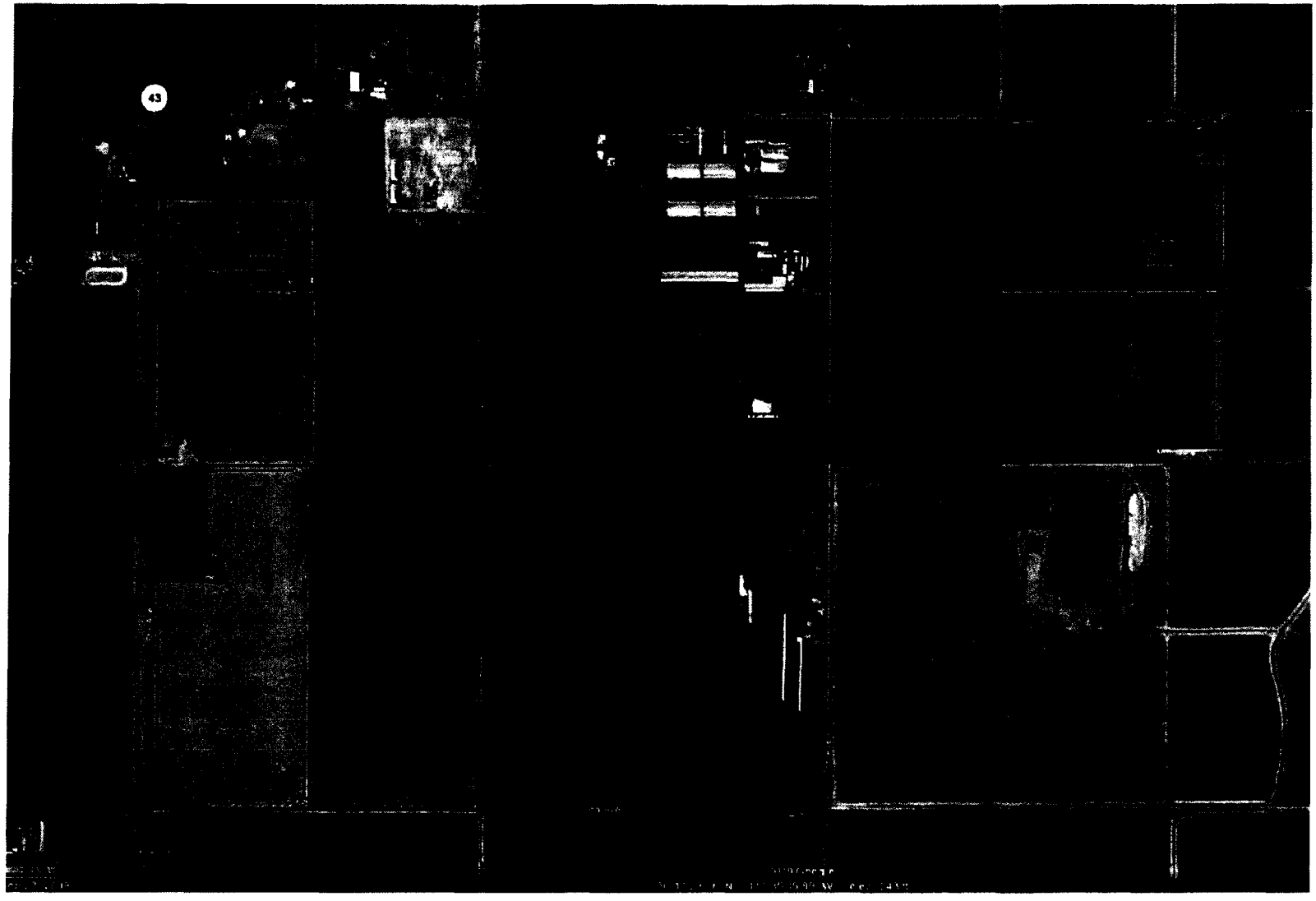
FIGURE 2
DAIRY FACILITY

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Fields
- Tail Water Pond
- Domestic Well
- Irrigation Well
- Stand Pipe
- Tail Water
- Irrigation Pipeline
- Tail Water Pipeline
- Irrigation Flow
- B — Berms
- C — Canal
- SM Solid Manure
- WW Wastewater



SGI environmental THE SOURCE GROUP, INC. 3451-C VINCENT ROAD PLEASANT HILL, CA 94523	SCALE: 0 1200 2400 APPROXIMATE SCALE IN FEET	VACA VIEW DAIRY TULARE COUNTY, CA		**FIGURE 3** DAIRY FIELDS
	PROJECT NO. 011-WDR-002 - TASK 300	DATE: 6/27/10	DRAWN BY: SB	APP. BY: TP

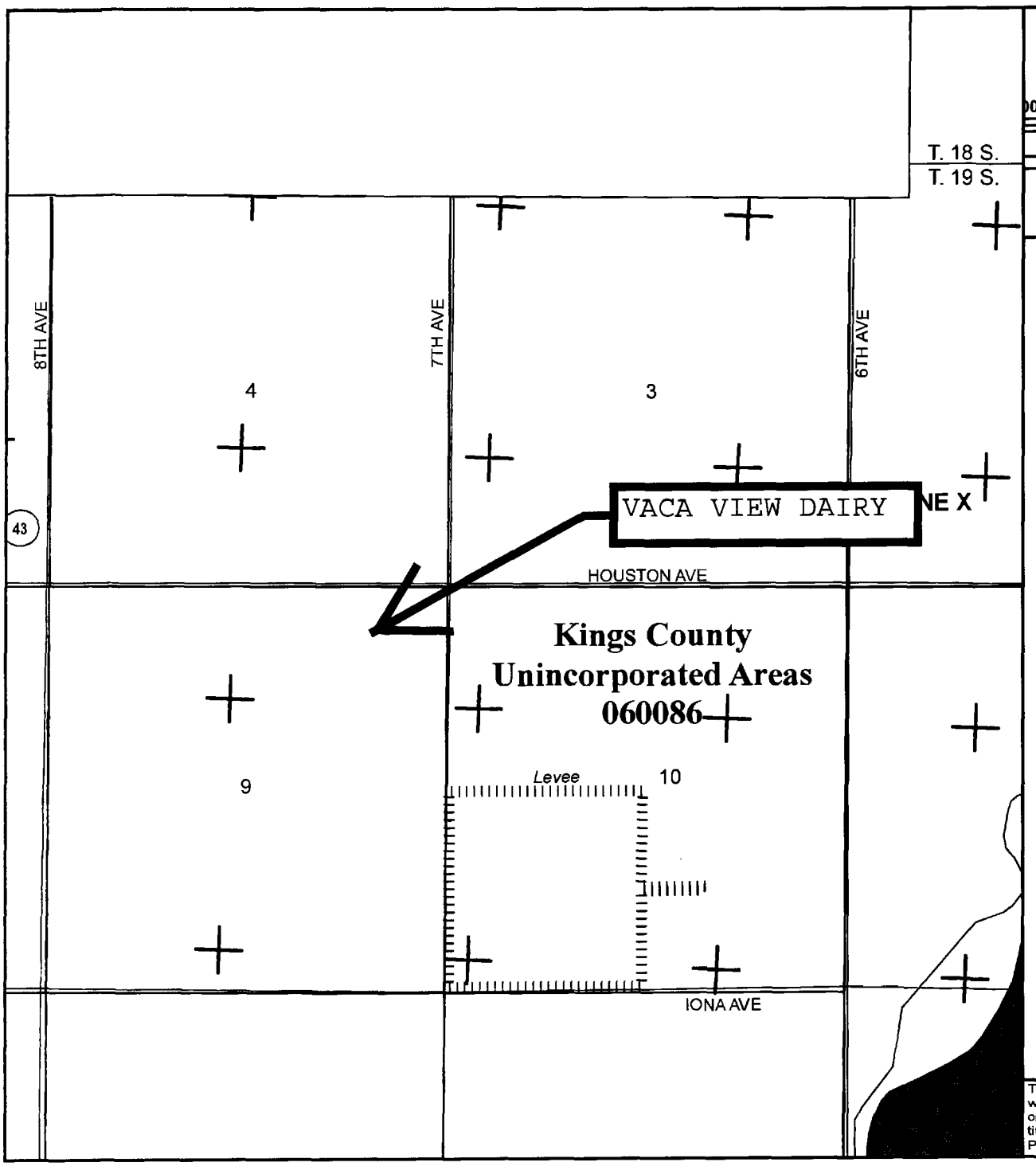
300-WDR

SGI Ag Services THE SOURCE GROUP, INC.

LAND APPLICATION AREA FIELD INFORMATION ATTACHMENT

DAIRY NAME: Vaca View Dairy
DAIRY ADDRESS: 7205 Houston Ave, Hanford, CA 93230

APN	FIELD ID	ACRES	CROPS GROWN	OPERATED BY DAIRY OWNER	LEASED BY DAIRY OPERATOR	LEASED BY OTHER	NUTRIENTS APPLIED
0016-0200-0028-0000	1	20	corn/wheat	X			wastewater/solid manure
0016-0200-0035-0000	2	58	alfalfa	X			wastewater/solid manure
0016-0200-0035-0000	3	10	corn/wheat	X			wastewater/solid manure
0016-0200-0011-0000	4	80	strevia			X	wastewater/solid manure
0016-0200-0019-0000	5	38	tomato			X	wastewater/solid manure
0016-0200-0011-0000	6	58	tomato			X	wastewater/solid manure
0016-0200-0019-0000	7	37	tomato			X	wastewater/solid manure
0016-0200-0033-0000	8	19	tomato			X	wastewater/solid manure
0016-0200-0041-0000	9	47	corn/wheat	X			wastewater/solid manure
0016-0200-0041-0000	10	49	corn/wheat	X			wastewater/solid manure



MAP SCALE 1" = 2000'

0 2000 4000 FEET

0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0225C

FIRM

FLOOD INSURANCE RATE MAP

KINGS COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 225 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HANFORD, CITY OF	060088	0225	C
KINGS COUNTY	060086	0225	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06031C0225C

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

This form consists of six parts and can be used to document compliance with the requirements in Waste Discharge Requirements General Order No. R5-2007-0035 for owners/operators of existing milk cow dairies (Dischargers) to:

1. Identify cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map;

2. Propose and schedule corrective action to prevent backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map; and/or

3. Document there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map.

The Discharger must complete this form except for Parts IV and V, which are to be completed by a trained professional[1]. Both the owner and the operator of the dairy must sign the certification statement in Part VI. Additional sheets may be attached as necessary to complete Parts I, II, and III.

A Site Map must be attached to this form that shows all water supply wells, irrigation wells, and surface water bodies in the dairy's Production Area and all Land Application Areas that are under the Discharger's control. The Site Map must also show all wastewater conveyance structures, wastewater discharge points to surface water, and where wastewater is mixed/blended with fresh irrigation water in these areas. Each of these locations must be identified by a name or number and listed in Part II below. Completion of Part II will identify how backflow can or does occur at each location and any current backflow preventive measures.

PART I: DAIRY FACILITY INFORMATION

A. Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical address of Dairy:

7205 Houston Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

B. Operator Name: Joe Mendes Telephone No: 559-582-4906

Operator mailing address:

3790 Lacey Blvd	Hanford	Kings	93230
Number and Street	City	County	Zip Code

C. Owner Name: Robin Martella Telephone No: 559-752-1019

Owner Mailing Address:

12051 8th Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

[1] A trained professional could be a person certified by the American Backflow Prevention Association, an inspector for a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART II: IDENTIFICATION OF EXISTING BACKFLOW CONDITIONS (due by 1 July 2008)
The attached Site Map identifies all of the locations in the Production Area and all Land Application Areas under the control of the Discharger at the dairy identified in Part I above where there are cross-connections that could, or do, allow the backflow of wastewater into a water supply well, irrigation well, or surface water. For each location shown on the map, the table below describes:

a. How and where wastewater can potentially, or does, backflow to a groundwater supply and/or surface water supply (if there are no current or potential backflow problems, indicate so with "none"), and

b. How backflow of process wastewater into the groundwater or surface water supply is currently prevented (if there is no current prevention method, indicate so with "none").

Location Where Backflow can Occur	How Backflow Can or Does Occur	Current Backflow Preventive Measure
Ag 1	Mixing of freshwater and wastewater in pipeline	none
Ag 2	Mixing of freshwater and wastewater in pipeline	none
Ag 3	Mixing of freshwater and wastewater in pipeline	none
Ag 4	Mixing of freshwater and wastewater in pipeline	none

Potential for backflow of wastewater into surface water was not inspected. Self certification form will be completed by producer.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART III: PROPOSED BACKFLOW CORRECTIVE ACTIONS AND SCHEDULE (due by 1 July 2008)

For each location identified in Part II above where there is currently no backflow prevention, the table below identifies:

a. The method proposed to be implemented that will prevent backflow, and

b. A schedule to install the preventive measure.

If there are no current or potential backflow problems identified in Part II above, this Part does not need to be completed.

Location With No Current Backflow Prevention	Proposed Backflow Prevention Method	Schedule to Install Proposed Backflow Prevention Method
Ag 1	air gap	July 2009
Ag 2	air gap	July 2009
Ag 3	air gap	July 2009
Ag 4	air gap	July 2009

PART IV: DOCUMENTATION OF EXISTING BACKFLOW CONDITIONS AND PROPOSED BACKFLOW PREVENTION METHODS (due by 1 July 2008)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named above and my personal examination of the wastewater system, the above information in Part II above is true, accurate, and complete and the proposed backflow prevention method in Part III above will be effective to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE 6/17/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART V: DOCUMENTATION THAT THERE ARE NO CROSS-CONNENCTIONS THAT WOULD ALLOW THE BACKFLOW OF WASTEWATER INTO A WATER SUPPLY WELL, IRRIGATION WELL, OR SURFACE WATER (due by 1 July 2009)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named in Part I above and my personal examination of the wastewater system, that the backflow prevention methods proposed in Part III above (if any) have been completed, and/or there are currently no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

Kristy Rocha Cordeiro — 6/28/10

SIGNATURE OF TRAINED PROFESSIONAL — DATE

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

PART VI: OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6-23-10	6-28-10
DATE	DATE

JUL 0 2 2010

WASTE MANAGEMENT PLAN

Vaca View Dairy
7205 Houston Ave
Hanford, CA 93230
011-WDR-300

Prepared For:

Joe Mendes
3790 Lacey Blvd
Hanford, CA 93230

Prepared By:

SGI Ag Services THE SOURCE GROUP, INC.

3213 Liberty Square Parkway
Turlock CA 95382

July 1, 2009

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

DAIRY FACILITY INFORMATION

A. NAME OF DAIRY OR BUSINESS OPERATING THE DAIRY: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address):

TRS Data and Coordinates:

19S	22E	9	Mt. Diablo	36° 17' 53.57" N	119° 35' 11.21" W
Township (T_)	Range (R_)	Section (S_)	Baseline meridian	Latitude (N)	Longitude (W)

Date facility was originally placed in operation: 01/01/1970

Regional Water Quality Control Board Basin Plan designation: Tulare Basin

County Assessor Parcel Number(s) for dairy facility:

0016-0020-0006-0000 0016-0020-0028-0000 0016-0020-0035-0000

B. OPERATOR NAME: Mendes, Joe Telephone no.: (559) 582-4906 (Landline) (Cellular)

3790 Lacey BLVD	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Operator should receive Regional Board correspondence (check): [X] Yes [ ] No

C. LEGAL OWNER NAME: Martella, Robin Telephone no.: (559) 752-1019 (Landline) (Cellular)

12051 8th AVE	Hanford	CA	93230
Mailing Address Number and Street	City	State	Zip Code

Owner should receive Regional Board correspondence (check): [X] Yes [ ] No

D. CONTACT NAME: Sutton, Matt Telephone no.: (925) 944-2856 (Landline) (Cellular)

Title: Professional Engineer

3451-C Vincent RD	Pleasant Hill	CA	94523
Mailing Address Number and Street	City	State	Zip Code

CONTACT NAME: Cordeiro, Kristy Rocha Telephone no.: (209) 669-1800 (Landline) (209) 277-5596 (Cellular)

Title: Technical Service Provider

3213 Liberty Square PKWY	Turlock	CA	95382
Mailing Address Number and Street	City	State	Zip Code

HERD AND MILKING EQUIPMENT

A. HERD AND MILKING

The existing milk cow dairy is currently regulated under the General Order.

Total number of milk and dry cows combined as a baseline value in response to the Report of Waste Discharge (ROWD) request of October, 2005:

1,300 milk and dry cows combined (regulatory review is required for expansions of 15% above baseline values)

1,495 milk and dry cows combined + 15% (pre-expansion limit)

Type of Animal	Present Count	Maximum Count	Daily Flush Hours	Avg Live Weight (lbs)
Milk Cows	1,250	1,300	22	1,400
Dry Cows	195	195	0	1,450
Bred Heifers (15-24 mo.)	80	82	0	900
Heifers (7-14 mo.)	1,000	1,020	0	750
Calves (4-6 mo.)	200	205	0	
Calves (0-3 mo.)	0	0	0	

Predominant milk cow breed: Holstein

Average milk production: 70 pounds per cow per day

Average number of milk cows per string sent to the milkbarn: 125 milk cows per string

Number of milkings per day: 2.0 milkings per day

Number of times milk tank is emptied/filled each day: 4.0 per day

Number of hours spent milking each day: 20.0 hours per day

B. MILKBARN EQUIPMENT AND FLOOR WASH

Bulk tank wash and sanitizing: 3.0 run cycles/wash

Bulk tank wash vat volume: 75 gallons/cycle

Bulk tank wash wastewater: 900.0 gallons/day

Pipeline wash and sanitizing: 3.0 run cycles/wash

Pipeline wash vat volume: 200 gallons/cycle

Pipeline wash wastewater: 1,200.0 gallons/day

Reused / recycled water is the source of parlor floor wash water: [X] Yes [ ] No

Milkbarn / parlor floor wash volume: 7,000 gallons/day

Plate coolers type: Well Water Cooled (Water Reused/Recycled)

Plate coolers volume: 25,000 gallons/day

Vacuum pumps / air compressors / chillers type: Well Water Cooled (Water Reused/Recycled)

Vacuum pumps / air compressors / chillers volume: 15,000 gallons/day

Milkbarn and equipment wastewater volume generated daily: 43,100 gallons/day

C. OTHER WATER USES

Reused/recycled water is the source of herd drinking water: [ ] Yes [X] No

	Milk Cows	Dry Cows	Bred Heifers (15-24 mo.)	Bred Heifers (7-14 mo.)	Calves (4-6 mo.)	Calves (0-3 mo.)
Number of cows drinking from reusable water:	0	0	0	0	0	0
	of 1,250	*of 195*	*of 80*	*of 1,000*	*of 200*	*of 0*
Gallons per head per day:	0	0	0	0	0	0

Total reusable water consumed by herd: 0 gallons/day

Reused/recycled water is the source of sprinkler pen water: [X] Yes [ ] No

Number of sprinklers in the holding pen: 78 sprinklers

Duration of each sprinkler cycle: 2.0 minutes

Number of sprinkler pen runs/milking: 1 cycles/milking

Flow rate for each sprinkler head: 4.0 gallons/minute

Total sprinkler pen wastewater volume: 12,980 gallons/day

Total fresh water used in manure flush lane system(s): 0 gallons/day

D. MISCELLANEOUS EQUIPMENT

Description	Source	Throughput (gallons per day)	Discharge Destination
Drop hoses and misc	Fresh Water	1,000	Sent to pond

E. MILKBARN AND EQUIPMENT SUMMARY

Number of days in storage period: 120 days

Water available for reuse/recycle: 40,000 gallons/day

Recycled water reused: 19,980 gallons/day

Recycled water leaving system: 0 gallons/day

Reusable water balance: 20,020 gallons/day

Volume of milkbarn and equipment wastewater generated for storage period: 5,172,000 gallons/storage period

MANURE AND BEDDING SOLIDS

A. IMPORTED AND FACILITY GENERATED BEDDING

Bedding Type	Imported or Generated (tons)	Density (lbs/cu. ft.)	Applied Separation Efficiency (default)	Solids to Pond (cu. ft./period)
Facility generated bedding	113	40.0	50%	2,813
			Total:	2,813

B. SOLIDS SEPARATION PROCESS

Combined manure solids separation efficiency (weight basis): 20 %

Description of all solids separation equipment used in flushed lane manure management systems:

Separator and processing pit

C. MANURE AND BEDDING SOLIDS SUMMARY

	cubic feet		gallons	
	day	storage period	day	storage period
Manure generated by the herd (pre-separation):	4,179.14	501,496	31,262.11	3,751,453
Manure generated by the herd sent to pond(s):	2,503.64	300,437	18,728.56	2,247,427
Manure generated by the herd sent to dry lot(s):	1,499.20	179,904	11,214.78	1,345,774
Manure solids (herd) removed by separation:	85.34	10,241	638.41	76,609
Liquid component in separated solids not send to pond(s):	90.95	10,914	680.35	81,642
Imported and facility generated bedding sent to pond(s):	23.44	2,813	175.32	21,039
Total manure and bedding sent to pond(s):	2,527.08	303,250	18,903.89	2,268,466
Residual manure solids and bedding sent to pond(s) w/factor:	182.40	21,888	1,364.48	163,737
	cubic feet per year		gallons per year	
Residual manure solids and bedding sent to pond(s) w/factor:		66,577		498,034

RAINFALL AND RUNOFF

A. RAINFALL ESTIMATES

Rainfall station nearest the facility: Hanford

25 year/24 hour storm event (default NOAA Atlas 2, 1973): 2.10 inches/storage period

25 year/24 hour storm event (user-override): _____ inches/storage period

Storage period rainfall (default DWR climate data): 5.88 inches/storage period

Storage period rainfall (user-override): _____ inches/storage period

Flood zone: Zone X

B. IMPERVIOUS AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24hr Storm Runoff Coefficient	Storage Period Runoff Coefficient	Runoff Destination
apron	920	4	0.97	0.50	Drains into pond(s).
apron	510	2	0.97	0.50	Drains into pond(s).
apron	350	1	0.97	0.50	Drains into pond(s).
cistern pad	384	1	0.97	0.50	yard
corral pad	5,180	1	0.97	0.50	Drains into pond(s).
drain	70	1	0.97	0.50	Drains into pond(s).
drain	20	1	0.97	0.50	Drains into pond(s).

drivelane	290	1	0.97	0.50	Drains into pond(s).
drivelane	520	1	0.97	0.50	Drains into pond(s).
exposed concrete	360	1	0.97	0.50	Drains into pond(s).
exposed concrete	1,300	1	0.97	0.50	Drains into pond(s).
exposed feedlane	416	1	0.97	0.50	Drains into pond(s).
extra lane	1,215	1	0.97	0.50	Drains into pond(s).
feed area	60,982	1	0.97	0.50	Drains into pond(s).
feedlane	6,960	1	0.97	0.50	Drains into pond(s).
feedlane	40,400	1	0.97	0.50	Drains into pond(s).
feedlane	4,290	1	0.97	0.50	Drains into pond(s).
feedlane	1,640	1	0.97	0.50	Drains into pond(s).
feedlane	17,986	1	0.97	0.50	Drains into pond(s).
feedlane	18,170	1	0.97	0.50	Drains into pond(s).
flush apron	144	1	0.97	0.50	Drains into pond(s).
lane	900	1	0.97	0.50	Drains into pond(s).
main transfer	8,040	1	0.97	0.50	Drains into pond(s).
milkbarn area	4,700	1	0.97	0.50	Drains into pond(s).
milkbarn pad	646	1	0.97	0.50	Drains into pond(s).
milktruck pad	1,260	1	0.97	0.50	Drains into pond(s).
old lane	1,425	1	0.97	0.50	Drains into pond(s).
pad	1,190	1	0.97	0.50	yard
parking	1,488	1	0.97	0.50	Drains into pond(s).
reminant concrete	2,678	1	0.97	0.50	Drains into pond(s).
road	396	1	0.97	0.50	Drains into pond(s).
separator area	30,210	1	0.99	0.99	Drains into pond(s).
separator pad	300	1	0.97	0.50	Drains into pond(s).
silage pad	14,500	1	0.97	0.50	Drains into pond(s).
transfer lane	2,920	1	0.97	0.50	Drains into pond(s).
transfer lane	3,168	1	0.97	0.50	Drains into pond(s).
transfer lane	4,800	1	0.97	0.50	Drains into pond(s).
transfer lane	1,300	1	0.97	0.50	Drains into pond(s).
transfer lane	3,900	1	0.97	0.50	Drains into pond(s).
transfer lane	624	1	0.97	0.50	Drains into pond(s).
transfer lane	2,448	1	0.97	0.50	Drains into pond(s).
transfer lane	360	1	0.97	0.50	Drains into pond(s).
transfer lane exposed	200	1	0.97	0.50	Drains into pond(s).

washpen	1,360	1	0.97	0.50	Drains into pond(s).

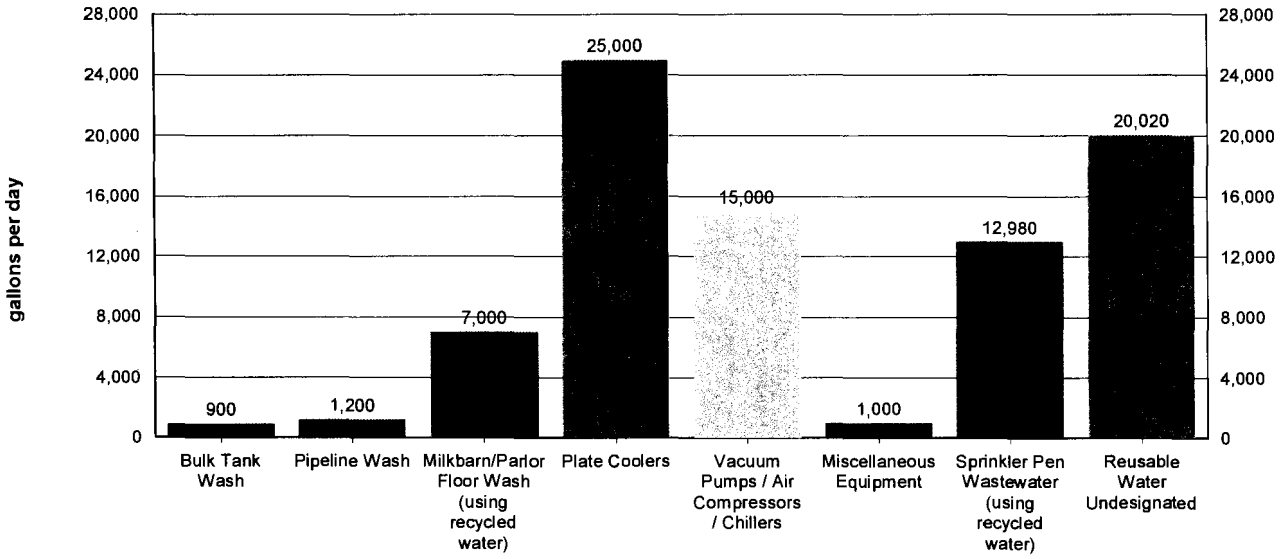
Surface area that does not run off into pond(s):	1,574 sq. ft.
Surface area that runs off into pond(s):	252,616 sq. ft.
Total surface area:	254,190 sq. ft.
Runoff from normal storage period rainfall:	517,236 gallons/storage period
Runoff from normal storage period rainfall with 1.5 factor:	775,853 gallons/storage period
25 year/24 hour storm event runoff:	321,567 gallons/storage period
Total surface area runoff:	838,803 gallons/storage period
Total surface area runoff with 1.5 factor:	1,097,421 gallons/storage period

C. ROOF AREAS

Name	Surface Area (sq. ft.)	Quantity	Runoff Destination
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	Wastewater pond
1/2 old milkhouse	648	1	yard
commodity barn	1,170	1	yard
commodity barn	3,848	1	yard
fsb's	32,500	4	Wastewater pond
haybarn	7,950	1	yard
milkbarn	7,728	1	Wastewater pond
milkhouse	2,860	1	yard
old equipment shade	72	1	yard
old milkbarn	1,792	1	Wastewater pond
old shade	1,170	1	Wastewater pond
old shade	1,260	1	Wastewater pond
old shade	1,320	1	yard
old shade	2,640	1	yard
old shade	360	1	yard
old shade	3,120	1	yard
old shade	660	1	yard
old washpen	4,536	1	Wastewater pond
shade	1,280	1	Wastewater pond
shade	1,344	1	Wastewater pond
shade	2,310	1	yard
shade	2,499	1	yard
shade	2,560	1	yard

CHARTS

A. MILKBARN WASTEWATER SENT TO POND(S)

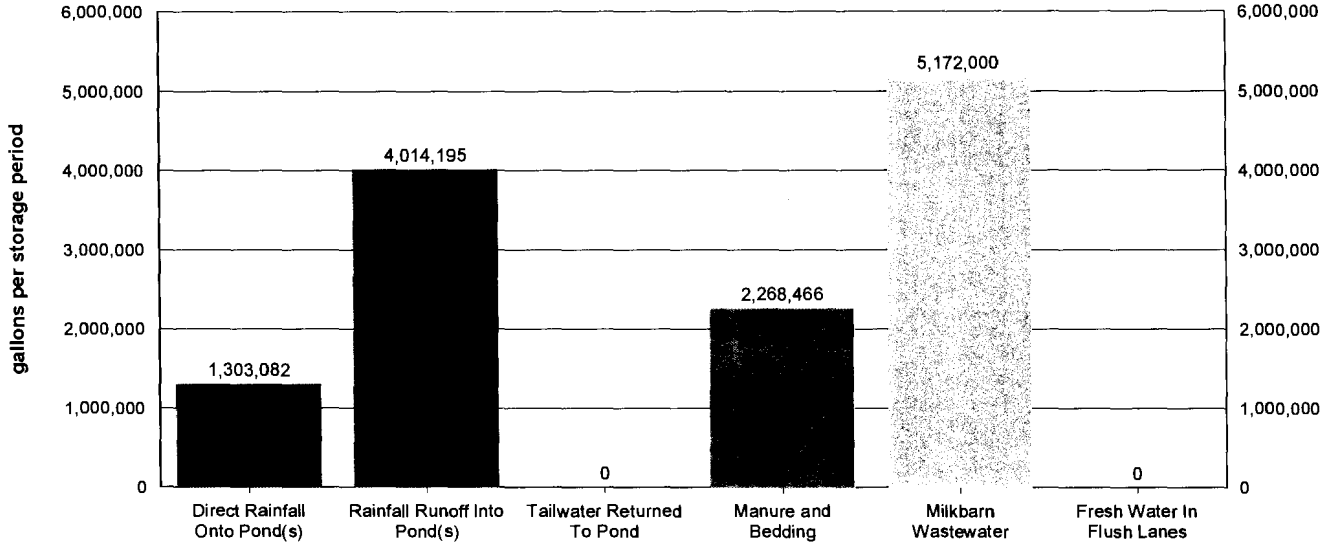


Values shown in chart are approximate values per day.

Total milkbarn wastewater generated daily: 43,100 gallons/day

Total milkbarn wastewater generated per period: 5,172,000 gallons/storage period

B. PROCESS WASTEWATER (NORMAL PRECIPITATION)

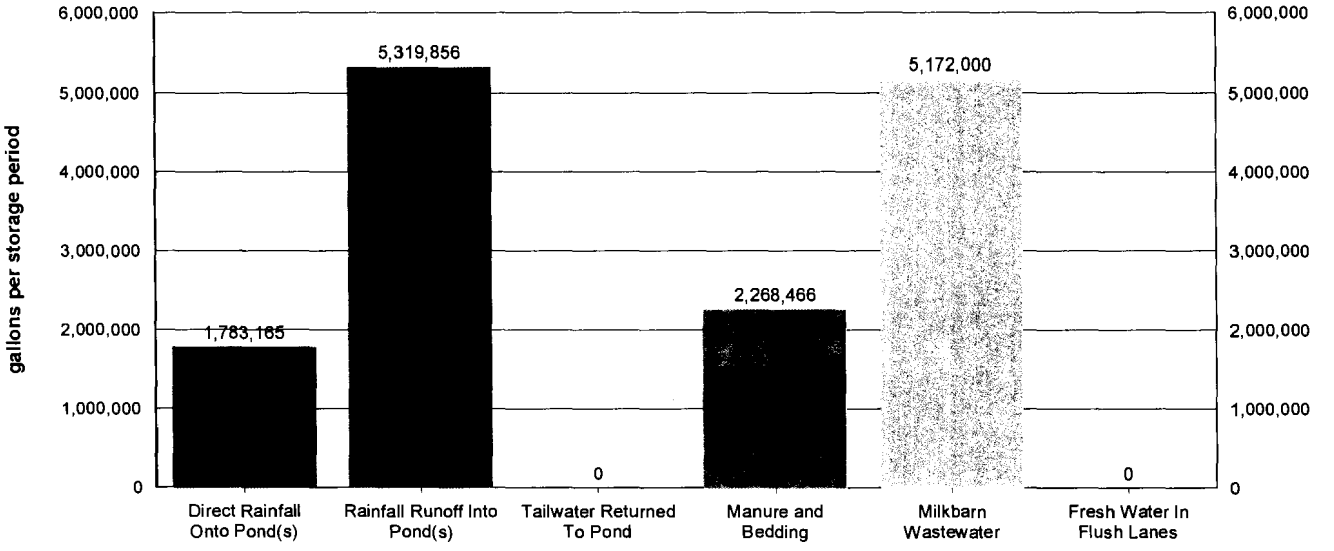


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	106,315	gallons/day
Total process wastewater generated per period:	12,757,743	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	11,091,152	gallons
	1,482,671	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering normal precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

C. PROCESS WASTEWATER (NORMAL PRECIPITATION WITH 1.5 FACTOR)

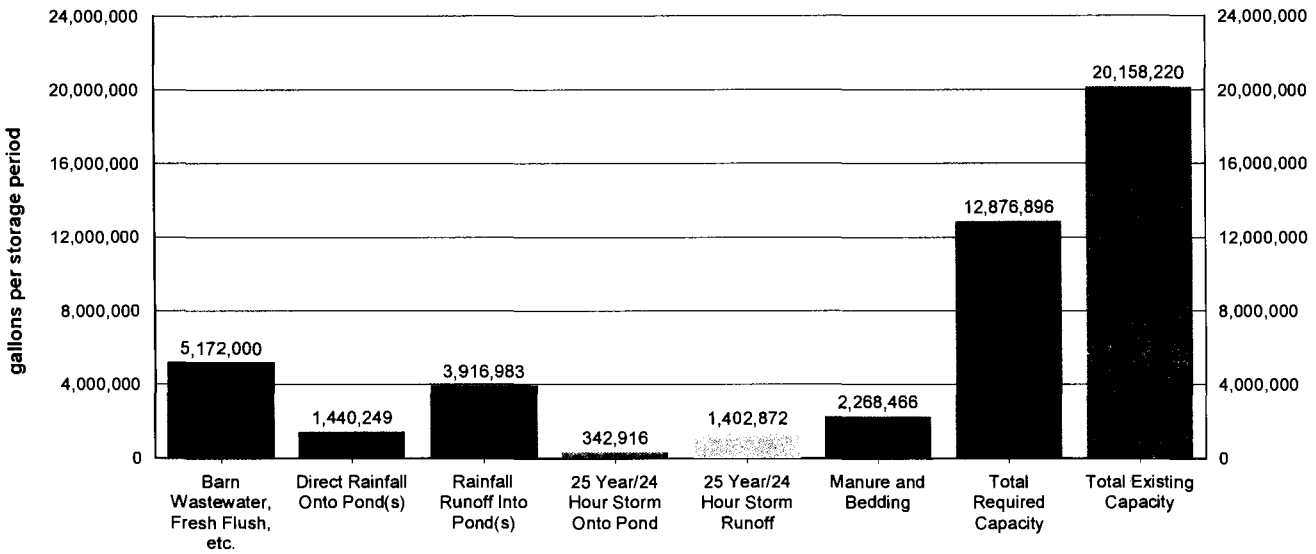


Values shown in chart are approximate values for storage period.

Storage period:	120	days
Total process wastewater generated daily:	121,196	gallons/day
Total process wastewater generated per period:	14,543,487	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total storage capacity required:	12,876,896	gallons
	1,721,391	cu. ft.
Existing storage capacity (adjusted for dead storage loss):	20,158,220	gallons
	2,694,762	cu. ft.

Considering factored precipitation, existing capacity meets estimated storage needs: [X] Yes [ ] No

D. STORAGE VOLUME ASSESSMENT (NORMAL PRECIPITATION WITH 1.5 FACTOR)



Values shown in chart are approximate values for storage period.

Storage period:	120	days
Barn wastewater, fresh flush water, and tailwater:	5,172,000	gallons/storage period
Manure and bedding sent to pond:	2,268,466	gallons/storage period
Precipitation onto pond:	1,440,249	gallons/storage period
Precipitation runoff:	3,916,983	gallons/storage period
25 year/24 hour storm onto pond:	342,916	gallons/storage period
25 year/24 hour storm runoff:	1,402,872	gallons/storage period
Residual solids after liquids have been removed (liquid equivalent):	163,737	gallons/storage period
Total process wastewater removed due to evaporation:	1,666,591	gallons/storage period
Total required capacity:	12,876,896	gallons/storage period
Total existing capacity:	20,158,220	gallons/storage period
Existing capacity meets estimated storage needs:	[X] Yes [ ] No	

OPERATION AND MAINTENANCE PLAN

The goal of the Operation and Maintenance Plan is to eliminate discharges of waste or storm water to surface waters from the production area and the protection of underlying soils and ground water.

A. POND MAINTENANCE

i. FREEBOARD MONITORING

1. Freeboard will be monitored monthly from June 1 through September 1 (dry season) and weekly from October 1 through May 31 (wet season). The results will be recorded on a Dairy Production Area Visual Inspection Form.
2. Freeboard will be monitored during and after each significant storm event and the results recorded on a Production Area Significant Storm Event Inspection Form.
3. Ponds will be photographed on the first day of each month. Pond photos will be labeled and maintained with the dairy 's monitoring records.

ii. PREPARATION FOR MAINTAINING WINTER STORAGE CAPACITY

1. The retention pond(s) will begin to be lowered to the minimum operating level on or before a designated date each year.
2. The minimum operating level will include the necessary storage volume as identified in Section II .A in Attachment B of the General Order.

iii. OTHER POND MONITORING

1. At the time of each monitoring for freeboard, the pond(s) will be inspected for evidence of excessive odors, mosquito breeding, algae, or equipment damage; and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Other Pond Monitoring.
2. At the time of each monitoring during and after each significant storm event, the ponds will be inspected for evidence of any discharge and issues with berm integrity, including cracking, slumping, erosion, excess vegetation, animal burrows, and seepage. Any issues identified and corrective actions performed will be recorded on a Production Area Significant Storm Event Inspection Form.

iv. SOLIDS REMOVAL PROCEDURES

1. The average thickness of the solids accumulated on the bottom of the pond(s) will be measured on the designated interval using the owner, operator, and/or designer specified procedure.
2. Once solids/sludge on the bottom of the pond(s) reach the owner, operator, and/or designer specified critical thickness, solids/sludge will be removed so that adequate capacity is maintained.
3. When necessary, solids/sludge will be removed using the owner, operator, and/or designer specified methods for protecting any pond liner.

OPERATIONS AND MAINTENANCE PLAN FOR POND: SSB

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 0 feet above the pond invert beginning in May of each year.

Sludge accumulation will be measured monthly.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 2.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are removed using a loader.

OPERATIONS AND MAINTENANCE PLAN FOR POND: WWS

Dry season freeboard monitoring will occur on the 5th of each month.

Wet season freeboard monitoring will occur every Monday of each week.

Process wastewater pond contents will be lowered to the minimum operating level (elevation) of 2 feet above the pond invert beginning in April of each year.

Sludge accumulation will be measured annually.

The following method will be used to measure solids/sludge accumulation:

Storages are visually monitored or professionally measured to evaluate solid accumulation.

When solids/sludge accumulate to a thickness of 6.0 feet, the following method will be used to maintain adequate storage capacity while protecting any pond liner:

Solids are pumped out during irrigations.
Solids are pumped into slurry trucks.

B. RAINFALL COLLECTION SYSTEM MAINTENANCE

i. Annually, rainfall collection systems will be assessed to ensure:

1. Conveyances are free of debris and operating within designer/manufacturer specifications.
2. Components are properly fastened according to designer/manufacturer specifications.
3. All downspouts and related infrastructure are connected to conveyances that divert water away from manured areas.
4. Water from the rainfall collection system(s) is diverted to an appropriate destination.

Buildings with rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
1/2 old milkhouse	1	648
commodity barn	1	3,848
fsb's	4	130,000
milkbarn	1	7,728
old milkbarn	1	1,792
old shade	1	1,170
old shade	1	1,260
old shade	1	360
old shade	1	3,120
old shade	1	660
old washpen	1	4,536
shade	1	1,280
shade	1	1,344

shade	1	2,310
shade	1	2,499
shade	1	2,560
shade	1	3,276
shade	1	2,400
shade	1	52,976
shade	1	8,700
shade	1	12,800
shade	1	6,200
shade	1	4,840
shop	1	630
Buildings without rooftop rainfall collection systems	Quantity	Surface Area (sq. ft.)
1/2 old milkhouse	1	648
commodity barn	1	1,170
haybarn	1	7,950
milkhouse	1	2,860
old equipment shade	1	72
old shade	1	1,320
old shade	1	2,640
shop	1	1,900
shop attachment	1	216

Assessment for buildings with rooftop rainfall collection systems will occur on or before: 5th of October

Assessment for other rainfall collections systems will occur on or before: 5th of November

Description of how rainfall collection systems will be assessed:

Gutters and downspouts will be cleaned and repaired as needed.
Roofwater that comes in contact with manured areas will be collected and conveyed to the wastewater system.

C. CORRAL MAINTENANCE

i. Monthly from June 1st through September 30th (dry season) and weekly from October 1st through May 31st (wet season), the perimeter of the corrals and pens will be assessed to ensure that runon and runoff controls such as berms are functioning correctly, and that all water that contacts waste is collected and diverted into the wastewater retention pond (s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Corrals.

ii. The corrals will be assessed by the designated date to determine:

1. Whether manure needs to be removed from the corrals based on the owner, operator, and/or designer specified conditions.

2. Whether there are depressions within the corrals that should be filled/groomed to prevent ponding.

iii. Removal of manure and/or regrading, when necessary, will be completed on or before the designated month/day of each year.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Solid manure removal and regrading assessment will occur on or before: 5th of October

Conditions requiring manure removal and/or regrading:

Solid manure is removed twice a year, in the Spring and Fall, usually after harvest.

Solid manure removal and/or regrading will occur on or before: 5th of November

D. FEED STORAGE AREA MAINTENANCE

i. During the dry season and prior to the wet season, the perimeter of storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, feed storage area(s) will be assessed to determine if there are depressions within any feed storage area that should be filled or repaired to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the week wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

E. SOLID MANURE STORAGE AREA MAINTENANCE

COPY

SGI Ag Services THE SOURCE GROUP, INC.

FACILITY ASSESSMENT

DAIRY FACILITY INFORMATION:

Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical Address of Dairy: 7205 Houston Ave, Hanford, CA 93230

Operator Name: Joe Mendes

Operator Mailing Address: 3790 Lacey Blvd, Hanford, CA 93230

Operator Telephone No.: 559-582-4906

Owner Name: Robin Martella

Owner Mailing Address: 12051 8th Ave, Hanford, CA 93230

Owner Telephone No.: 559-752-1019

Production Area Design & Construction:

Corral and/or Pens:
Are corrals and/or pens designed and constructed to collect and divert all process wastewater to the retention pond?

- ☐ Yes, with no exceptions
- ☒ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Front Corral by milkbarn	Collect & convey drain to WWS	July 2011
Back Heifer Corrals by road	Improve Conveyance	July 2011

Animal Housing Area:

Are all animal housing areas (barn, shed, milk parlor, etc.) designed and constructed to divert all water that has contacted animal wastes to the retention pond?

- ☒ Yes, with no exceptions
- ☐ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:

Manure and Feed Storage Areas:

Are all manure and/or feed storage areas designed and constructed to collect and divert runoff and leachate from these areas to the retention pond?

- ☐ Yes, with no exceptions
- ☒ Yes, with minor exceptions, as stated below along with proposed corrective actions
- ☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Feed Areas	Improve Conveyance to WWS	July 2011

OWNER AND/OR OPERATOR CERTIFICATION:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am

aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I also certify that any and all modifications or improvements needed and stated above will be implemented by July 1, 2011 in order to meet the criteria mandated under Schedule of Tasks J.1 of waste Discharge Requirements General Order No. R5-2007-0035.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
PRINT OR TYPE NAME	PRINT OR TYPE NAME

i. During the dry season and prior to the wet season, the perimeter of manure storage areas will be assessed to ensure all runon and runoff controls such as berms are functioning correctly and runoff and leachate from the areas are collected and diverted into the wastewater pond(s). Any issues identified and corrective actions performed will be recorded on a Dairy Production Area Visual Inspection Form - Manure and Feed Storage Areas.

ii. During the wet season, manure storage area(s) will be assessed to determine if there are depressions within any manure storage area that should be filled to prevent ponding.

iii. Any necessary regrading/resurfacing and berm/conveyance maintenance will be completed on an annual basis.

Day of the month dry season assessment will occur: 5th of each month

Day of the month wet season assessment will occur: Monday

Regrading/resurfacing and berm maintenance assessment will occur on or before: 5th of October

Regrading/resurfacing and berm maintenance completion will occur on or before: 5th of November

F. ANIMAL HOUSING AND FLUSH WATER CONVEYANCE SYSTEM MAINTENANCE

i. A map will be attached that identifies critical points for monitoring the animal housing and flush water conveyance system to verify that water is being managed as identified in this Waste Management Plan. These points will be maintained at owner, operator, and/or designer specified intervals.

Animal housing area assessment will occur on or before: 5th of October

Animal housing drainage system maintenance will occur on or before: 5th of November

Animal housing area drainage system assessment and maintenance methods:

Debris is removed from flush lanes, drains and corral drains as needed.
Pumps are monitored daily.
Scrape lanes are cleaned as needed.
Corrals are regraded and fill dirt is added as needed to prevent ponding.

G. MORTALITY MANAGEMENT

i. Dead animals will be stored, removed, and disposed of properly.

Rendering company or landfill name: Baker Commodities, Inc.

Rendering company or landfill telephone number: (559) 237-4310

H. ANIMALS AND SURFACE WATER MANAGEMENT

i. A system will be in place, monitored, and maintained to prevent animals from entering any surface waters when a stream or other surface water crosses or adjoins the corral(s).

Does a stream or any other surface water cross or adjoin the corrals? [ ] Yes [X] No

I. MONITORING SALT IN ANIMAL RATIONS

i. The combined quantity of minerals as salt in animal drinking water and feed rations will be reviewed by a qualified nutritionist on a routine basis to verify that minerals are limited to the amount required to maintain animal health and optimum production. As feed rations change, mineral content may change.

Assessment interval: Semiannually

J. CHEMICAL MANAGEMENT

i. Chemicals and other contaminants handled at the facility will not be disposed of in any manure or process wastewater, storm water storage or treatment system unless specifically designed to treat such chemicals and other contaminants.

Chemical Name	Quantity	Units	Frequency	Usage Area	Destination (Used Chemical / Container)	Disposal Company		Collection Frequency
						Name	Phone	
Roundup	8	gallons	year	fencelines, ponds, and roadways	triple-rinsed and recycled			
Goal	4	gallons	year	fencelines, ponds, roadways	triple-rinsed and recycled			

REQUIRED ATTACHMENTS

The following list, based upon user selections and data entries, describes the minimum required attachments that must be submitted with the Waste Management Plan for the reporting schedule of 'July 1, 2010'.

A. SITE MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: structures used for animal housing, milk parlor, and other buildings; corrals and ponds; solids separation facilities (settling basins or mechanical separators); other areas where animal wastes are deposited or stored; feed storage areas; drainage flow directions and nearby surface waters; all water supply wells (domestic, irrigation, and barn wells) and groundwater monitoring wells.

Production area map reference number: Figure 2

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: a field identification system (Assessor's Parcel Number; field by name or number; total acreage of each field; crops grown; indication if each field is owned, leased, or used pursuant to a formal agreement); indication of what type of waste is applied (solid manure only, wastewater only, or both solid manure and wastewater); drainage flow direction in each field, nearby surface waters, and storm water discharge points; tailwater and storm water drainage controls; subsurface (tile) drainage systems (including discharge points and lateral extent); irrigation supply wells and groundwater monitoring wells; sampling locations for discharges of storm water and tailwater to surface water from the field.

Application area map reference number: Figure 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all cropland (land that is part of the dairy but not used for dairy waste application) including the following in sufficient detail: Assessor's Parcel Number, total acreage, crops grown, and information on who owns or leases the field. The Waste Management Plan shall indicate if such cropland is covered under the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Order No. R5-2006-0053 for Coalition Group or Order No. R5-2006-0054 for Individual Discharger, or updates thereto).

Non-application area map reference number: none

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of all off-property domestic wells within 600 feet of the production area or land application area(s) associated with the dairy and the location of all municipal supply wells within 1,500 feet of the production area or land application area(s) associated with the dairy.

Well area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and a vicinity map, north arrow and the date the map was prepared. The map shall be drawn on a published base map (e.g., a topographic map or aerial photo) using an appropriate scale that shows sufficient details of all facilities.

Vicinity map reference number: Figure 1

B. PROCESS WASTEWATER MAP(S)

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of the production area including the following in sufficient detail: process wastewater conveyance structures, discharge points, and discharge /mixing points with irrigation water supplies; pumping facilities and flow meter locations; upstream diversion structures, drainage ditches and canals, culverts, drainage controls (berms/levees, etc.), and drainage easements; and any additional components of the waste handling and storage system.

Production infrastructure system area map reference number: Figures 2 and 3

Provide a site map (or maps) of appropriate scale to show property boundaries and the location of the features of all land application areas (land under the Discharger's control, whether it is owned, rented, or leased, to which manure or process wastewater from the production area is or may be applied for nutrient recycling) including the following in sufficient detail: process wastewater conveyance structures, discharge points and discharge mixing points with irrigation water supplies; pumping facilities ; flow meter locations; drainage ditches and canals, culverts, drainage controls (berms, levees, etc.), and drainage easements.

Land application infrastructure system area map reference number: Figure 3

C. EXCESS PRECIPITATION CONTINGENCY REPORT

There were no attachment references entered or required for this attachment section.

D. OPERATION AND MAINTENANCE PLAN

Attach a map that identifies critical points for monitoring the system to verify that water is being managed as identified in this Waste Management Plan (see Attachment B, Pg B-7 V.F, V.G, and V.H for additional requirements).

Animal housing assessment map reference number: Figure 2

E. FLOOD PROTECTION / INUNDATION REPORT

Provide a published flood zone map that shows the facility is outside the relevant flood zones.

Flood zone map and/or document reference number: 06019C2100H

F. BACKFLOW PROTECTION

Attach documentation from a trained professional (i.e. a person certified by the American Backflow Prevention Association, an inspector from a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training), as specified in Required Reports and Notices H.1 of Waste Discharge Requirements General Order No. R5-2007-0035, that there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the Site Map.

Backflow documentation reference number: Backflow form

SGI Ag Services THE SOURCE GROUP, INC.

FACILITY ASSESSMENT

DAIRY FACILITY INFORMATION:

Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical Address of Dairy: 7205 Houston Ave, Hanford, CA 93230

Operator Name: Joe Mendes

Operator Mailing Address: 3790 Lacey Blvd, Hanford, CA 93230

Operator Telephone No.: 559-582-4906

Owner Name: Robin Martella

Owner Mailing Address: 12051 8th Ave, Hanford, CA 93230

Owner Telephone No.: 559-752-1019

Production Area Design & Construction:

Corral and/or Pens:
Are corrals and/or pens designed and constructed to collect and divert all process wastewater to the retention pond?

☐ Yes, with no exceptions

☐ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Front Corral by milkbarn	Collect & Convey drain to WWS	July 2011
Back Heifer Corrals by road	Improve Conveyance to WWS	July 2011

Animal Housing Area:

Are all animal housing areas (barn, shed, milk parlor, etc.) designed and constructed to divert all water that has contacted animal wastes to the retention pond?

☒ Yes, with no exceptions

☐ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:

Manure and Feed Storage Areas:

Are all manure and/or feed storage areas designed and constructed to collect and divert runoff and leachate from these areas to the retention pond?

☐ Yes, with no exceptions

☒ Yes, with minor exceptions, as stated below along with proposed corrective actions

☐ No, as stated below along with proposed corrective actions

Proposed modification or improvements needed:

Location:	Proposed Modification:	Completed by:
Feed Areas	Improve conveyance to WWS	July 2011

OWNER AND/OR OPERATOR CERTIFICATION:

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am

aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

I also certify that any and all modifications or improvements needed and stated above will be implemented by July 1, 2011 in order to meet the criteria mandated under Schedule of Tasks J.1 of waste Discharge Requirements General Order No. R5-2007-0035.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME

Waste Management Plan Report
General Order No. R5-2007-0035, Attachment B
July 1, 2010 deadline

CERTIFICATION

A. DAIRY FACILITY INFORMATION

Name of dairy or business operating the dairy: Vaca View Dairy

Physical address of dairy:

7205 Houston AVE	Hanford	Kings	93230
Number and Street	City	County	Zip Code

Street and nearest cross street (if no address): _____

B. DOCUMENTATION OF QUALIFICATIONS AND PLAN DEVELOPMENT

I have reviewed the portion of the waste management plan that is related to storage capacity facility and design specifications in accordance with Item II, Attachment B of the Waste Discharge Requirements General Order for Existing Milk Cow Dairies - Order No. R5-2007-0035 and certify that this plan was prepared by, or under the responsible charge of, and certified by a civil engineer who is registered pursuant to California law or other person as may be permitted under the provisions of the California Business and Professions Code to assume responsible charge of such work.

Storage capacity is:

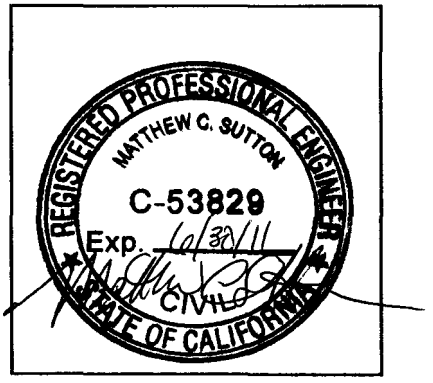
Insufficient

☐ Retrofitting Plan/Schedule/Design Criteria attached in accordance with Attachment B, II.B. 1-5 and Attachment B, II. C.

Sufficient

☒ Certification 1 - Certified in accordance with Attachment B, II. A. 1-8. (no contingency plan)

☐ Certification 2 - Certified in accordance with Attachment B, II. A. 1-8, II. C. (with contingency plan attached)



CIVIL ENGINEER'S WET STAMP

Matthew C Sutton — 6/21/10

SIGNATURE OF CIVIL ENGINEER — DATE

Matt Sutton
PRINT OR TYPE NAME

3451-C Vincent RD; Pleasant Hill, CA 94523
MAILING ADDRESS

(925) 944-2856
PHONE NUMBER

C. OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6/23/10	6-28-10
DATE	DATE



LEGEND

☐ Facility Boundary

SGI environmental — THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 4000 8000
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

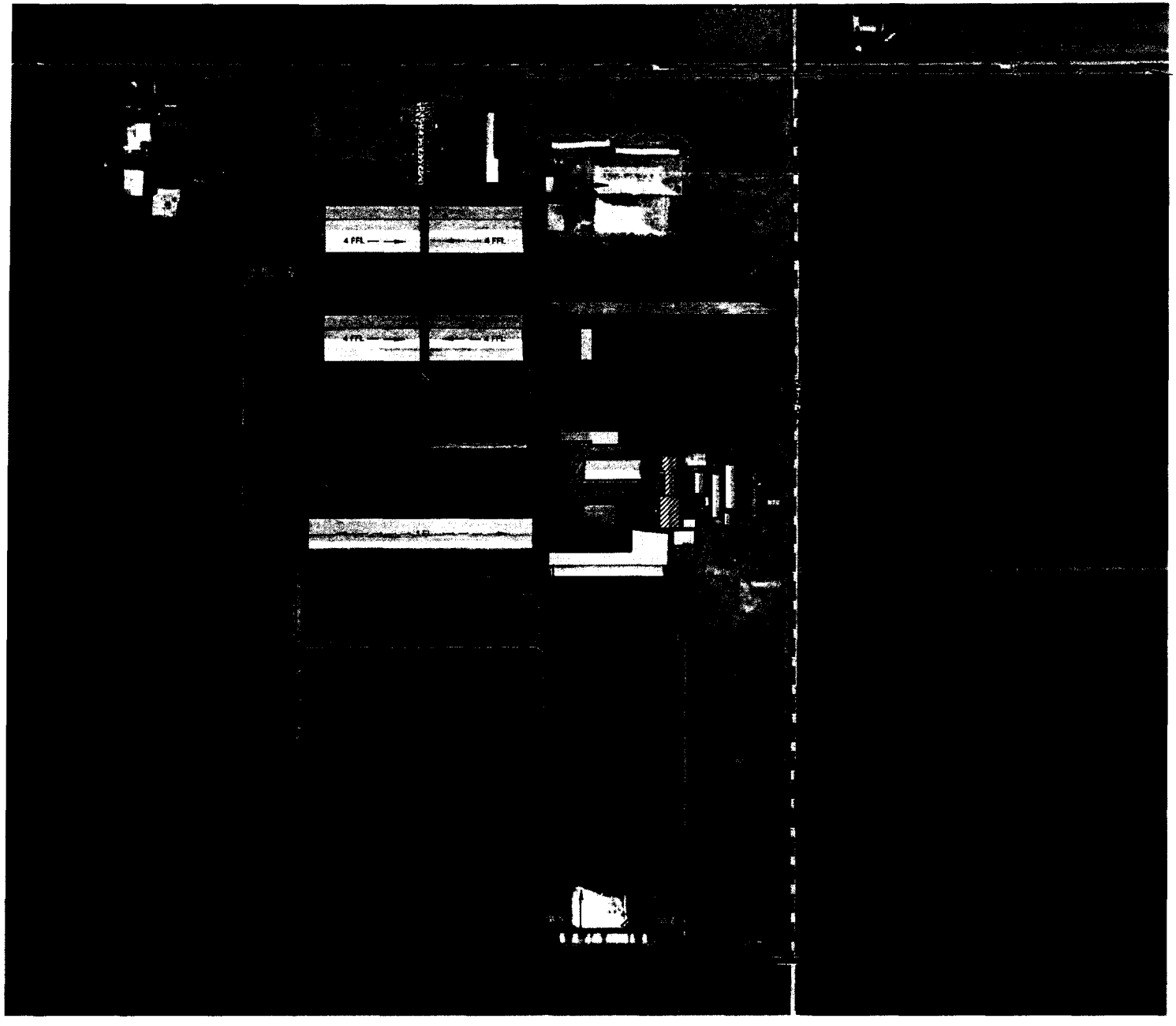
PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

FIGURE 1
TOPOGRAPHIC MAP

300-WDR

LEGEND

- Milk Barn
- Old Milk Barn
- Animal Housing/Shade
- Waste Water Storage
- Corral
- Shop
- Solids Settling Basin
- Commodity/Hay Barn
- Separator Area
- Solid Stacking Area
- Scraped Lane
- Mechanical Separator
- Feed Storage
- Drain
- Pump Point
- Irrigation Well
- Domestic Well
- Stormwater Flow
- Wastewater Pipeline
- Facility Boundary



SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 400 600
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

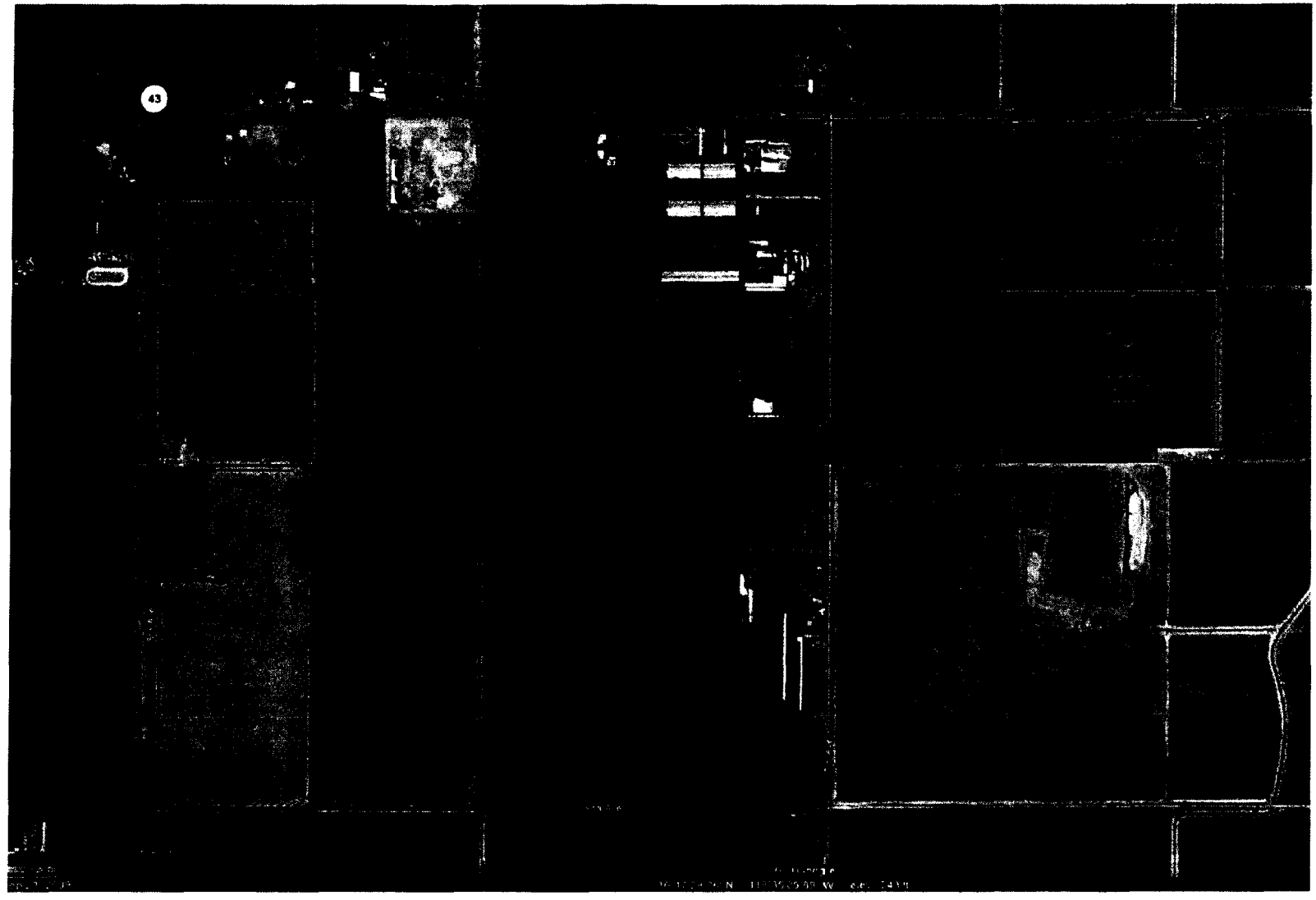
FIGURE 2
DAIRY FACILITY

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/21/10	SB	TP

300-WDR

LEGEND

- Fields
- Tail Water Pond
- Domestic Well
- Irrigation Well
- Stand Pipe
- Tail Water
- Irrigation Pipeline
- Tail Water Pipeline
- Irrigation Flow
- B — Berms
- C — Canal
- SM Solid Manure
- WW Wastewater



SGI environmental THE SOURCE GROUP, INC.
3451-C VINCENT ROAD
PLEASANT HILL, CA 94523

SCALE:
0 1200 2400
APPROXIMATE SCALE IN FEET

VACA VIEW DAIRY
TULARE COUNTY, CA

FIGURE 3
DAIRY FIELDS

PROJECT NO.	DATE:	DRAWN BY:	APP. BY:
011-WDR-002 - TASK 300	6/27/10	SB	TP

300-WDR

shade	3,276	1	yard
shade	2,400	1	corral
shade	52,976	1	Wastewater pond
shade	8,700	1	Wastewater pond
shade	12,800	1	Wastewater pond
shade	6,200	1	Wastewater pond
shade	4,840	1	yard
shop	630	1	Wastewater pond
shop	1,900	1	yard
shop attachment	216	1	yard

Surface area that does not run off into pond(s): 44,649 sq. ft.

Surface area that runs off into pond(s): 231,712 sq. ft.

Total surface area: 276,361 sq. ft.

Runoff from normal storage period rainfall: 849,330 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,273,995 gallons/storage period

25 year/24 hour storm event runoff: 303,332 gallons/storage period

Total surface area runoff: 1,152,662 gallons/storage period

Total surface area runoff with 1.5 factor: 1,577,327 gallons/storage period

D. EARTHEN AREAS

Name	Surface Area (sq. ft.)	Quantity	25yr/24 Storm Coefficient	Storage Period Coefficient	Runoff Destination
dairy facility	1,697,957	1	0.35	0.20	Drains into pond(s).

Surface area that does not run off into pond(s): 0 sq. ft.

Surface area that runs off into pond(s): 1,697,957 sq. ft.

Total surface area: 1,697,957 sq. ft.

Runoff from normal storage period rainfall: 1,244,757 gallons/storage period

Runoff from normal storage period rainfall with 1.5 factor: 1,867,135 gallons/storage period

25 year/24 hour storm event runoff: 777,973 gallons/storage period

Total surface area runoff: 2,022,730 gallons/storage period

Total surface area runoff with 1.5 factor: 2,645,108 gallons/storage period

E. TAILWATER MANAGEMENT

No fields with tailwater entered.

LIQUID STORAGE

A. POND OR BASIN DESCRIPTION: SSB

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	630 ft.	Earthen Depth (ED):	7 ft.
Earthen Width (EW):	168 ft.	Side Slope (S):	1.4 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	0.0 ft.
Calculations			
Liquid Length (LL):	627 ft.	Storage Volume Adjusted for Dead Storage Loss:	582,308 cu. ft.
Liquid Width (LW):	165 ft.		
Pond Surface Area:	105,840 sq. ft.	Pond Marker Elevation:	5.1 ft.
Storage Volume:	582,308 cu. ft.	Evaporation Volume:	667,762 gals/period
		Adjusted Surface Area:	102,605 sq. ft.

POND OR BASIN DESCRIPTION: WWS

Pond is rectangular in shape: [X] Yes [ ] No

Dimensions			
Earthen Length (EL):	1,165 ft.	Earthen Depth (ED):	18 ft.
Earthen Width (EW):	134 ft.	Side Slope (S):	0.7 ft. (h:1v)
Free Board (FB):	1 ft.	Dead Storage Loss (DS):	2.0 ft.
Calculations			
Liquid Length (LL):	1,164 ft.	Storage Volume Adjusted for Dead Storage Loss:	2,112,454 cu. ft.
Liquid Width (LW):	133 ft.		
Pond Surface Area:	156,110 sq. ft.	Pond Marker Elevation:	16.1 ft.
Storage Volume:	2,363,976 cu. ft.	Evaporation Volume:	998,829 gals/period
		Adjusted Surface Area:	153,476 sq. ft.

Potential storage losses (due to dead storage):	251,522.0 cubic feet - or -	1,881,515.2 gallons
Liquid storage surface area:	257,907 sq. ft.	
Rainfall onto retention pond(s):	960,166 gallons/storage period	
Rainfall runoff into retention pond(s):	2,611,322 gallons/storage period	
Normal rainfall onto retention pond(s) with 1.5 factor:	1,440,249 gallons/storage period	
Normal rainfall runoff into retention pond(s) with 1.5 factor:	3,916,983 gallons/storage period	
Storage period evaporation (default):	13.92 inches/storage period	
Storage period evaporation (user-override):	inches/storage period	

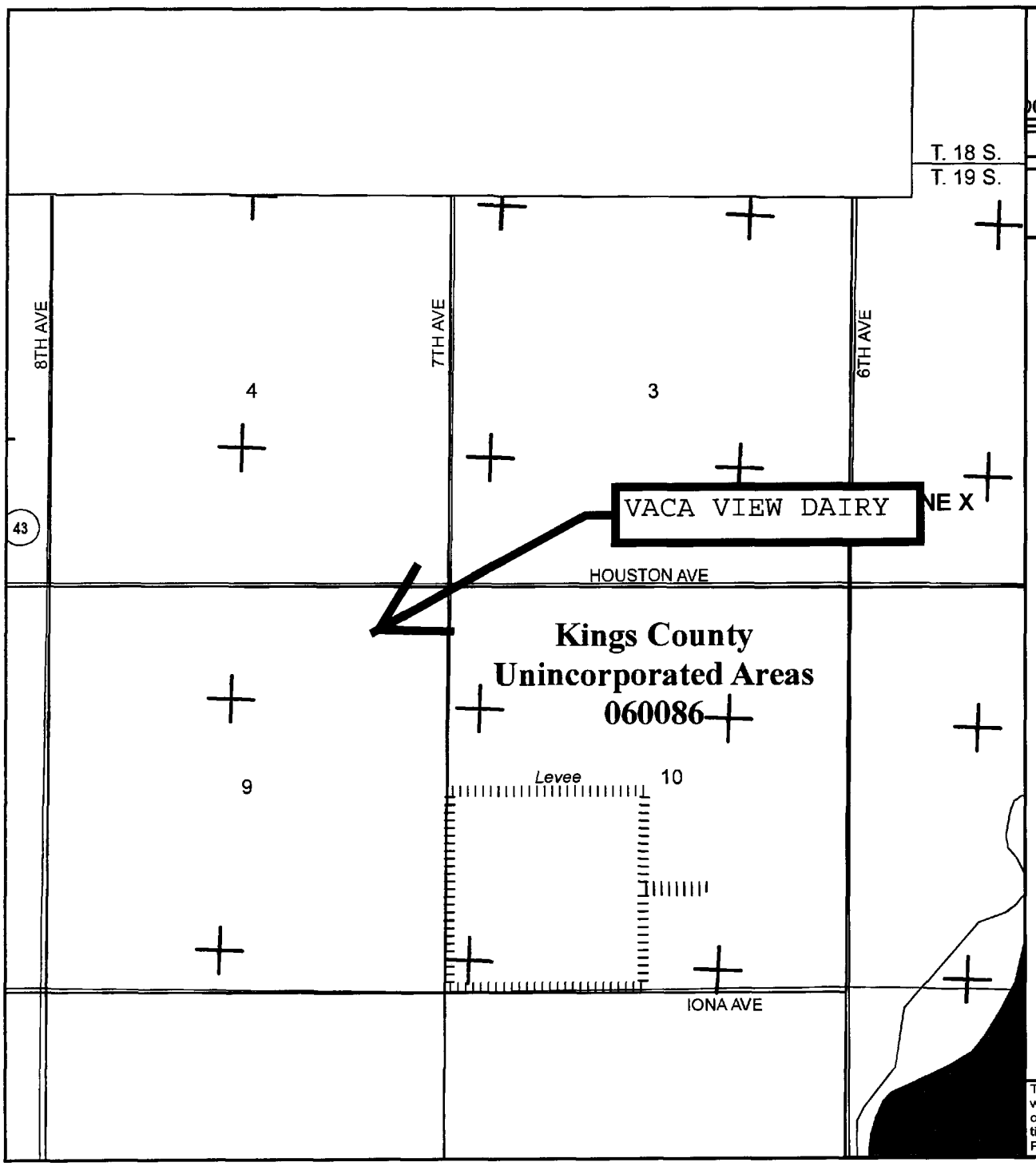
Storage period evaporation volume:	1,666,591	gallons/storage period
Manure and bedding sent to pond(s):	2,268,466	gallons/storage period
Milkbarn water sent to pond(s):	5,172,000	gallons/storage period
Fresh flush water for storage period:	0	gallons/storage period

SGI Ag Services **THE SOURCE GROUP, INC.**

LAND APPLICATION AREA FIELD INFORMATION ATTACHMENT

DAIRY NAME: Vaca View Dairy
DAIRY ADDRESS: 7205 Houston Ave, Hanford, CA 93230

APN	FIELD ID	ACRES	CROPS GROWN	OPERATED BY DAIRY OWNER	LEASED BY DAIRY OPERATOR	LEASED BY OTHER	NUTRIENTS APPLIED
0016-0200-0028-0000	1	20	corn/wheat	X			wastewater/solid manure
0016-0200-0035-0000	2	58	alfalfa	X			wastewater/solid manure
0016-0200-0035-0000	3	10	corn/wheat	X			wastewater/solid manure
0016-0200-0011-0000	4	80	strevia			X	wastewater/solid manure
0016-0200-0019-0000	5	38	tomato			X	wastewater/solid manure
0016-0200-0011-0000	6	58	tomato			X	wastewater/solid manure
0016-0200-0019-0000	7	37	tomato			X	wastewater/solid manure
0016-0200-0033-0000	8	19	tomato			X	wastewater/solid manure
0016-0200-0041-0000	9	47	corn/wheat	X			wastewater/solid manure
0016-0200-0041-0000	10	49	corn/wheat	X			wastewater/solid manure



MAP SCALE 1" = 2000'

0 2000 4000 FEET

0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0225C

FIRM

FLOOD INSURANCE RATE MAP

KINGS COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 225 OF 875

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
HANFORD, CITY OF	060088	0225	C
KINGS COUNTY	060086	0225	C

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06031C0225C

EFFECTIVE DATE
JUNE 16, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

This form consists of six parts and can be used to document compliance with the requirements in Waste Discharge Requirements General Order No. R5-2007-0035 for owners/operators of existing milk cow dairies (Dischargers) to:

1. Identify cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map;

2. Propose and schedule corrective action to prevent backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map; and/or

3. Document there are no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water as identified on the dairy's Site Map.

The Discharger must complete this form except for Parts IV and V, which are to be completed by a trained professional[1]. Both the owner and the operator of the dairy must sign the certification statement in Part VI. Additional sheets may be attached as necessary to complete Parts I, II, and III.

A Site Map must be attached to this form that shows all water supply wells, irrigation wells, and surface water bodies in the dairy's Production Area and all Land Application Areas that are under the Discharger's control. The Site Map must also show all wastewater conveyance structures, wastewater discharge points to surface water, and where wastewater is mixed/blended with fresh irrigation water in these areas. Each of these locations must be identified by a name or number and listed in Part II below. Completion of Part II will identify how backflow can or does occur at each location and any current backflow preventive measures.

PART I: DAIRY FACILITY INFORMATION

A. Name of Dairy or Business Operating the Dairy: Vaca View Dairy

Physical address of Dairy:

7205 Houston Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

B. Operator Name: Joe Mendes Telephone No: 559-582-4906

Operator mailing address:

3790 Lacey Blvd	Hanford	Kings	93230
Number and Street	City	County	Zip Code

C. Owner Name: Robin Martella Telephone No: 559-752-1019

Owner Mailing Address:

12051 8th Ave	Hanford	Kings	93230
Number and Street	City	County	Zip Code

[1] A trained professional could be a person certified by the American Backflow Prevention Association, an inspector for a state or local governmental agency who has experience and/or training in backflow prevention, or a consultant with such experience and/or training.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART II: IDENTIFICATION OF EXISTING BACKFLOW CONDITIONS (due by 1 July 2008)
The attached Site Map identifies all of the locations in the Production Area and all Land Application Areas under the control of the Discharger at the dairy identified in Part I above where there are cross-connections that could, or do, allow the backflow of wastewater into a water supply well, irrigation well, or surface water. For each location shown on the map, the table below describes:

a. How and where wastewater can potentially, or does, backflow to a groundwater supply and/or surface water supply (if there are no current or potential backflow problems, indicate so with "none"), and

b. How backflow of process wastewater into the groundwater or surface water supply is currently prevented (if there is no current prevention method, indicate so with "none").

Location Where Backflow can Occur	How Backflow Can or Does Occur	Current Backflow Preventive Measure
Ag 1	Mixing of freshwater and wastewater in pipeline	none
Ag 2	Mixing of freshwater and wastewater in pipeline	none
Ag 3	Mixing of freshwater and wastewater in pipeline	none
Ag 4	Mixing of freshwater and wastewater in pipeline	none

Potential for backflow of wastewater into surface water was not inspected. Self certification form will be completed by producer.

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART III: PROPOSED BACKFLOW CORRECTIVE ACTIONS AND SCHEDULE (due by 1 July 2008)

For each location identified in Part II above where there is currently no backflow prevention, the table below identifies:

a. The method proposed to be implemented that will prevent backflow, and

b. A schedule to install the preventive measure.

If there are no current or potential backflow problems identified in Part II above, this Part does not need to be completed.

Location With No Current Backflow Prevention	Proposed Backflow Prevention Method	Schedule to Install Proposed Backflow Prevention Method
Ag 1	air gap	July 2009
Ag 2	air gap	July 2009
Ag 3	air gap	July 2009
Ag 4	air gap	July 2009

PART IV: DOCUMENTATION OF EXISTING BACKFLOW CONDITIONS AND PROPOSED BACKFLOW PREVENTION METHODS (due by 1 July 2008)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named above and my personal examination of the wastewater system, the above information in Part II above is true, accurate, and complete and the proposed backflow prevention method in Part III above will be effective to prevent the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE 6/17/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

FORM FOR DOCUMENTING BACKFLOW PREVENTION
UNDER
WASTE DISCHARGE REQUIREMENTS GENERAL ORDER NO. R5-2007-0035
FOR
EXISTING MILK COW DAIRIES

PART V: DOCUMENTATION THAT THERE ARE NO CROSS-CONNENCTIONS THAT WOULD ALLOW THE BACKFLOW OF WASTEWATER INTO A WATER SUPPLY WELL, IRRIGATION WELL, OR SURFACE WATER (due by 1 July 2009)

As a trained professional in backflow prevention, I certify that, based on the information provided to me by the Discharger named in Part I above and my personal examination of the wastewater system, that the backflow prevention methods proposed in Part III above (if any) have been completed, and/or there are currently no cross-connections that would allow the backflow of wastewater into a water supply well, irrigation well, or surface water at the dairy named in Part I above.

CDQAP Backflow Training Course

QUALIFICATIONS OF TRAINED PROFESSIONAL (EDUCATION AND/OR EXPERIENCE)

SIGNATURE OF TRAINED PROFESSIONAL — DATE: 6/28/10

Kristy Rocha Cordeiro

PRINT OR TYPE NAME

PART VI: OWNER AND/OR OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE OF OWNER	SIGNATURE OF OPERATOR
Robin Martella	Joe Mendes
PRINT OR TYPE NAME	PRINT OR TYPE NAME
6/23/10	6-28-10
DATE	DATE

Appendix I: Geotechnical Engineering Investigation Report

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
PROPOSED IMPROVEMENTS – SOZINHO NO. 5 DAIRY
12252 7TH AVENUE
HANFORD, CALIFORNIA 93230

BSK PROJECT G24000678

PREPARED FOR:

4-CREEKS, INC.
324 S. SANTA FE STREET, SUITE A
VISALIA, CALIFORNIA 93292

FEBRUARY 10, 2025

GEOTECHNICAL ENGINEERING INVESTIGATION REPORT
PROPOSED IMPROVEMENTS – SOZINHO NO. 5 DAIRY
12252 7TH AVENUE
HANFORD, CALIFORNIA 93230

Prepared for:

4-Creeks, Inc.
324 S. Santa Fe Street, Suite A
Visalia, California 93292

BSK Project: G24000678

February 10, 2025

Prepared by:

Adrian Sizemore, EIT
Staff Professional II



Neva M. Popenoe, PE, GE
Fresno Branch Manager

BSK Associates
691 N Laverne Avenue, Suite 101
Fresno, California 93727
(559) 497-2880
www.bskassociates.com

Distribution: Madison Caesar, 4-Creeks, Inc. (madisonc@4-creeks.com)

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Figure 1: Site Vicinity Map
Figure 2: Boring Location Map

Appendices

Appendix A: Field Exploration
Appendix B: Laboratory Testing

1 INTRODUCTION

1.1 General

This report presents the results of our geotechnical engineering investigation for the proposed facility improvements to be constructed at Sozinho No. 5 Dairy in Hanford, California as shown on the Site Vicinity Map, Figure 1. The geotechnical engineering investigation was conducted in general accordance with the scope of services outlined in BSK Proposal G24000678, dated April 5, 2024. The proposed improvements and exploratory borings and tests are shown on Figure 2, Boring Location Map.

In the event that significant changes occur in the design or location of the proposed improvements, the conclusions and recommendations presented in this report will not be considered valid unless the changes are reviewed by BSK, and the conclusions and recommendations are modified or verified in writing as necessary.

1.2 Project Description

BSK understands that the project consists of the completion of a geotechnical analysis for the proposed facility improvements at Sozinho No. 5 Dairy, located at 12252 7th Avenue, in Hanford, California. The proposed system consists of the combination of two (2) existing lagoons into one (1) lagoon with two (2) constructed earthen berms in an existing lagoon, two (2) mechanical separators, one (1) reception tank and concrete pad, one (1) reception pit, five (5) wastewater processing beds with a total area of (1,112 feet by 336 feet), one (1) product storage area, three (3) compost processing areas, two (2) feed storage areas, nine (9) rows of calf hutches, eleven (11) corral shade structures, one (1) open lot corral, one (1) maternity barn, and one (1) freestall barn. The proposed improvements are located over the existing dairy facility and row crops. Improvements are anticipated to allow the facility to further treat wastewater generated by facility operations.

Other improvements are anticipated to include underground utilities and other miscellaneous structures supported on mat footings. Maximum loading on structures is anticipated to be less than 1,000 psf.

If the project description differs significantly from that anticipated above, we should be notified so that we can review our scope of work for applicability.

1.3 Purpose and Scope of Services

The purpose of the geotechnical investigation is to assess soil conditions at the project site and provide geotechnical engineering recommendations for use by the project designers. The scope of the investigation included a field exploration, laboratory testing, engineering analysis, and preparation of this report.

2 FIELD INVESTIGATION AND LABORATORY TESTING

2.1 General

The field exploration, conducted on May 31, 2024, consisted of a site reconnaissance and drilling three (3) exploratory test borings. The borings were drilled to depths of approximately 21.5 feet below ground surface (bgs) within the proposed improvement locations. The test borings were drilled with a truck-mounted drill rig, equipped with 8-inch augers. The approximate boring locations are presented on Figure 2. Details of the field exploration and the boring logs are provided in Appendix A.

2.2 Laboratory Testing

Laboratory testing of selected soil samples were performed to evaluate certain physical, chemical, and engineering characteristics and properties. The testing program included: in-situ moisture and density, gradation, direct shear, collapse potential, and corrosion potential. The in-situ moisture and dry density test results are presented on the boring logs in Appendix A. Descriptions of the laboratory test methods, and test results are provided in Appendix B.

3 SITE CONDITIONS

3.1 Site Description

The proposed improvements will be situated within the Sozinho No. 5 Dairy facility, which generally contains agricultural fields, access roads, lagoons, and other dairy improvements including shade structures. The existing corrals contain manure at the surface and miscellaneous improvements such as fences and feed troughs. The area containing the proposed BIDA beds included an agricultural field and was bound to the north by the existing Sozinho No. 5 Dairy facility with Houston Avenue and agricultural fields beyond, to the east by the existing Sozinho No. 5 Dairy facility with 7th Avenue and agricultural fields beyond, to south and west by unpaved access roads with agricultural fields beyond. The depths of the existing lagoons were not provided. The site also contained pumps and other dairy infrastructure.

3.2 Subsurface Conditions

The near surface soil consisted of silty sand and clayey sand underlain by layers of silty sand, clay with varying sand content, and poorly graded sand with silt to the maximum depth explored (21.5 feet bgs). The boring logs in Appendix A provide a more detailed description of the soils encountered in each boring, including the applicable Unified Soil Classification System symbols. The approximate locations of the soil borings are shown on the Boring Location Map (Figure 2).

3.3 Groundwater

Groundwater was not encountered at the completion of our field exploration, March 20, 2024. The California Department of Water Resources indicates the depth to regional groundwater at the project site

is greater than 50 feet bgs. However, fluctuations in the groundwater level or the presence of perched groundwater may occur due to variations in rainfall, irrigation, seasonal factors, pumping from wells, and other factors that were not evident at the time of our investigation.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 General

Based upon the data collected during this investigation and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed improvements, provided the recommendations presented in this report are incorporated into the project design and construction. The planned improvements may be supported on shallow isolated/continuous reinforced concrete spread footings, thickened mat foundations, and/or pole footings provided the structural engineer evaluate if the structure can tolerate the estimated settlement shown in Section 4.6.

4.2 Soil Corrosivity

One (1) surface soil sample obtained from the site was tested to provide a preliminary screening of the potential for concrete deterioration or steel corrosion due to attack by soil-borne soluble salts. The test results are presented in Appendix B. The soil was evaluated for minimum resistivity and pH (CT 643), soluble sulfate (CT 417), and chlorides (CT 422).

The water-soluble sulfate is considered Exposure Category S0 per Table 19.3.1.1 of ACI 318-19. The water-soluble chloride content severity class depends on the ability to protect the soils from moisture. The chloride content with moisture would be considered Exposure Category C0 per Table 19.3.1.1 of ACI 318-19. Type I/Type II cement is recommended for use in the formulation of concrete. Other recommendations for concrete by exposure type should reference Table 19.3.2.1 in ACI 318-19.

The site soils minimum resistivity is high and is considered potentially mildly corrosive to buried metal. Buried reinforcing steel protection be provided with the minimum concrete cover required by the American Concrete Institute (ACI) Building Code for Structural Concrete, ACI 318, Chapter 7.7 and 20.5.1. Buried metal conduits, ferrous metal pipes, and exposed steel must have protective coatings in accordance with the manufacturer's specifications. Based on the anticipated groundwater, and exposure category, there are no restrictions for cement type and maximum water-cement ratio. If detailed recommendations for corrosion protection are desired, a corrosion specialist should be consulted.

4.3 Seismic Design Criteria

There are no known active fault zones within the vicinity of the project site. In accordance with Section 1613.2.2 of the 2022 California Building Code (CBC) and Table 20.3-1 of ASCE 7-16, the site can be classified as Site Class D (stiff soil profile).

Use of the 2022 California Building Code (CBC) seismic design criteria is considered appropriate and the following parameters are considered applicable for the structural design of foundations.

Table 1: 2022 California Building Code (CBC) Seismic Design Parameters			
Seismic Design Parameter	**2022 CBC Value**		**Reference**
MCE Mapped Spectral Acceleration (g)	S_S = 0.705	S_1 = 0.259	USGS Mapped Value
Amplification Factors (Site Class D)	F_a = 1.236	F_v = null[1](2.082)[2]	ASCE Table 11.4
Site Adjusted MCE Spectral Acceleration (g)	S_{MS} = 0.872	S_{M1} = null[1](0.539)[2]	ASCE Equations 11.4.1-2
Design Spectral Acceleration (g)	S_{DS} = 0.581	S_{D1} = null[1] (0.359)[2]	ASCE Equations 11.4.1-4
Geometric Mean PGA (g)	PGA_M = 0.397		Section 11.8.3, ASCE 7-16
Site Short Period – T_s (seconds)	T_s = 0.619		$T_s = S_{D1}/ S_{DS}$
Site Long Period – T_L (seconds)	T_L = 12		USGS Mapped Value

Notes: [1] Requires site-specific ground motion procedure or exception as per ASCE 7-16 Section 11.4.8.

[2] Values from ASCE 7-16 supplement shall only be used to calculate T_s. Values provided based on use of exception, as provided in Section 11.4.8.2 to Site-Specific Ground Motion Procedures and assumes the value of the seismic response coefficient C_s is determined by Eq. 12.8-2 for values of $T \leq 1.5T_s$ and taken as equal to 1.5 times the value computed in accordance with either Eq. 12.8-3 for $T_L \geq T > 1.5T_s$ or Eq. 12.8-4 for $T > T_L$. The 1.5 increase has not been applied to the values presented.

As shown above, the short period design spectral response acceleration coefficient, S_{DS}, is greater than 0.5, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. The long period design spectral response acceleration coefficient, S_{D1}, is greater than 0.2, therefore the Site lies in Seismic Design Category D as specified in Section 1613.2.5 of the 2022 CBC. In accordance with the 2022 CBC, each structure shall be assigned to the more severe seismic design category in accordance with Table 1613.2.5(1) or 1613.2.5(2), irrespective of the fundamental period of vibration of the structure.

4.4 Slope Stability

Based upon the provided plan sheet dated March 28, 2024, the maximum height and gradient of the slopes of the proposed BIDA beds were assumed to be two (2) feet and three percent (3%), respectively. Due to the relatively flat slope of the beds, general slope stability analysis was performed using Janbu indicated slopes have a factor of safety greater than 1.5. Based upon the provided plan sheet dated February 27, 2024, the data collected during this investigation, and from a geotechnical engineering standpoint, it is our opinion that there are no soil conditions that would preclude the construction of the proposed beds provided that the recommendations presented in the references report are incorporated

into the project design and construction. The proposed beds may be designed/constructed with a maximum height of 2 feet above ground surface with slopes of 3 percent.

4.5 Site Preparation and Earthwork Construction

The following procedures must be implemented during site preparation for the proposed improvements. It should be noted that references to maximum dry density, optimum moisture content, and relative compaction are based on ASTM D1557 (latest test revision) laboratory test procedures.

1. Prior to any site grading, all miscellaneous surface obstructions must be removed from the improvement area. Near surface soils containing vegetation, roots, organics, compost, or other objectionable material must be stripped to a depth of at least 3-inches to expose a clean soil surface. Surface strippings must not be incorporated into engineered fill unless the organic content is less than 3 percent by weight (ASTM D2974).
2. Existing utilities or irrigation pipes must be removed to a point at least 5-feet horizontally outside the proposed improvement area. Resultant cavities must be backfilled with engineered fill. Abandoned pipelines to remain that are less than 2 inches in diameter must be capped at the cutoff point, while pipelines greater than 2 inches in diameter must be filled with a 1-sack sand-cement slurry.
3. Soil disturbed as a result of undocumented fill, debris, and abandoned underground structures must be excavated to expose undisturbed native soil.
4. Following the required stripping, and/or removal of underground structures, the exposed soil surface in proposed at-grade improvement areas including foundations or lightly loaded concrete structures must be over-excavated uniformly to a depth of 24 inches below existing site grade or 12 inches below the bottom of the proposed foundation, whichever is deeper. The over-excavation must extend at least 5 feet laterally beyond the outside edge of the proposed foundation or areas to receive fill, whichever distance is greater. The exposed subgrade must be proof-rolled under the observation of a BSK field representative to detect soft or pliant areas. Soft or pliant areas must be over-excavated to firm native soil. The exposed surface must be scarified at minimum of 8 inches, uniformly moisture conditioned to within 2 percent of optimum moisture, and compacted to 90 percent relative compaction.
5. Engineered fill in areas of at-grade structures must consist of non-expansive soil (EI < 20), moisture conditioned to at or above optimum moisture, and compacted to 90 percent relative compaction. Excavated soils, free of deleterious substances (organic matter, demolition debris, tree roots, etc.), meeting requirements for engineering fill below, and with less than 3 percent organic content by weight, may be reused as engineered fill for the backfill.
6. Engineered fill must be placed in uniform layers not exceeding 8-inches in loose thickness, moisture-conditioned and compacted as recommended above. Acceptance of engineered fill placement must be based on both moisture content at time of compaction and relative compaction.

7. Imported fill materials must be free of deleterious substances and have less than 3 percent organic content by weight. The project specifications must require the contractor to contact BSK for review of the proposed import fill materials for conformance with these recommendations at least two weeks prior to importing to the site, whether from on-site or off-site borrow areas. Imported fill soils must be non-hazardous and be derived from a single, consistent soil type source conforming to the following criteria:

Maximum Particle Size:	3-inches
Percent Passing #4 Sieve:	65 – 100
Percent Passing #200 Sieve:	20 – 45
Plasticity Index:	less than 12
Expansion Index:	< 20
Low Corrosion Potential:	
Soluble Sulfates:	< 1,500 mg/kg
Soluble Chlorides:	< 300 mg/kg
Soil Resistivity:	> 2,000 ohm-cm

Grading operations must be scheduled as to avoid working during periods of inclement weather. Should these operations be performed during or shortly following periods of inclement weather, unstable soil conditions may result in the soils exhibiting a "pumping" condition. This condition is caused by excess moisture, in combination with compaction, resulting in saturation and near zero air voids in the soils. If this condition occurs, the affected soils must be over-excavated to the depth at which stable soils are encountered and replaced with suitable soils compacted as engineered fill. Alternatively, the Contractor may proceed with grading operations after utilizing a method to stabilize the soil subgrade, which must be subject to review by BSK prior to implementation.

4.6 Shallow, Mat, and Pole-Type Foundations

Provided the recommendations contained in this report are implemented during design and construction, it is our opinion that the proposed structures can be supported on shallow, mat, or pole-type foundations. A structural engineer must evaluate reinforcement and embedment depth based on the requirements for the structural loadings.

4.6.1 Shallow Foundations

The proposed at-grade structures may be supported on reinforced concrete spread footings bearing on engineered fill. Footing design must follow the criteria listed below:

The allowable bearing pressure applies to the dead load plus live load (DL + LL) condition. Footing design must follow the criteria listed in Table 2.

Table 2: Allowable Bearing Pressure				
Footing Embedment[1] (inches)	Minimum Footing Width (inches)		Allowable Bearing Capacity[2] (psf)	
	Continuous Footing	Isolated Spread Footing	Continuous Footing	Isolated Spread Footing
12	12	24	1,100	3,000

Note: (1) – Measure with respect to the lowest adjacent subgrade surface.
(2) – The bearing pressure can be increased one-third for transient loading such as wind or seismic.

The estimated total and differential settlement for the recommended spread footings is shown below:

Table 3: Anticipated Post-Construction Settlement			
Footing Type	Post-Construction Settlement (inches)	Differential Settlement (inches)	Angular Distortion
Continuous	1.0	--	0.005
Isolated	1.0	0.5	--

Isolated footing differential settlement is based on adjacent similarly loaded footings spaced at 30-feet. The settlement values given above are applicable to the maximum loading conditions. For loads, other than the design maximum loads, the settlements can be decreased proportionally.

4.6.2 Mat Foundations

The proposed miscellaneous structures may be supported on a thickened mat/slab foundation. The foundation may be designed for a maximum allowable bearing pressure of 600 psf (DL + LL), which may be increased by 1/3 for transient loading, such as wind or seismic. Estimated total settlement for mat/slabs is approximately 1.0 inch. Differential settlement across mat/slab foundations is anticipated to be on the order of about half of the total settlement over the length of the mat foundation. The weight of the concrete should be included in evaluating the contact pressure at the base of mat/slab foundations. The weight of embedded concrete can be reduced by the unit weight of soil times the depth of embedded concrete.

Mat foundations must be a minimum of 4-inches thick and must be supported on a compacted subgrade prepared in accordance with the “Site Preparation and Earthwork Construction” section of this report. In order to regulate cracking of the slabs, construction joints and/or saw-cut control joints must be provided in each direction at a maximum spacing of 10 feet on centers along with steel reinforcement as recommended by the project’s Structural Engineer. Control joints must have a minimum depth of one-

quarter of the slab thickness. It is recommended that steel reinforcement used in concrete slabs-on-grade consist of steel rebar. Structural concrete slabs-on-grade may be designed using an unadjusted long-term Modulus of Subgrade Reaction (Ks) of 150 pounds per cubic inch (pci) constructed on a properly compacted subgrade or engineered fill. This value is based on the correlations to soil strength using one foot by one-foot plate-load tests and should therefore be scaled (adjusted) to the actual slab width. The adjusted Ks value can be obtained by multiplying the value provided above by $[(B+B_1)/(2B)]^2$, where B is the slab width in feet and B_1 is 1 foot (width of a one foot by one foot plate-load test apparatus).

4.6.3 Pole Type Foundations

Structures such as stadium lighting, signs, etc. may be supported on pole type foundations. This type of foundation must be designed in accordance with Section 1807.3 of the 2022 CBC. However, it is recommended that an allowable lateral soil bearing pressure of 220 psf per foot of embedment be used to develop parameters S_1 and S_3 rather than one of the values given in Table 1806.2. This value includes a factor of safety of 2 and may be increased as indicated by 1806.3 and the footnotes to Table 1806.2. Unless the area surrounding the pole, foundation is paved or covered with concrete flatwork, the upper 24 inches of soil should be ignored when calculating the minimum depth of embedment.

The following table provides expressions for the allowable and ultimate axial capacity using friction to resist axial loads. The skin friction within the upper two feet of embedded length must be ignored in unpaved areas. The total settlement of pier foundations designed in accordance with these recommendations should not exceed one-half inch.

Table 4: Friction Resistance for Vertical Loads	
Allowable (lbs)	**Ultimate (lbs)**
$50\ DL^2$	$125\ DL^2$

Note (1) – D is pile diameter (feet), and L is the total embedment length (feet).

Prior to placing concrete, loose or disturbed soils must be removed from the bottom of the drilled pier excavations using a flat bottom clean-out bucket or other pre-approved method. A representative of BSK must observe the drilling and clean-out associated with the construction of pier foundations in order to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report.

Pier deflection may govern the design lateral resistance. If provided with pier geometry, lateral load, and loading eccentricity, the estimated pier head deflection can be provided.

4.7 Lateral Earth Pressures and Frictional Resistance

Lateral loads applied against foundations may be resisted by a combination of passive resistance against the vertical faces of the foundations and friction between the foundation bottom and the supporting subgrade. An unfactored coefficient of friction of 0.36 may be used between soil subgrade and precast foundation bottoms, or 0.73 between soil subgrade and cast-in-place foundation bottom. The unfactored passive pressure is presented in Table 5. The coefficient of friction and passive earth pressure values given above represent ultimate soil strength values. BSK recommends that a safety factor consistent with the design conditions be included in their usage. For resistance against lateral sliding that is countered solely by the passive earth pressure against footings or friction along the bottom of footings, a minimum safety factor of 1.5 is recommended. For stability against lateral sliding that is resisted by combined passive pressure and frictional resistance, a minimum safety factor of 2.0 is recommended. For lateral resistance against seismic loading conditions, a minimum safety factor of 1.2 is recommended. We based these lateral resistance values on the assumption that the concrete for the foundations is either placed directly against undisturbed soils or that the voids created from the use of forms are backfilled with engineered fill or other approved materials, such as lean concrete. Passive resistance in the upper foot of soil cover below finished grades should be neglected unless the ground surface is confined by concrete slabs, pavements, or other such positive protection.

The following earth pressure parameters may be used for designing earth-retaining structures and foundations.

Table 5: Lateral Earth Pressures	
Lateral Pressure Conditions	**Equivalent Fluid Pressure (pcf)**
Active Pressure	35
At-Rest Pressure	55
Passive Pressure	435

Parameters are shown in the above table for drained conditions of select engineered fill or prepared native soil. In addition, the drained condition assumes that positive drainage will be provided away from the structure improvements and that water does not accumulate around the structure and cause a build-up of hydrostatic pressure.

4.8 Excavation Stability

Soils encountered within the upper 10 feet are generally Type C soil in accordance with OSHA (Occupational Safety and Health Administration). The slopes surrounding or along temporary excavations must be no steeper than 2.5H:1V to a maximum depth of 10 feet. As stated above, relatively cohesionless soils were encountered within the test borings, as such, it may be necessary to lay back slopes flatter to facilitate construction. Temporary excavations for the project construction must be left open for as short a time as possible, must be protected from water runoff, and must be scheduled as to avoid working during periods of inclement weather (e.g., rain). No equipment should be operated within 8 feet of the top of the slope. Slope height, slope inclination, and excavation depths (including utility trench excavations) must in no case exceed those specified in local, state, or federal safety regulations (e.g., OSHA Health and Safety Standards for Excavations 29 CFR Part 1926, or successor regulations). These excavation recommendations are based on soil characteristics derived from the borings. Variations in soil conditions will likely be encountered during excavation. At the time of construction, BSK must be afforded the opportunity to observe and document sloping and shoring conditions, and the opportunity to provide review of actual field conditions to account for condition variations not otherwise anticipated in the preparation of these recommendations.

4.9 Utility Trench Excavation and Backfill

Pipes and conduits must be bedded and shaded in accordance with the requirements of the pipe manufacturer. Where no specific requirements exist, we recommend a minimum of 6-inches of sand bedding material for pipe installations 12 to 24-inches in diameter. For pipe diameters smaller than 12-inches, the bedding thickness may be reduced to 4-inches. For HDPE pipe installations/construction, sand bedding is not required, and the on-site soil can be used as backfill. The bedding material and envelope (up to 6-inches above the pipe) must consist of sand (Sand Equivalent greater than 30), be placed in loose lifts not exceeding 8-inches in thickness, compacted to at least 90 percent of the maximum dry density, and moisture conditioned to within 2 percent of optimum moisture content. Water jetting to attain compaction must not be allowed.

Adequate excavation width must be provided to permit uniform compaction on both sides of utility lines installed within the trench. The trench backfill material may consist of engineered fill. Trench backfill outside the containment area must be placed in loose lifts not to exceed 8-inches in loose thickness, compacted to 90 percent of the maximum dry density, and moisture conditioned to 2 percent above optimum moisture content. Conduits extending through or below footings must be "sleeved" as determined by the Project Structural Engineer

4.10 Surface Drainage Control

Final grading around site improvements must provide for positive and enduring drainage. Ponding of water must not be allowed on or near the proposed structures. Saturation of the soils immediately adjacent to or below structures must not be allowed. Although landscaping is not anticipated, irrigation water must be applied in amounts not exceeding those required to offset evaporation, sustain plant life, and maintain a relatively uniform moisture profile around and below site improvements. Fill elevations are anticipated to be less than 3 feet above natural grade to achieve positive site drainage.

5 PLANS AND SPECIFICATIONS REVIEW

BSK recommends that it be retained to review the draft plans and specifications for the project, with regard to foundations and earthwork, prior to there being finalized and issued for construction bidding.

6 CONSTRUCTION TESTING AND OBSERVATIONS

Geotechnical testing and observation during construction is a vital extension of this geotechnical investigation. BSK recommends that it be retained for those services. Field review during site preparation and grading allows for evaluation of the exposed soil conditions and confirmation or revision of the assumptions and extrapolations made in formulating the design parameters and recommendations. BSK's observations must be supplemented with periodic compaction tests to establish substantial conformance with these recommendations. BSK must also be called to the site to observe foundation excavations, prior to placement of reinforcing steel or concrete, in order to assess whether the actual bearing conditions are compatible with the conditions anticipated during the preparation of this report. BSK must also be called to the site to observe placement of foundation and slab concrete.

If a firm other than BSK is retained for these services during construction, that firm must notify the owner, project designers, governmental building officials, and BSK that the firm has assumed the responsibility for all phases (i.e., both design and construction) of the project within the purview of the geotechnical engineer. Notification must indicate that the firm has reviewed this report and any subsequent addenda, and that it either agrees with BSK's conclusions and recommendations or that it will provide independent recommendations.

7 LIMITATIONS

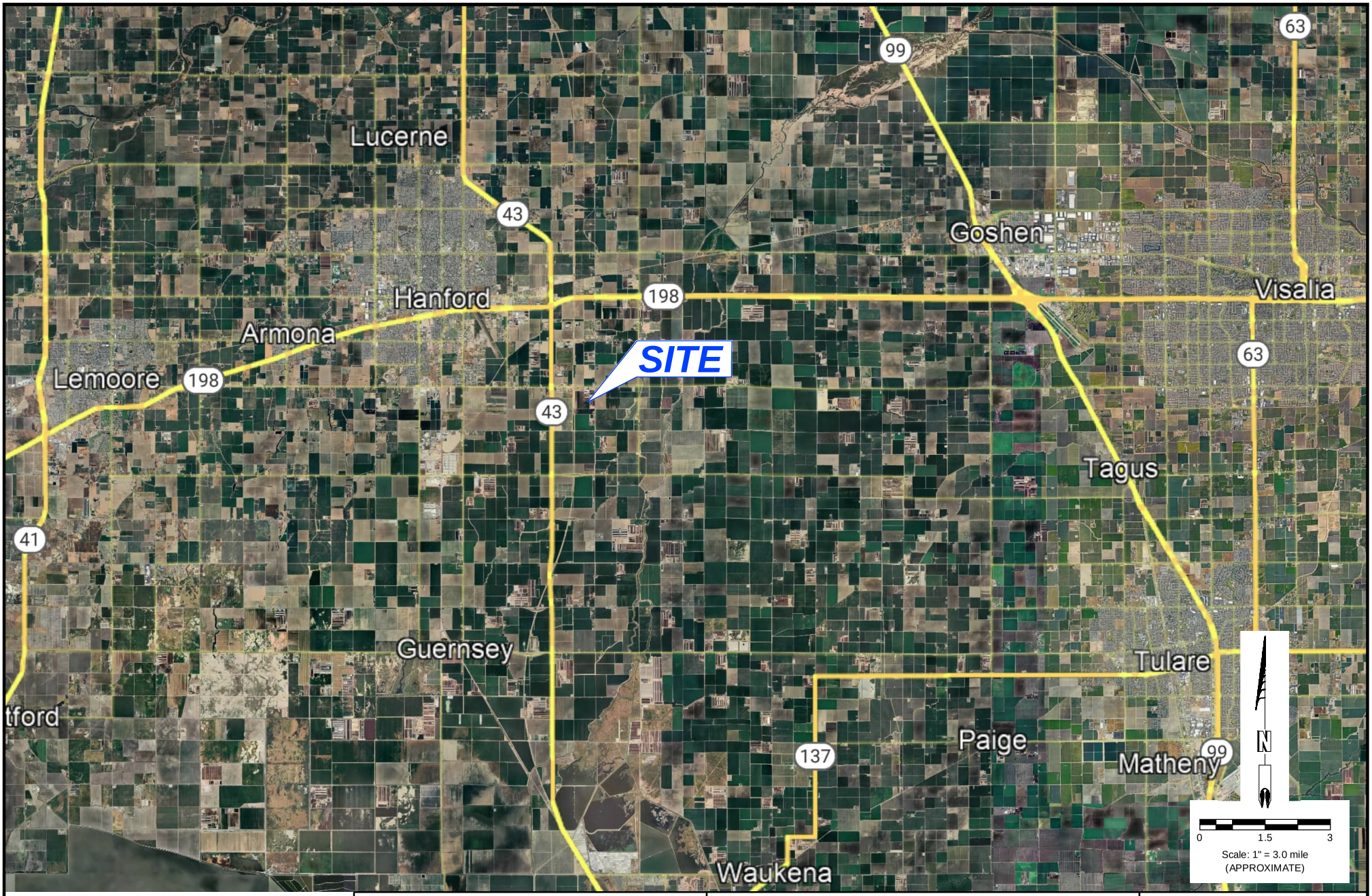
The analyses and recommendations submitted in this report are based upon the data obtained from the test borings performed at the locations shown on Figure 2. The report does not reflect variations, which may occur between or beyond the borings. The nature and extent of such variations may not become evident until additional exploration and testing is performed, or construction is initiated. If variations then appear, a re-evaluation of the recommendations of this report will be necessary after performing on-site observations during the excavation period and noting the characteristics of the variations.

The validity of the recommendations contained in this report is also dependent upon an adequate testing and observation program during the construction phase. BSK assumes no responsibility for construction compliance with the design concepts or recommendations unless it has been retained to perform the testing and observation services during construction as described above.

The findings of this report are valid as of the present. However, changes in the conditions of the site can occur with the passage of time, whether caused by natural processes or the work of man, on this property or adjacent property. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation, governmental policy, or the broadening of knowledge.

BSK has prepared this report for the exclusive use of the Client and members of the project design team. The report has been prepared in accordance with generally accepted geotechnical engineering practices, which existed in Kings County at the time the report was written. No other warranties, either express or implied, are made as to the professional advice provided under the terms of BSK's agreement with Client and included in this report.

FIGURES



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REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
691 N. Laverne Avenue #101
Fresno, California 93727
Tel. (559) 497-2880

SITE VICINITY MAP

Sozinho #5 Dairy - BIDA System
12252 7th Avenue
Hanford, California

FIGURE 1

JOB NO. G24-000-678
DATE June 6, 2024
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

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LEGEND:

B-3 APPROXIMATE BORING LOCATIONS

REFERENCE IMAGE: Google Earth

BSK ASSOCIATES
691 N. Laverne Avenue #101
Fresno, California 93727
Tel. (559) 497-2880

BORING LOCATION MAP

Sozinho #5 Dairy - BIDA System
12252 7th Avenue
Hanford, California

FIGURE 2

JOB NO. G24-000-678
DATE June 6, 2024
DR. BY TG
CH. BY NP
SCALE AS SHOWN
SHEET NO. 1
OF 1 SHEETS

APPENDIX A

FIELD EXPLORATION

APPENDIX A
Field Exploration

The field exploration, conducted on May 31, 2024, consisted of a site reconnaissance and drilling three (3) exploratory test borings. The borings were drilled to depths of approximately 21.5 feet below ground surface (bgs) within the proposed improvement locations. The test borings were drilled with a truck-mounted drill rig, equipped with 8-inch augers. The approximate boring locations are presented on Figure 2.

The soil materials encountered in the test borings were visually classified in the field, and logs were recorded during the excavation and sampling operations. Visual classification of the materials encountered in the test borings were made in general accordance with the Unified Soil Classification System (ASTM D2487). A soil classification chart is presented herein. Boring logs are presented herein and should be consulted for more details concerning subsurface conditions.

Subsurface samples were obtained at the various depths shown on the boring logs by driving samplers which consisted of a 2.5-inch inside diameter (I.D.) lined with stainless sleeves and 1.4-inch I.D. Standard Penetration Test (SPT) sampler. The samplers were driven 18 inches using a 140-pound, automatic hammer dropping 30 inches. The number of blows required to drive the last 12 inches was recorded as the blow count (blows/foot) on the log of borings. The relatively undisturbed soil core samples were capped at both ends to preserve the samples at their natural moisture content. Disturbed soil samples were obtained using the Split-Spoon Sampler (marked X in logs) and were placed and sealed in polyethylene bags. At the completion of the field exploration, the test borings were backfilled with the soil cuttings, as set forth in BSK's proposal.

It should be noted that the use of terms such as "soft", "medium stiff", "very stiff," or "hard" to describe the consistency of a soil is based on sampler blow count and is not necessarily reflective of the in-place density or unit weight of the soils being sampled. The relationship between sampler blow count and consistency is provided in Figure A-2.

MAJOR DIVISIONS				TYPICAL NAMES
COARSE GRAINED SOILS More than Half > #200 sieve	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 15% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS MORE THAN HALF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 15% FINES	SM	SILTY SANDS, POOORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE GRAINED SOILS More than Half < #200 sieve	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

■	Modified California (2.5" ID)	RV	R-Value
⊠	Standard Penetration Test (SPT)	SA	Sieve Analysis
☒	Split Spoon	SW	Swell Test
◪	Pushed Shelby Tube	TC	Cyclic Triaxial
▯	Auger Cuttings	TX	Unconsolidated Undrained Triaxial
✋	Grab Sample	TV	Torvane Shear
⊘	Sample Attempt with No Recovery	UC	Unconfined Compression
CA	Chemical Analysis	(1.2)	(Shear Strength, ksf)
CN	Consolidation	WA	Wash Analysis
CP	Compaction	(20)	(with % Passing No. 200 Sieve)
DS	Direct Shear	▽	Water Level at Time of Drilling
PM	Permeability	▼	Water Level after Drilling(with date measured)
PP	Pocket Penetrometer		

BSK®

SOIL DESCRIPTION KEY

FIGURE

A-1

SOIL DESCRIPTION KEY

MOISTURE CONTENT

DESCRIPTION	ABBR	FIELD TEST
Dry	D	Absence of moisture, dusty, dry to the touch
Moist	M	Damp but no visible water
Wet	W	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4 in. thick, note thickness
Laminated	Alternating layers of varying material or color with the layer less than 1/4 in. thick, note thickness
Fissured	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided	Fracture planes appear polished or glossy, sometimes striated
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness
Homogeneous	Same color and appearance throughout

PLASTICITY

DESCRIPTION	ABBR	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm) thread cannot be rolled at any water content.
Low (L)	LP	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	MP	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit
High (H)	HP	It takes considerable time rolling and kneeding to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit

CONSISTENCY - FINE-GRAINED SOIL

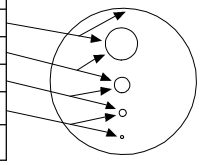
CONSISTENCY	ABBR	FIELD TEST
Very Soft	VS	Thumb will penetrate soil more than 1 in. (25 mm)
Soft	S	Thumb will penetrate soil about 1 in. (25 mm)
Firm	F	Thumb will indent soil about 1/4 in. (6 mm)
Hard	H	Thumb wil not indent soil but readily indented with thumbnail
Very Hard	VH	Thumbnail will not indent soil

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12"	>12"	Larger than basketball-sized
Cobbles		3 - 12'	3 - 12"	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3"	3/4 -3"	Thumb-sized to fist-sized
	fine	#4 - 3/4"	0.19 - 0.75"	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19"	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079"	Sugar-sized to rock salt-sized
	fine	#200 - #10	0.0029 - 0.017"	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029	Flour-sized and smaller

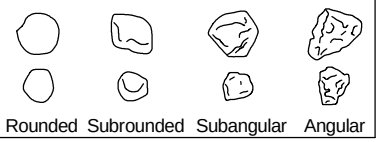
REACTION WITH HCL

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately



ANGULARITY

DESCRIPTION	ABBR	CRITERIA
Angular	A	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular	SA	Particles are similar to angular description but have rounded edges
Subrounded	SR	Particles have nearly plane sides but have well-rounded corners and edges
Rounded	R	Particles have smoothly curved sides and no edges



APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	ABBR	SPT (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)	FIELD TEST
Very Loose	VL	<4	<4	<5	0 - 15	Easily penetrated with 1/2-inch reinforcing rod by hand
Loose	L	4 - 10	5 - 12	5 - 15	15 - 35	Difficult to penetrate with 1/2-inch reinforcing rod pushed by hand
Medium Dense	MD	10 - 30	12- 35	15 - 40	35 - 65	Easily penetrated a foot with 1/2-inch reinforcing rod driven with 5-lb. hammer
Dense	D	30 - 50	35 - 60	40 - 70	65 - 85	Difficult to penetrate a foot with 1/2-inch reinforcing rod driven with 5-lb. hammer
Very Dense	VD	>50	>60	>70	85 - 100	Penetrated only a few inches with 1/2-inch reinforcing rod driven with 5-lb. hammer

BSK Associates
691 N. Laverne Avenue, #101
Fresno, CA 93727
Telephone: 559-497-2880

Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 1**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–10								SM	**Silty SAND (SM)** - yellowish brown, moist, fine to coarse grained sand	
3			16	102.9	9.6	45			... medium dense	
6			11						... loose	
10–11			17	118.5	12.4			CL	**Sandy CLAY (CL)** - hard, grayish brown, moist, fine to coarse grained sand	Pocket Penetrometer = 4.25
16			11							
21			15	91.7	30.4				... olive gray	Pocket Penetrometer = 3.25, very stiff
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

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Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 2**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–2								SP	**Poorly Graded SAND (SP)** - medium dense, olive, moist, fine to coarse grained sand, trace clay	
3			18	102.9	5.7	2				
4–5										
6			14	88.3	4.7				... olive gray, no trace clay	
7–9										
10								SP-SM	**Poorly Graded SAND with Silt (SP-SM)** - medium dense, light brown, dry, fine to coarse grained sand, subrounded	
11			14	86.0	1.6					
12–14										
15								CL	**Sandy CLAY (CL)** - very stiff, brown, moist, fine to coarse grained sand	
16			24	121.8	8.8					Pocket Penetrometer = 3.00
17–19										
20								SP-SM	**Poorly Graded SAND with Silt (SP-SM)** - medium dense, brown, moist, fine to coarse grained sand, subrounded	
21			21							
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

BSK Associates
691 N. Laverne Avenue, #101
Fresno, CA 93727
Telephone: 559-497-2880

Project: Sozinho #5 Dairy-BIDA System

Location: 12252 7th Avenue, Hanford, CA

Project No.: G24000678

Logged By: A. Bravo

Checked By: N. Popenoe

Boring: **B- 3**

Depth (Feet)	Samples	Bulk Samples	Penetration Blows / Foot	In-Situ Dry Density (pcf)	In-Situ Moisture Content (%)	% Passing No. 200 Sieve	Graphic Log	USCS	MATERIAL DESCRIPTION	REMARKS
1–5			15	104.7	8.0	28		SC	**Clayey SAND (SC)** - yellowish brown, moist, fine to coarse grained sand, trace silt ... medium dense	
5–10			11	101.1	5.8			SM	**Silty SAND (SM)** - loose, olive brown, moist, fine to coarse grained sand, trace clay	
10–15			13	115.4	11.0			CL	**CLAY (CL)** - very stiff, brown, moist, trace silt	Pocket Penetrometer = 2.00
15–20			12					SM	**Silty SAND (SM)** - medium dense, light brownish, moist, fine to coarse grained sand	
20–21			33	96.4	25.4			CL	**CLAY (CL)** - hard, grayish brown, moist, fine grained sand	Pocket Penetrometer = 4.50
22–24									Boring terminated at approximately 21.5 feet bgs. No groundwater encountered. Boring backfilled with soil cuttings.	

Drilling Contractor: Baja Exploration
Drilling Method: Hollow Stem Auger
Drilling Equipment: CME75
Date Started: 5/31/24
Date Completed: 5/31/24

Surface Elevation:
Sample Method: 2.5" Modified Cal & 1.5" I.D. SPT Split Spoon
Groundwater Depth: Not Encountered
Completion Depth: 21.5 Feet
Borehole Diameter: 8"

* See key sheet for symbols and abbreviations used above.

GEO BORING LOGS.GPJ BSK.GDT 6/21/24

APPENDIX B

LABORATORY TESTING

APPENDIX B
Laboratory Testing

The results of laboratory testing performed in conjunction with this project are contained in this Appendix. The following laboratory tests were performed on soil samples in general conformance with applicable standards.

In-Situ Moisture and Density

The field moisture content and in-place dry density determinations were performed on relatively undisturbed samples obtained from the test borings. The field moisture content, as a percentage of dry weight of the soils, was determined by weighing the samples before and after oven drying in accordance with ASTM D2216 test procedures. Dry densities, in pounds per cubic foot, were also determined for undisturbed core samples in accordance with ASTM D2937 test procedures. Test results are presented on the boring logs in Appendix A.

Gradation

Three (3) #200 Wash Tests were performed on selected soil samples obtained at the time of drilling in the area of planned construction. The tests were performed to determine the amount of fine material present in the subsurface material. The tests were performed in general accordance with ASTM Test Method D1140. The test results are presented in the boring logs in Appendix A.

Direct Shear Test

One (1) direct shear test was performed on test specimens trimmed from a selected soil sample. The three-point shear test was performed in general accordance with ASTM D3080, Direct Shear Test for Soils under Consolidated Drained Conditions. The test specimens, each 2.42 inches in diameter and 1 inch in height, were subjected to shear along a plane at mid-height after allowing for pore pressure dissipation. The results of the test are presented in Figure B-1.

Collapse Potential Test

Two (2) Collapse Potential tests were performed on relatively undisturbed soil samples to evaluate collapse potential characteristics. The tests were performed in general accordance with ASTM D5333. The samples were initially loaded under as-received moisture content to a selected stress level, loaded to a maximum load of 2000 psf, and then saturated. The test results are presented on Figures B-2 and B-3.

Soil Corrosivity

The results of chemical analyses performed on one (1) bulk soil sample using California Test Method 643 (for pH and minimum resistivity) and California Test Methods 417 and 422 (for soluble sulfate and chlorides, respectively), are presented below.

SUMMARY OF CHEMICAL TEST RESULTS

Sample Location	pH	Sulfate (mg/kg)	Chloride (mg/kg)	Minimum Resistivity (ohms-cm)
B-3 at 0-5´	7.7	22	32	24,640

Direct Shear Test

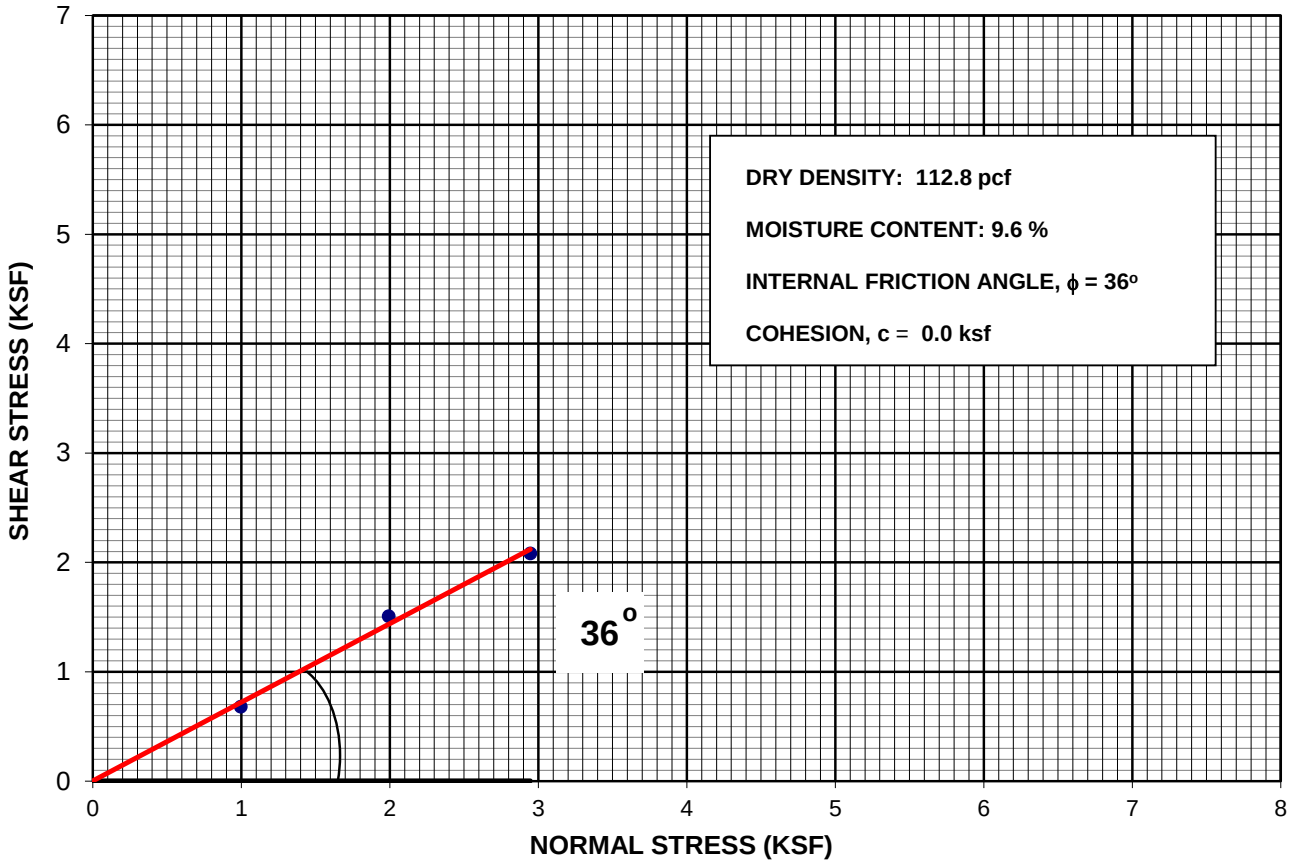
ASTM D-3080

FIGURE B-1

691 N Laverne Ave,
Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

Project Name:	Sozinho No. 5 Dairy BIDA System	**Sampled By:**	A. Bravo	**Sample Date:**	5/31/2024
		Tested By:	D. Messfin	**Test Date:**	6/10/2024
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/10/2024
Sample Location:	B-1 @ 3'	**Sample Description:**	Silty Sand (SM) - medium dense, yellowish brown, moist, fine to coarse grained sand		

SHEAR STRENGTH DIAGRAM

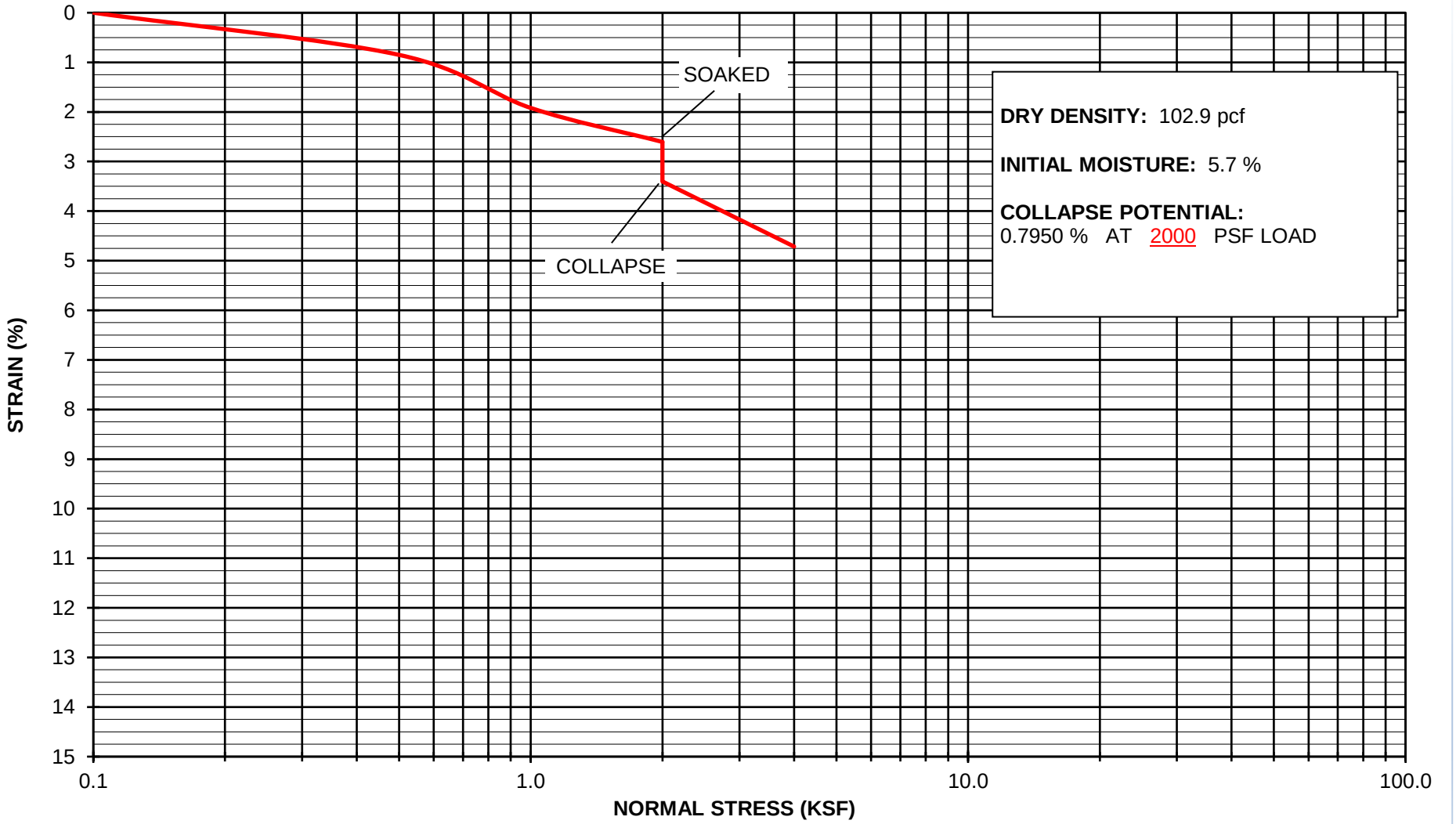


BSK ASSOCIATES
691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

COLLAPSE POTENTIAL
ASTM D-5333

FIGURE B-2

Project Name:	Sozinho No. 5 - BIDA System	**Sampled By:**	A.Bravo	**Sample Date:**	5/31/24
		Tested By:	D.Messfin	**Test Date:**	6/11/24
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/13/24
Sample Location:	B - 2 @ 3'	**Sample Description:**	Poorly Graded Sand (SP) - medium dense, olive, moist, fine to coarse grained sand, trace clay		



BSK ASSOCIATES
691 N. Laverne, Suite 101
Fresno, CA 93727
Ph: (559) 497-2880

COLLAPSE POTENTIAL
ASTM D-5333

FIGURE B-3

Project Name:	Sozinho No. 5 Dairy - BIDA System	**Sampled By:**	A.Bravo	**Sample Date:**	5/31/24
		Tested By:	D.Messfin	**Test Date:**	6/10/24
Project Number:	G24000678	**Lab Tracking ID:**	N/A	**Report Date:**	6/12/24
Sample Location:	B - 3 @ 3'	**Sample Description:**	Silty Sand (SM) - medium dense, yellowish brown, moist, fine to coarse grained sand, trace silt		

