INITIAL STUDY WITH
PROPOSED MITIGATED NEGATIVE DECLARATION

AEMETIS BIOGAS LLC DAIRY BIOGAS CLUSTER

STANISLAUS COUNTY, CALIFORNIA

Prepared for:

Stanislaus County
1716 Morgan Road
Modesto, CA 95358

Prepared by:

Dokken Engineering
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Folsom, California 95630

October 2020

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Proposed Mitigated Negative Declaration

Pursuant to: Division 13, Public Resources Code

PROJECT DESCRIPTION

Aemetis Biogas LLC, in coordination with Stanislaus County Public Works, is proposing to construct approximately 32.5 miles of dairy biogas pipeline located in unincorporated Stanislaus and Merced Counties. The pipeline would provide transmission of biogas collected from seventeen privately owned dairy farms using a covered anaerobic lagoon digester, which would then be pressurized for transmission to a central Biogas Cleanup Plant co-located at the Aemetis Advanced Fuels Keyes ethanol production facility. The pipeline would be up to eight inches in diameter carrying pressurized methane and CO_2 based biogas, and would be installed a minimum of four feet below existing ground level. The proposed pipeline would be constructed within the existing Stanislaus and Merced County roadway right-of-way and would include an operation, access, and maintenance easement and indemnification agreement within that facility. In some select locations, the pipeline would be constructed on private agricultural properties.

DETERMINATION

This proposed Mitigated Negative Declaration (MND) is included to give notice to interested agencies and the public that it is the County's intent to adopt an MND for this Project. This does not mean that the County's decision regarding the Project is final. This proposed MND is subject to modification based on comments received by interested agencies and the public.

The County has prepared an Initial Study for this Project, and pending public review, has determined from this study that the Project would not have a significant effect on the environment for the following reasons:

The Project would have no impact on aesthetics; energy, land use and planning; mineral resources; population and housing; public services; and recreation.

The Project would have a less than significant impact on agriculture and forest resources; geology and soils; greenhouse gas emissions; noise; and utilities and service systems.

The Project would have less than significant impact with mitigation incorporated on air quality; biological resources; cultural resources; hazards and hazardous materials; hydrology and water quality; transportation and traffic; tribal cultural resources; wildfire; and mandatory findings of significance.

_____ _____

Frederic Clark
Project Manager
Department of Public Works
Stanislaus County

Date

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EXECUTIVE SUMMARY

Aemetis Biogas LLC, in coordination with Stanislaus County Public Works, is proposing to construct approximately 32.5 miles of biogas pipeline located in unincorporated Stanislaus and Merced Counties. The pipeline would provide transmission of dairy biogas from 17 privately owned dairy farms to a central Biogas Cleanup Plant co-located at the Aemetis Advanced Fuels Keyes ethanol production facility. The pipeline would be up to eight inches in diameter carrying pressurized methane and CO_2 based biogas, and would be installed a minimum of four feet below existing ground level. The table below provides a summary of potential impacts to environmental resources from the Project.

This environmental document is prepared in conformance with the requirements of the California Environmental Quality Act (CEQA) Public Resources Code 21000-21178. Stanislaus County is the Lead Agency for CEQA implementation. Merced County and the City of Modesto are both Responsible Agencies as a portion of the project would occur within each of their jurisdictional areas.

Table i: Summary of Potential Impacts

Resource	Project Impacts	Summary of Avoidance, Minimization, and/or Mitigation Measures
Aesthetics	No impact.	N/A
Agriculture and Forest Resources	Less than significant	N/A
Air Quality	Less than significant with mitigation incorporated	Dust and erosion control during construction.
Biological Resources	Less than significant with mitigation incorporated	Environmentally Sensitive Area Fencing; pre-construction nesting bird surveys; and measures to minimize or avoid impacts to special status wildlife species.
Cultural Resources	Less than significant with mitigation incorporated	Compliance with regulations relating to discovery of previously unknown cultural resources or human remains.
Energy	Less than significant	N/A
Geology and Soils	Less than significant	Standard BMPs incorporated.
Greenhouse Gas Emissions	Less than significant	Comply with all local Air Quality Management District rules, ordinances, and regulations for air quality restrictions.
Hazards and Hazardous Materials	Less than significant with mitigation incorporated	Best practices for biogas pipeline construction. Proper handling of potential hazardous materials.
Hydrology and Water Quality	Less than significant with mitigation incorporated	Standard BMPs and Storm Water Management Plan.
Land Use and Planning	No impact	N/A
Mineral Resources	No impact	N/A
Noise	Less than significant	Minimize construction-generated noise.

Resource	Project Impacts	Summary of Avoidance, Minimization, and/or Mitigation Measures
Population and Housing	No impact	N/A
Public Services	No impact	N/A
Recreation	No impact	N/A
Transportation/ Traffic	Less than significant	Traffic Management Plan
Tribal Cultural Resources	No impact	N/A
Utilities and Service Systems	Less than significant	N/A
Wildfire	No impact	N/A
Mandatory Findings of Significance	Less than significant with mitigation incorporated	With mitigation measures in place, all impacts will be reduced to less than significant. Potentially cumulative impacts to biological resources will also be reduced to less than significant impacts with mitigation incorporated.

The detailed CEQA checklist summarizing specific Project impacts is included within each of the sections of the Initial Study provided in Chapter 2 of this document.

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LIST OF ABBREVIATIONS

AB	Assembly Bill
ADL	Aerially deposited lead
ADT	Average Daily Traffic
APE	Area of Potential Effects
AUL	Activity and Use Limitation
BMPs	Best Management Practices
BSA	Biological Study Area
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CWA	Clean Water Act
dBA	Decibel A-weighted
DWR	Department of Water Resources
EDR	Environmental Data Resources Inc.
E.O.	Executive Order
EPA	Environmental Protection Agency
ESA	Environmentally Sensitive Area
FESA	Federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
GHG	greenhouse gases
IPac	USFWS Information for Planning and Conservation
ISA	Initial Site Assessment
Ldn	Day-night Average Sound Level
Leq	Equivalent Continuous Sound Level

Lmax	Maximum Sound Level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
Mph	miles per hour
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCIC	North Central Information Center
NEPA	National Environmental Protection Act
NMFS	National Marine Fisheries Service
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
NOA	Naturally Occurring Asbestos
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
O_3	Ozone
OHP	Office of Historic Preservation
PCEs	primary constituent elements
PM	Particulate Matter
POAQC	Project of Localized Air Quality Concern
ppb	Parts per Billion
ppm	Parts per Million
PRC	Public Resources Code
REC	Recognized Environmental Condition
ROG	Reactive organic compounds
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SCS	Sustainable Communities Strategy
sec	second
SHPO	State Historic Preservation Office
SHTAC	Swainson’s Hawk Technical Advisory Committee
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO_2	Sulfur Dioxide

SPCCP	Spill Prevention, Control, and Countermeasure Program
SSC	Species of Special Concern (SSC).
StanCOG	Stanislaus Council of Governments
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VHD	vehicle hours of delay
VOC	Volatile organic compounds

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1.0 PROJECT

1.1 INTRODUCTION

Aemetis Biogas LLC, in coordination with Stanislaus County Public Works, is proposing to construct approximately 32.5 miles of biogas pipeline located in unincorporated Stanislaus and Merced Counties. The pipeline would provide transmission of biogas from seventeen privately owned dairy farms to a central Biogas Cleanup Plant co-located at the Aemetis Advanced Fuels Keyes ethanol production facility. The pipeline would be up to eight inches in diameter carrying pressurized methane and CO_2 based biogas, and would be installed at a minimum of four feet below existing ground level. The proposed pipeline would be constructed within the existing Stanislaus and Merced County roadway right-of-way and would include an operation, access, and maintenance easement and indemnification agreement within that facility.

1.2 PROJECT DESCRIPTION

Aemetis Biogas LLC, in coordination with Stanislaus County Public Works, is proposing to construct approximately 32.5 miles of biogas pipeline located in unincorporated Stanislaus and Merced Counties. The pipeline would provide transmission of biogas collected from seventeen privately owned dairy farms using a covered anaerobic lagoon digester, then pressurized for transmission to a central Biogas Cleanup Plant co-located at the Aemetis Advanced Fuels Keyes ethanol production facility. The pipeline would be up to eight inches in diameter carrying pressurized methane and CO_2 based biogas, and would be installed at a minimum of four feet below existing ground level. The proposed pipeline would be constructed within the existing Stanislaus and Merced County roadway right-of-way and would include an operation, access, and maintenance easement and indemnification agreement within that facility. In some select locations, the pipeline would be constructed on private agricultural properties where feasible. The pipeline is proposed to be constructed under the following existing County maintained roadways:

Stanislaus County

- Central Avenue
- Keyes Road
- Moffet Road
- Taylor Road
- Jennings Road
- West Monte Vista Avenue
- Crows Landing Road
- Ruble Road
- Bystrum Road

Merced County

- Central Avenue
- Williams Avenue
- Tegner Road
- Crane Avenue
- Columbus Avenue

Improvements at each of the private dairies would be necessary to connect to existing or planned manure collection and lagoon digester facilities. The pipeline is expected to require crossings at several irrigation canals and the pipeline construction would avoid direct conflict with those water conveyance facilities by utilizing horizontal directional drilling approximately 20’ underneath those existing features. A utility easement from Turlock Irrigation District (TID) would be obtained prior to starting construction. The project would also involve crossing the Union Pacific Railroad in two

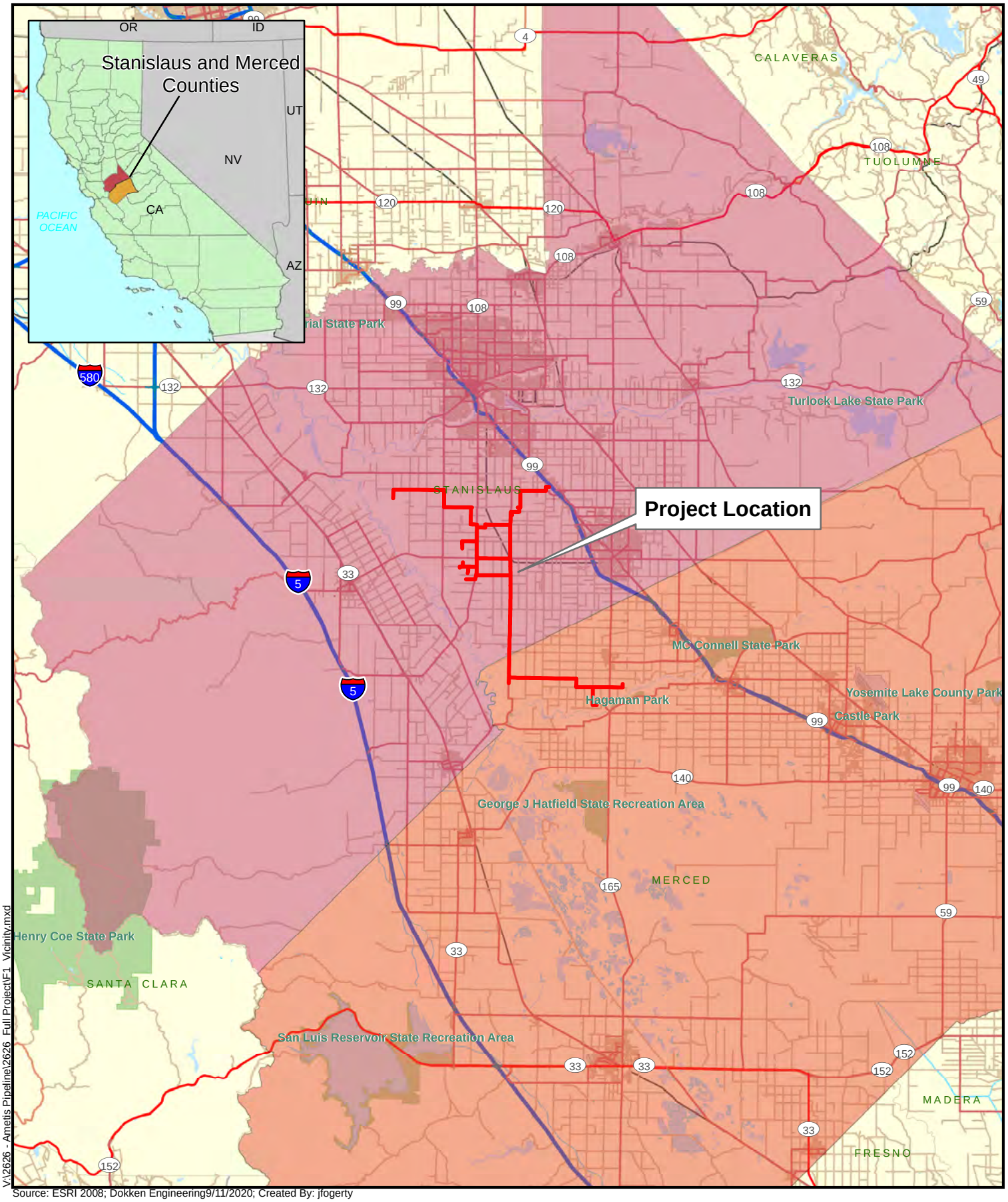
locations and is proposed to be constructed with horizontal directional drilling under the railroad facility. An agreement for a utility easement would be obtained from Union Pacific Railroad prior to constructing on their property.

1.3 PERMITS AND APPROVALS NEEDED

Environmental findings within the Project include impacts to stormwater quality and encroachment into railroad right-of-way. The following consultations and environmental permits will be obtained prior to the start of construction.

Table 1: Permit and Approvals Needed

Agency	Permit/Approval	Status
Regional Water Quality Control Board	National Pollutant Discharge Elimination System 402 General Permit for Storm Water Discharges Associated with Construction Activity	Will be Obtained Prior to Construction.
Union Pacific Railroad	Encroachment Permit for construction, operation, and maintenance of the pipeline facility	Will be Obtained Prior to Construction



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Source: ESRI 2008; Dokken Engineering9/11/2020; Created By: jfogerty

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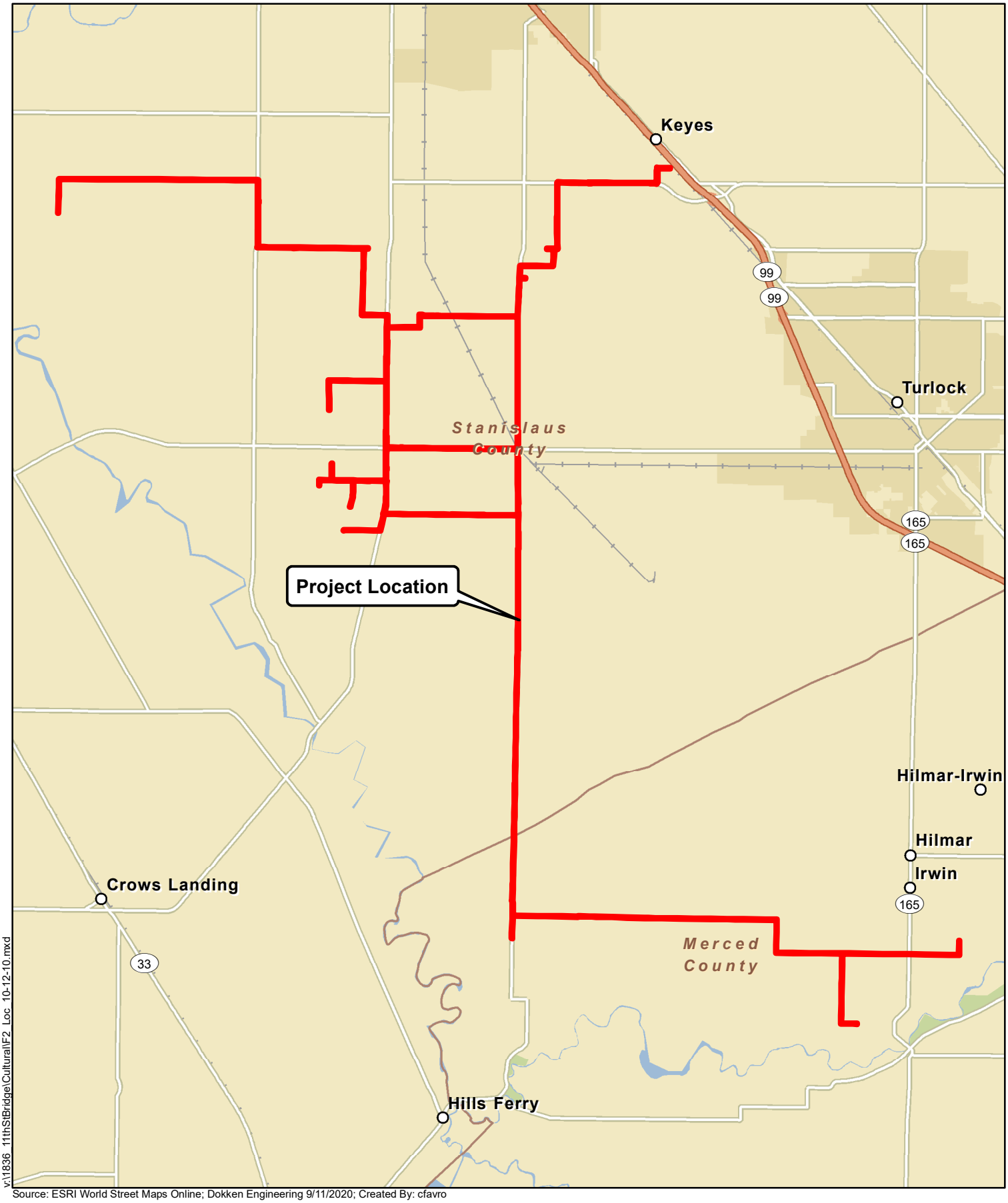
FIGURE 1
Project Vicinity
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California



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Source: ESRI World Street Maps Online; Dokken Engineering 9/11/2020; Created By: cfavro

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FIGURE 2
Project Location
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 8,000 ft

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Figure 3
Project Area
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

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Figure 3
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Project Area

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Project Area

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
Project Area
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Figure 3
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Figure 3
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Figure 3
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Figure 3
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Stanislaus and Merced Counties, California

Project Area

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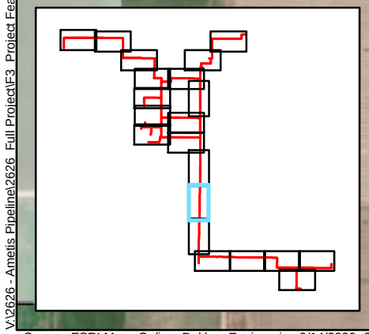

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Figure 3
Project Area
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
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Aemetis Biogas Pipeline Project
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
Project Area
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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

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Figure 3
Project Area
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Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

2.0 Initial Study

This chapter explains the impacts that the Project would have on the human, physical, and biological environments in the Project area. It describes the existing environment that could be affected by the Project, potential impacts from the alternatives, and avoidance, minimization, and/or mitigation measures. Any indirect impacts are included in the general impacts analysis and discussions that follow.

2.1 AESTHETICS

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

REGULATORY SETTING

CEQA establishes that it is the policy of the state to take all action necessary to provide the people of the state "with…enjoyment of aesthetic, natural, scenic and historic environmental qualities (CA Public Resources Code Section 21001[b])."

Stanislaus County and Merced County do not have specific sections or chapters regarding aesthetics or visual resources within their respective General Plans. However, each County has policies regarding the visual impacts of a project.

DISCUSSION

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

No Impact. No designated scenic vistas are at or near the proposed pipeline. There are also no scenic byways along or near any of the roads the pipeline would run.

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

No Impact. The project is not located within a state scenic highway nor would it damage any scenic related resources.

c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?

No Impact. The pipeline would be constructed underground and would not degrade the existing visual character or quality of public views.

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

No Impact. The project would not create a new source of light or glare.

FINDINGS

The pipeline project would have **No Impact** relating to aesthetics.

2.2 AGRICULTURE AND FOREST RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the Project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☒	☐
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

Due to the size of the project and length of the pipeline (approximately 32.5 miles), the project stretches through areas of Unique Farmland, Prime Farmland, Farmland of Statewide Importance, Confined Animal Agriculture, and other land uses. Agriculture is the leading industry in Stanislaus County and this project would support infrastructure that meets the goals and objectives defined in the Agricultural Element of the Stanislaus County General Plan to strengthen the agricultural sector and conserve agricultural lands for agricultural uses. The pipeline is accessory to existing dairy operations and is a permitted use within the General Agricultural or A-2 District (Stanislaus County Zoning Ordinance). Biogas would be collected at each private dairy through manure collection and processing using a covered anaerobic lagoon digester, and then gas pressurization for transmission in the proposed pipeline. Processing and refining of the biogas will occur at the Aemetis facility in Keyes.

DISCUSSION

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?*

Less than Significant Impact. To identify Prime and Unique Farmland within the project area, an examination of the Department of Conservation's California Important Farmland Finder website was utilized. Stanislaus and Merced Counties have a diversity of agricultural land and while the proposed pipeline would predominantly be constructed within existing roadway right-of-way, some portions of the pipeline would be constructed on active agricultural lands. However,

no conversion of farmland would occur since the pipeline would be constructed underground and would not prevent the future use of these properties from typical agricultural uses in the region. Individual easements will be negotiated with private property owners where necessary for continuing operation and maintenance of the pipeline after construction is completed.

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

Less than Significant Impact. The pipeline would run across properties zoned for agricultural use, private properties that contain dairy farms, and parcels that are under a Williamson Act contract. The project does not conflict with existing zoning for agricultural use since the pipeline would be constructed underground. Operation and maintenance easements on private property will be necessary in order to ensure the proper functioning of the biogas pipeline, but would not change the zoning or conflict with agricultural uses and operations.

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))?

No Impact. There are no forests or forest resources located within the project area; therefore, the pipeline will have no impacts with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production.

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

No Impact. There are no forests or forest resources located within the project area; therefore, the project will not result in the loss of forest land or conversion of forest land to non-forest use.

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

No Impact. The project will install a biogas pipeline under existing roadways and does not anticipate changes in the existing environment which could result in conversion of Farmland or forest land to other uses.

FINDINGS

The biogas pipeline project would have **Less than Significant Impact** relating to agriculture and forest. Temporary impacts to agricultural activities may occur during construction or should maintenance of the biogas pipeline be necessary in the future. However, no crops or any portion of a crop will be removed as a result of the pipeline construction and any temporary impacts to agricultural activities would be minimized to the greatest extent possible.

2.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☒	☐

REGULATORY SETTING

The Clean Air Act (CAA) as amended in 1990 is the federal law that governs air quality. Its counterpart in California is the California Clean Air Act of 1988. These laws set standards for the quantity of pollutants that can be in the air. At the federal level, these standards are called National Ambient Air Quality Standards (NAAQS). Standards have been established for six criteria pollutants that have been linked to potential health concerns; the criteria pollutants are: carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter (PM), lead (Pb), and sulfur dioxide (SO_2).

State Regulations

Responsibility for achieving California's air quality standards, which are more stringent than federal standards, is placed on the California Air Resources Board (CARB) and local air districts, and is to be achieved through district-level air quality management plans that will be incorporated into the SIP. In California, the EPA has delegated authority to prepare SIPs to the CARB, which, in turn, has delegated that authority to individual air districts.

The CARB has traditionally established state air quality standards, maintaining oversight authority in air quality planning, developing programs for reducing emissions from motor vehicles, developing air emission inventories, collecting air quality and meteorological data, and approving state implementation plans.

Responsibilities of air districts include overseeing stationary source emissions, approving permits, maintaining emissions inventories, maintaining air quality stations, overseeing agricultural burning permits, and reviewing air quality–related sections of environmental documents required by CEQA.

AFFECTED ENVIRONMENT

The entirety of the proposed pipeline is located within the San Joaquin Valley Air Basin and is under the auspices of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

DISCUSSION

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

No Impact. The Project is consistent with the site land use and zoning; construction of an underground utility pipeline for the transmission of biogas from local dairies to the Aemetis Keyes refinery would not conflict with or obstruct implementation of any 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?

Less than Significant Impact. The California Air Resources Board (CARB) is required to designate areas of the state as attainment, non-attainment, or unclassified for any state standard. An "attainment" designation for an area signifies that pollutant concentrations do not violate the standard for that pollutant in that area. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once within a calendar year. The area air quality attainment status of Stanislaus County is shown on **Table 2**.

Table 2: NAAQS and CAAQS Attainment Status for Stanislaus County

Pollutant	Designation/Classification	
	Federal Standards	**State Standards**
Ozone – 8-Hour	No Federal Standard	Non-attainment/Severe
Ozone – 1-Hour	Non-attainment/Extreme	Non-attainment
PM_{10}	Attainment	Non-attainment
$PM_{2.5}$	Non-attainment	Non-attainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Sulfates	No Federal Standard	Attainment
Lead	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment
Sources: CARB 2020, EPA 2020		

Long Term Emissions

The proposed project would construct a transmission pipeline to carry biogas from local dairies in Stanislaus and Merced County to the Aemetis Keyes ethanol refinery facility. Biogas would be collected at each private dairy through manure collection and processing, biogas collection using a covered anaerobic lagoon digester, and then gas pressurization for transmission in the proposed pipeline. Processing and refining biogas at the Aemetis facility does generate some long term emissions; however, this operation is not a part of the proposed project and has already been approved under separate environmental documentation and local agency permits authorized by Stanislaus County and the San Joaquin Valley Unified Air Pollution Control District. Prior CEQA and Permitting approvals relevant to the gas refining process are included in Appendix A. Furthermore, collection of biogas from dairies would substantially reduce carbon dioxide, nitrous oxide, hydrogen sulfide, and methane gasses emissions from traditional diary operations. This collection process has been previously determined to result in a net reduction of emissions, specifically in terms of greenhouse gasses (see further discussion in Section 2.8). As a result, no long-term emissions are expected to be generated as a result of construction of a biogas transmission pipeline as proposed in this project.

Construction Emissions

All construction impacts to air quality would be short-term and intermittent; therefore, impacts are anticipated to be less than significant. The emission of pollutants during construction would not contribute significantly to a net increase of any criteria pollutant.

All construction activities would follow the SJVAPCD rules and would implement all appropriate air quality BMPs, including minimizing equipment idling time and use of water or similar chemical palliative to control fugitive dust. The implementation of best management practices listed in **AQ-1** and **AQ-2** would further minimize potential impacts on air quality caused during to construction. These measures provide compliance guidelines for minimizing fugitive dust to protect sensitive receptors in the vicinity. With adherence to **AQ-1** and **AQ-2** construction emissions would result in a **Less Than Significant Impact with Mitigation**.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less than Significant with Mitigation. During construction, short-term degradation of air quality is expected from the release of particulate emissions (airborne dust) generated by excavation, grading, hauling, and other activities related to construction. Emissions from construction equipment powered by gasoline and diesel engines are also anticipated and would include CO, NO_X, VOCs, directly emitted PM_{10} and $PM_{2.5}$, and toxic air contaminants (TACs) such as diesel exhaust particulate matter. Construction activities may also result in small increases in traffic congestion if lane closures on rural county-maintained roads are necessary. Additional congestion can result in an increase in vehicle hours traveled, slower vehicle speeds and therefore increased emissions. However, these additional impacts would be minor and short term during the construction and none of the affected roadways convey large volumes of traffic daily.

Construction emissions were estimated using the latest Sacramento Metropolitan Air Quality Management District's Road Construction Model (http://www.airquality.org/ceqa/, Version 8.1.0, SMAQMD 2016). Construction-related emissions for the proposed project are presented in **Table 3**. The emissions presented are based on the best information available at the time of calculations. The emissions represent the peak daily construction emissions that would be generated by construction of the proposed project.

Table 3. Construction Emissions from Construction Activity.

	CO (lbs/day)	NOx (lbs/day)	ROG (lbs/day)	SOx (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)
Grubbing/Land Clearing	0.0	0.0	0.0	0.0	5.0	1.04
Grading/Excavation	0.0	0.0	0.0	0.0	5.0	1.04
Drainage/Utilities/ Sub-Grade	0.0	0.0	0.0	0.0	5.0	1.04
Paving	0.0	0.1	0.0	0.0	0.0	0.0
Maximum daily (lbs/day)	14.9	18.4	1.7	<0.1	10.8	2.9
Project Total (tons/construction project)	0.0	0.0	0.0	0.0	0.28	0.06

SMAQMD Road Construction Model (2016)

Toxic Air Contaminants

The greatest potential for toxic air contaminant (TAC) emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading and excavation

activities. In addition, incidental amounts of toxic substances such as oils, solvents, and paints would be used during construction. These substances would comply with all applicable SJVAPCD rules for their manufacture and use. The proposed pipeline construction would have no permanent impact on sensitive receptors. Best management practices outlined in measures **AQ-1** and **AQ-2** would further minimize the potential for construction emissions related impacts. Given the above analysis, the impact is considered to be a **Less Than Significant Impact with mitigation incorporated**.

d) *Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

Less than Significant Impact. The Project site is located within an agricultural area and construction activities would not produce sufficient quantities of other emissions that could lead to odors during construction that would affect the surrounding rural residents. Emissions and odors produced at the dairies and the existing Keyes refinery facility may affect nearby residences or motorists traveling nearby; however, these existing facilities are previously permitted to perform agricultural and industrial uses respectively and those uses would not change as a result of this project. Therefore, the Project would have a **Less than Significant Impact** on emissions that could affect a substantial number of people.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following measures would be implemented as part of the Project to minimize short term construction related air quality emissions:

AQ-1: The construction contractor shall comply with the San Joaquin Valley Air Pollution Control District Rule VIII as it pertains to fugitive dust (PM10).

AQ-2: Wind Erosion Control best management practices will be implemented as follows:

- Water shall be applied on disturbed open soil by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment shall be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the Project.
- If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked “NON-POTABLE WATER – DO NOT DRINK.”
- Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.

FINDINGS

The Project would have **Less than Significant Impacts with Mitigation Incorporated** relating to air quality.

2.4 BIOLOGICAL RESOURCES

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

REGULATORY SETTING

This section describes the Federal, State, and local plans, policies, and laws that are relevant to biological resources within the Biological Study Area (BSA).

Federal Regulations

National Environmental Policy Act

NEPA provides an interdisciplinary framework for environmental planning by Federal agencies and contains action-forcing procedures to ensure that Federal agency decision makers take environmental factors into account. NEPA applies whenever a Federal agency proposes an action, grants a permit, or agrees to fund or otherwise authorize any other entity to undertake an action that could possibly affect environmental resources. Caltrans, under delegation from the FHWA, is the NEPA lead agency for this project.

Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 (16 U.S.C. section 1531 et seq.) provides for the conservation of endangered and threatened species listed pursuant to Section 4 of the Act (16 U.S.C. section 1533) and the ecosystems upon which they depend. These species and resources have been identified by United States Fish and Wildlife Services (USFWS) or National Marine Fisheries Service (NMFS).

Clean Water Act

The Clean Water Act (CWA) was enacted as an amendment to the Federal Water Pollutant Control Act of 1972, which outlined the basic structure for regulating discharges of pollutants to waters of the U.S. CWA serves as the primary Federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. CWA empowers the U.S.

Environmental Protection Agency (EPA) to set national water quality standards and effluent limitations, and includes programs addressing both point-source and non-point-source pollution. Point-source pollution originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Non-point-source pollution originates over a broader area and includes urban contaminants in storm water runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the nation's waters are unlawful unless they are specifically authorized by a permit; permit review is CWA's primary regulatory tool. This project will require a CWA Section 402 National Pollutant Discharge Elimination System (NPDES) Permit regulated by the EPA.

The United States Army Corps of Engineers (USACE) regulates discharges of dredged or fill material into waters of the U. S. These waters include wetlands and non-wetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. USACE regulatory jurisdiction pursuant to Section 404 of the CWA is founded on a connection, or nexus, between the water body in question and interstate commerce. This connection may be direct (through a tributary system linking a stream channel with traditional navigable waters used in interstate or foreign commerce) or may be indirect (through a nexus identified in USACE regulations).

The Regional Water Quality Control Board (RWQCB) has jurisdiction under Section 401 of the CWA and regulates any activity which may result in a discharge to surface waters. Typically, the areas subject to jurisdiction of the RWQCB coincide with those of USACE (i.e., waters of the U.S. including any wetlands). The RWQCB also asserts authority over "waters of the State" under waste discharge requirements pursuant to the Porter-Cologne Water Quality Control Act.

Executive Order 13112: Prevention and Control of Invasive Species
Executive Order (EO) 13112 (signed February 3, 1999) directs all Federal agencies to prevent and control introductions of invasive species in a cost-effective and environmentally sound manner. The EO and directives from the FHWA require consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

Executive Order 13186: Migratory Bird Treaty Act
EO 13186 (signed January 10, 2001) directs each Federal agency taking actions that could adversely affect migratory bird populations to work with USFWS to develop a Memorandum of Understanding that will promote the conservation of migratory bird populations. Protocols developed under the Memorandum of Understanding will include the following agency responsibilities:

- Avoid and minimize, to the maximum extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- Restore and enhance habitat of migratory birds, as practicable; and
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist Federal agencies in their efforts to comply with the Migratory Bird Treaty Act (MBTA) (50 Code of Federal Regulations [CFR] 10 and 21) and does not constitute any legal authorization to take migratory birds. Take is defined under the MBTA as "the action of or attempt to pursue, hunt, shoot, capture, collect, or kill" (50 CFR 10.12) and includes intentional take (i.e., take that is the purpose of the activity in question) and unintentional take (i.e., take that results from, but is not the purpose of, the activity in question).

State Regulations

California Environmental Quality Act
California State law created to inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities and to work to reduce these negative environmental impacts. The County of Stanislaus is the CEQA lead agency for this project.

California Endangered Species Act
The California Endangered Species Act (CESA) (California Fish and Game (CFG) Code Section 2050 et seq.) requires the CDFW to establish a list of endangered and threatened species (Section 2070) and to prohibit the incidental taking of any such listed species except as allowed by the Act (Sections 2080-2089). In addition, CESA prohibits take of candidate species (under consideration for listing).

CESA also requires the CDFW to comply with CEQA (Pub. Resources Code Section 21000 et seq.) when evaluating incidental take permit applications (CFG Code Section 2081(b) and California Code Regulations, Title 14, section 783.0 et seq.), and the potential impacts the Project or activity for which the application was submitted may have on the environment. CDFW's CEQA obligations include consultation with other public agencies which have jurisdiction over the Project or activity [California Code Regulations, Title 14, Section 783.5(d)(3)]. CDFW cannot issue an incidental take permit if issuance would jeopardize the continued existence of the species [CFG Code Section 2081(c); California Code Regulations, Title 14, Section 783.4(b)].

Section 1602: Streambed Alteration Agreement
Under CFG Code 1602, public agencies are required to notify CDFW before undertaking any project that will divert, obstruct, or change the natural flow, bed, channel, or bank of any river, stream, or lake. Preliminary notification and project review generally occurs 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 resources. These modifications are formalized in a Streambed Alteration Agreement that becomes part of the plans, specifications, and bid documents for the project.

Section 3503 and 3503.5: Bird and Raptors
CFG Code Section 3503 prohibits the destruction of bird nests and Section 3503.5 prohibits the killing of raptor species and destruction of raptor nests. Trees and shrubs are present in and adjacent to the study area and could contain nesting sites.

Section 3513: Migratory Birds
CFG Code Section 3513 prohibits the take or possession of any migratory non-game bird as designated in the MBTA or any part of such migratory non-game bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the MBTA.

AFFECTED ENVIRONMENT

Online databases from the USFWS, NMFS, California Natural Diversity Database (CNDDB), and the California Rare Plant Society (CNPS) were used to generate a list of special status species with potential off occurring in the vicinity of the Project area.

The BSA was used to generate an official species list through the Information for Planning and Consultation operated by USFWS. The NMFS official species list was through the Information for Planning and Conservation operated by USFWS. All USGS 7.5-minute quadrangles that include a portion of the project area were included in the search query to generate the CNDDB and CNPS search results.

On July 22, 2020, general biological surveys, habitat assessments, and a delineation of jurisdictional waters was conducted by Dokken Engineering biologist Scott Salembier. General biological surveys included walking meandering transects, observing vegetation communities, compiling notes on observed flora and fauna, and assessing the potential for existing habitat within the BSA to support sensitive plants and wildlife.

The BSA was defined by using a 50-foot buffer around all anticipated work areas, staging areas, and access routes for construction. The BSA is approximately 991 acres in total size.

Physical Conditions

Topography
The BSA intersects seven USGS 7 ½ Minute Quadrangles: Brush Lake, Ceres, Crows Landing, Hatch, Stevinson, Gustine, and Turlock. The Project area occurs within a single distinct topographic region of the San Joaquin Valley floor, and the elevation within the Project area ranges from approximately 50-100 feet above mean sea level. Topography in the surrounding area includes the Tuolumne River, the San Joaquin River, the Merced River, and the Jennings Secondary Treatment Facility.

Soils
The Natural Resource Conservation Service (NRCS) Custom Soil Resource Report for the Project (NRCS 2020) identifies the major soil types within the BSA as:

- Dinuba sandy loam, 0 to 1 percent slopes (22.4%)
- Dinuba sandy loam, slightly saline-alkali, 0 to 1 percent slopes (22%)
- Hilmar loamy sand, 0 to 1 percent slopes (12.9%)
- Hilmar loamy sand, 0 to 3 percent slopes (10.3%)
- Hilmar loamy sand, slightly saline-alkali, 0 to 1 percent slopes (8.3%)
- Delhi sand, 0 to 3 percent slopes (6.0%)
- Traver sandy loam, slightly saline-alkali, 0 to 1 percent slopes (2.9%)
- Delhi loamy sand, 0 to 3 percent slopes (2.6%)
- Hilmar sand, 0 to 3 percent slopes (1.9%)

The following soil types exist within the BSA as less than 1% of the total soil cover:

- Fresno sandy loam, slightly saline-alkali, 0 to 1 percent slopes (0.9%)
- Hanford sandy loam, 0 to 3 percent slopes (0.9%)
- Tujunga loamy sand, 0 to 3 percent slopes (0.9%)
- Waukena fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes (0.9%)
- Waukena loam, slightly saline-alkali, 0 to 1 percent slopes (0.9%)
- Fresno sandy loam, moderately saline-alkali, 0 to 1 percent slopes (0.7%)
- Hilmar loamy sand, poorly drained, slightly saline-alkali, 0 to 1 percent slopes (0.6%)
- Delhi sand, 3 to 8 percent slopes (0.5%)
- Fresno sandy loam, strongly saline-alkali, 0 to 1 percent slopes (0.5%)
- Fresno fine sandy loam, slightly saline-alkali, 0 to 1 percent slopes (0.5%)
- Dinuba sandy loam, shallow, slightly saline-alkali, 0 to 1 percent slopes (0.4%)
- Hilmar sand, poorly drained, 0 to 1 percent slopes (0.4%)
- Waukena fine sandy loam, moderately saline-alkali, 0 to 1 percent slopes (0.4%)
- Dinuba sandy loam, deep, 0 to 1 percent slopes (0.3%)
- Hanford fine sandy loam, 0 to 1 percent slopes (0.3%)
- Pachappa fine sandy loam, deep over hardpan, 0 to 1 percent slopes (0.3%)
- Pachappa sandy loam, 0 to 1 percent slopes (0.2%)
- Dinuba sandy loam, shallow, 0 to 1 percent slopes (0.1%)

- Fresno fine sandy loam, strongly saline-alkali, 0 to 1 percent slopes (0.1%)

Waukena fine sandy loam, strongly saline-alkali, 0 to 1 percent slopes (0.1%)

Hydrological Resources
The BSA includes 3 surface water features: a riverine canal system, Harding Drain, Highline Canal, and Hilmar Drain, which contains freshwater marsh habitat. The surface water features within the BSA have connectivity to the Tuolumne River, the San Joaquin River, and the Merced River, which do not intersect the BSA but are within the Project vicinity. Most of the Project area is within Federal Emergency Management Agency (FEMA) Zone X, designated as an area of minimal flood hazard. The southernmost part of the Project area is within FEMA Zone A, subject to inundation by the 1% annual chance flood event due to proximity to the Merced River (FEMA 2020).

Land Cover Types
The BSA is dominated by developed agricultural land. Land use within the BSA is mostly agricultural, intermixed with some rural residential centers. Dominant land cover and vegetative communities within the BSA consist of urban/barren, disturbed/ruderal, dairy farm, agricultural field, irrigation/drainage canal, and freshwater marsh (Figure 4. Waters and Vegetation Communities within the BSA).

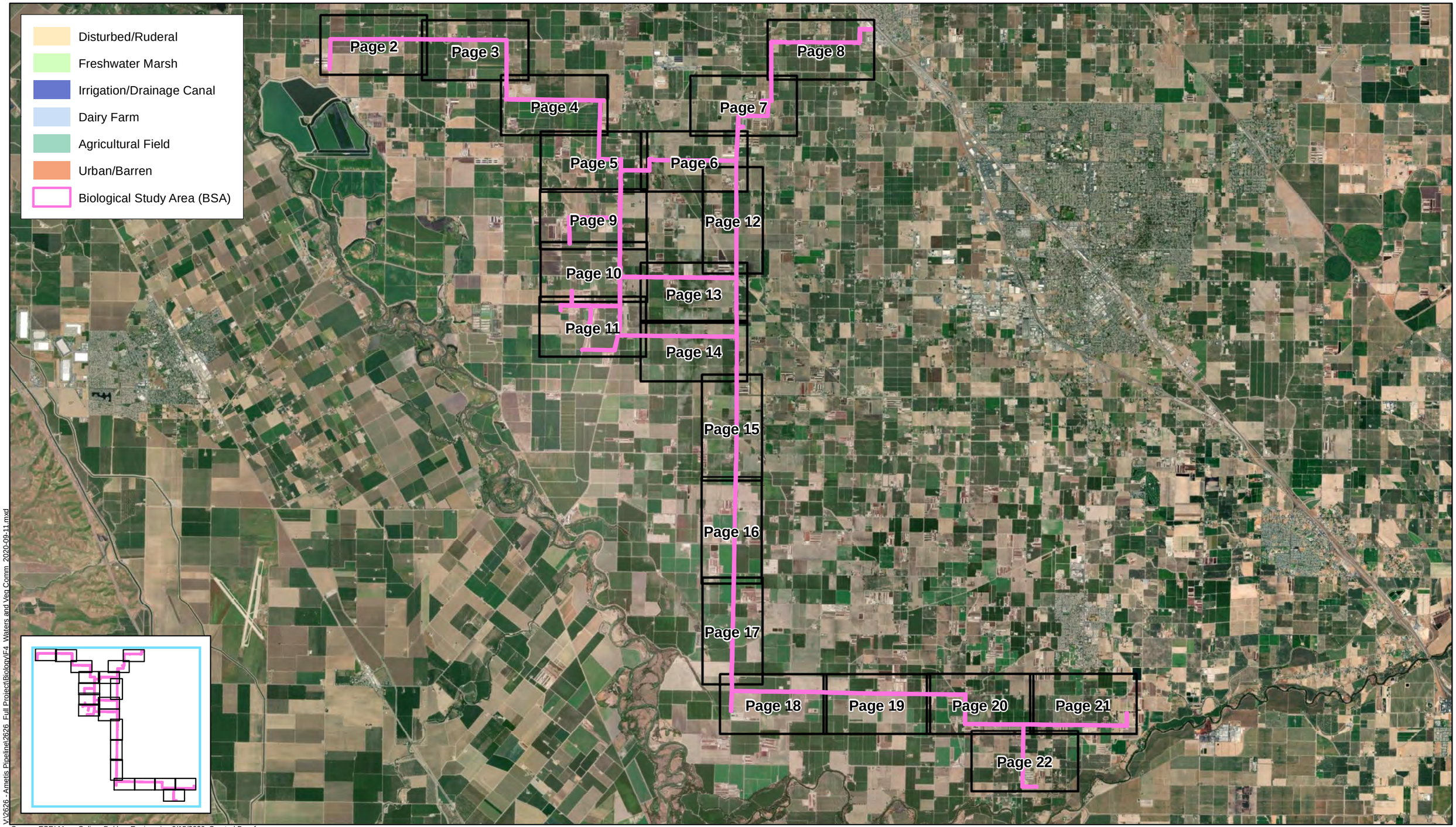
Urban/Barren
The urban/barren land cover type includes man-made infrastructure and is defined by the absence of any vegetation. Urban/barren habitat within the Project area consists of paved roadways, residential properties and associated human structures, and adjacent unvegetated areas. This community encompasses 199 acres (20%) of the BSA.

Disturbed/Ruderal
The disturbed/ruderal land cover type includes somewhat vegetated areas that have been subject to previous or ongoing disturbances. The areas include dirt access roads and the areas along paved roadsides. In these areas, vegetation may grow, but growth is often reduced by herbicide use, mowing, grading, or scraping. The disturbed/ruderal land cover type is vegetated with non-native greases and weedy forbs including: black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Russian thistle (*Salsola tragus*), and wild oat (*Avena fatua*). This community encompasses 72 acres (8%) of the BSA.

Dairy Farm
The dairy farm land cover type includes the structures and land associated with several dairy farms that occur within the BSA. Dairy farm land encompasses 96 acres (10%) of the BSA.

Agricultural Field
The agricultural field land cover type includes actively maintained agricultural land that is planted and irrigated to grow food crops. Crops identified within this land cover type in the BSA include alfalfa (*Medicago sativa*), almonds (*Prunus dulcis*), English walnuts (*Juglans regia*), field corn (*Zea mays*), and peaches (*Prunus persica*). This community encompasses 544 acres (55%) of the BSA.

Irrigation/Drainage Canal
The irrigation/drainage canal land cover type includes the human excavated and concrete lined canals which cross the Project impact area at several places within the BSA. Canals encompass 1 acre (<1%) of the BSA.



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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 8,000 ft

0 1 2 3 4 5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 1 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 2 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 3 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 4 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 5 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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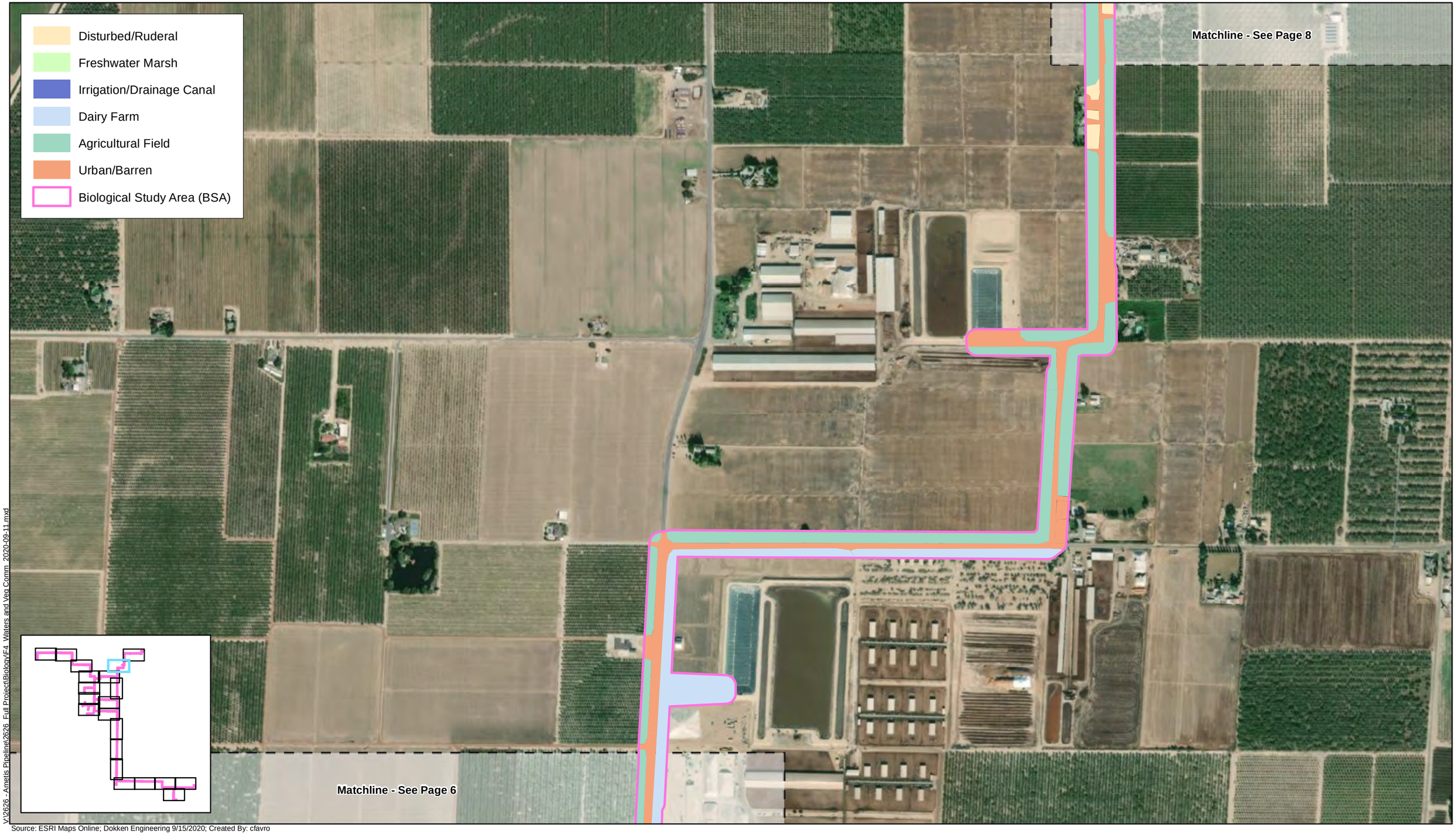
Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 6 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California



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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 7 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

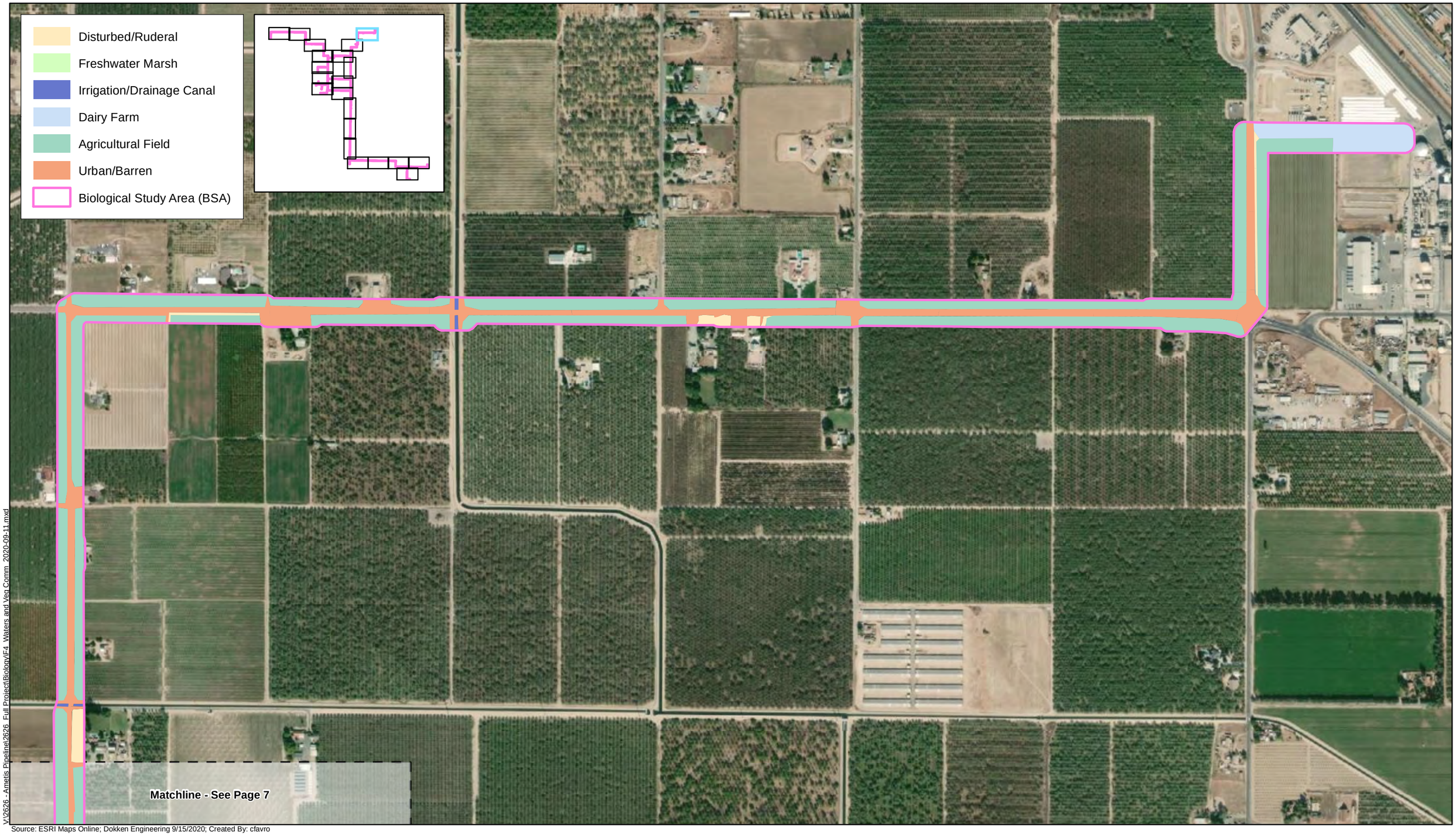

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 8 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

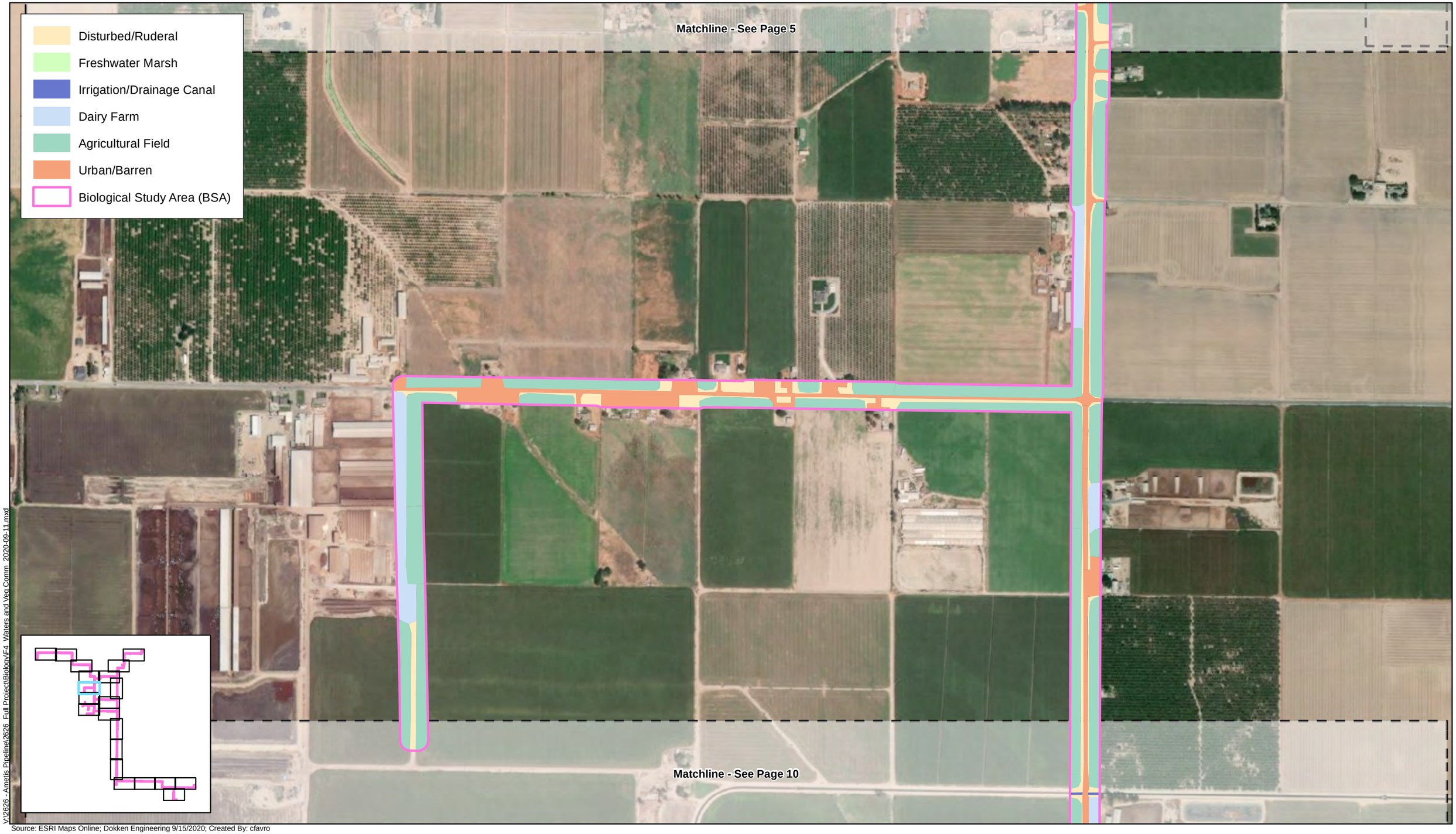

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 9 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

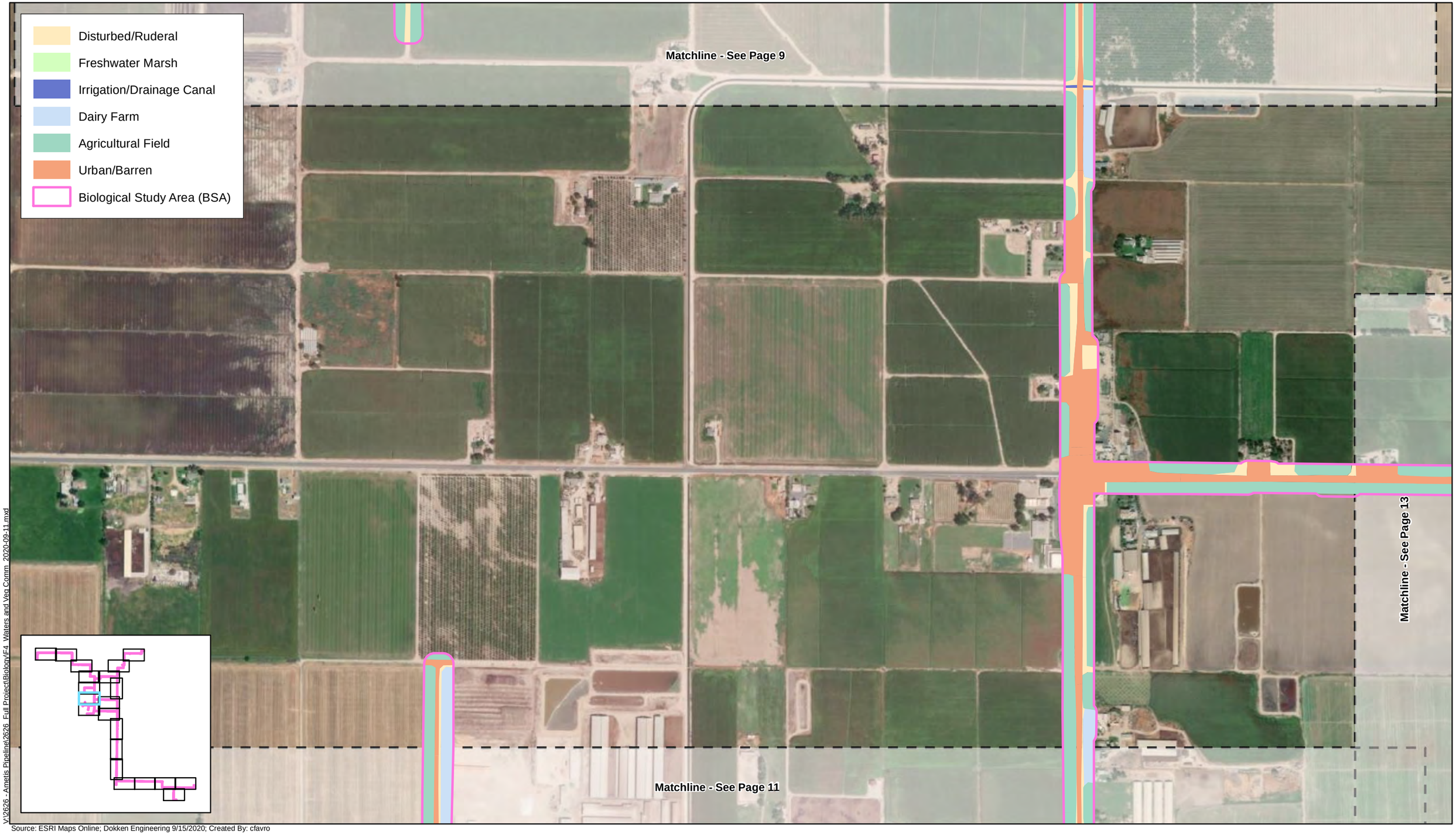

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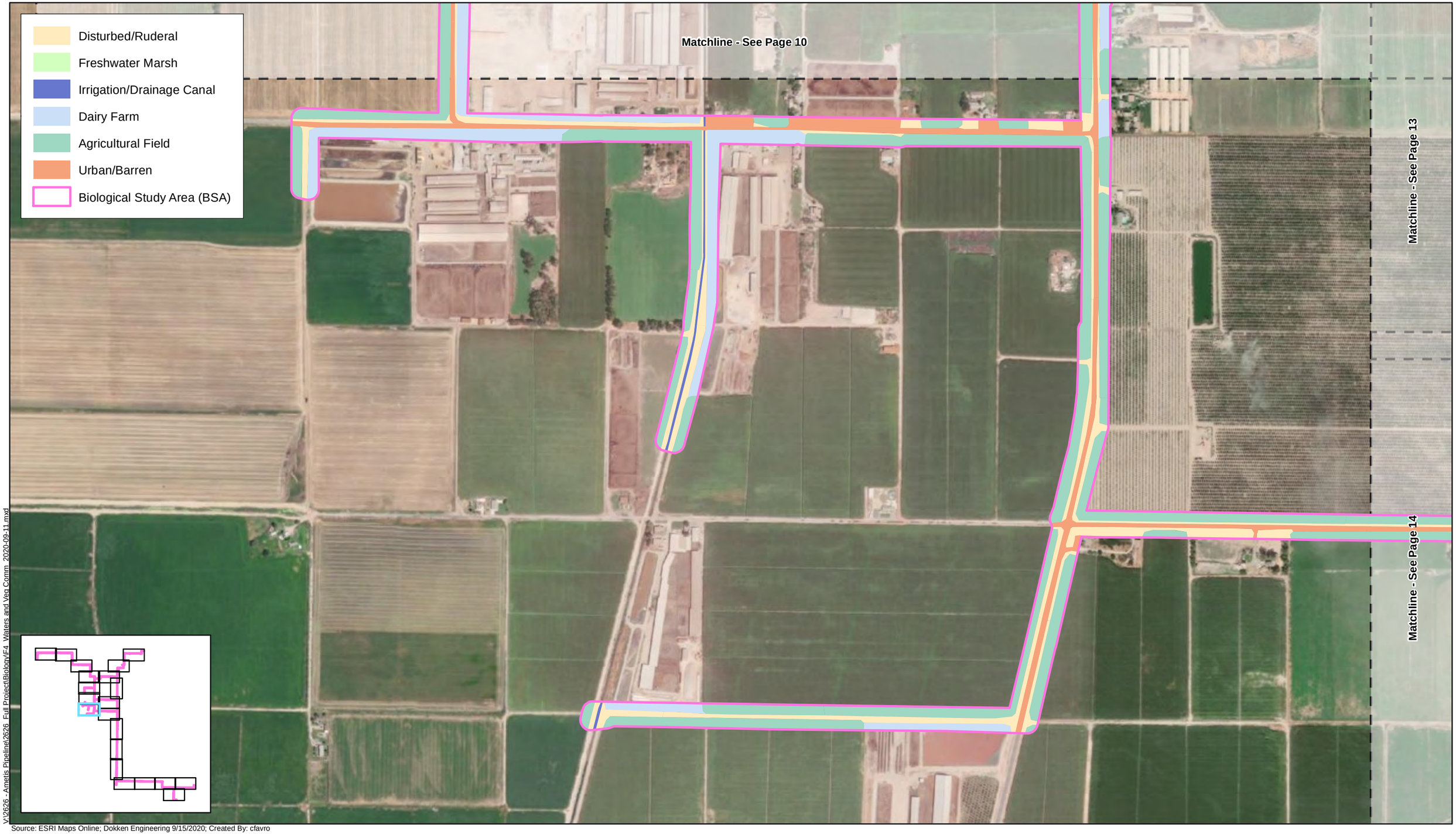
Figure 4
Waters and Vegetation Communities within the BSA
(Page 10 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California



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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 11 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 12 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Matchline - See Page 12

Matchline - See Page 10

Matchline - See Page 11

Matchline - See Page 14

Disturbed/Ruderal
Freshwater Marsh
Irrigation/Drainage Canal
Dairy Farm
Agricultural Field
Urban/Barren
Biological Study Area (BSA)

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 13 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Matchline - See Page 13

Matchline - See Page 11

Matchline - See Page 15

Disturbed/Ruderal
Freshwater Marsh
Irrigation/Drainage Canal
Dairy Farm
Agricultural Field
Urban/Barren
Biological Study Area (BSA)

Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 14 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 15 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 16 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 4
Waters and Vegetation Communities within the BSA
(Page 17 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Matchline - See Page 17

Matchline - See Page 19

Disturbed/Ruderal
Freshwater Marsh
Irrigation/Drainage Canal
Dairy Farm
Agricultural Field
Urban/Barren
Biological Study Area (BSA)

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 18 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/15/2020; Created By: cfavro

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 19 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Disturbed/Ruderal
Freshwater Marsh
Irrigation/Drainage Canal
Dairy Farm
Agricultural Field
Urban/Barren
Biological Study Area (BSA)

Matchline - See Page 19

Matchline - See Page 21

Matchline - See Page 22

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 20 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

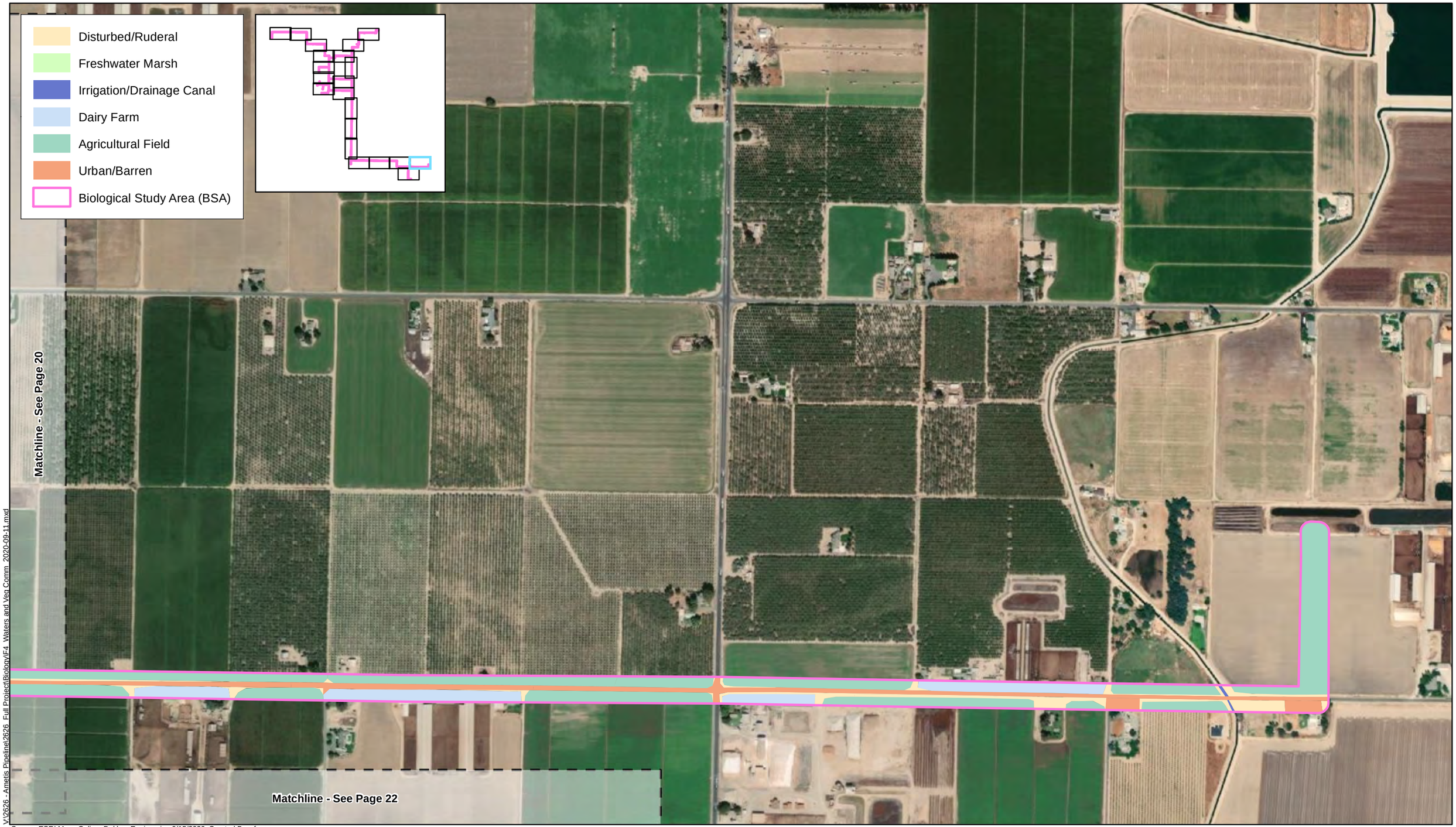

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 21 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

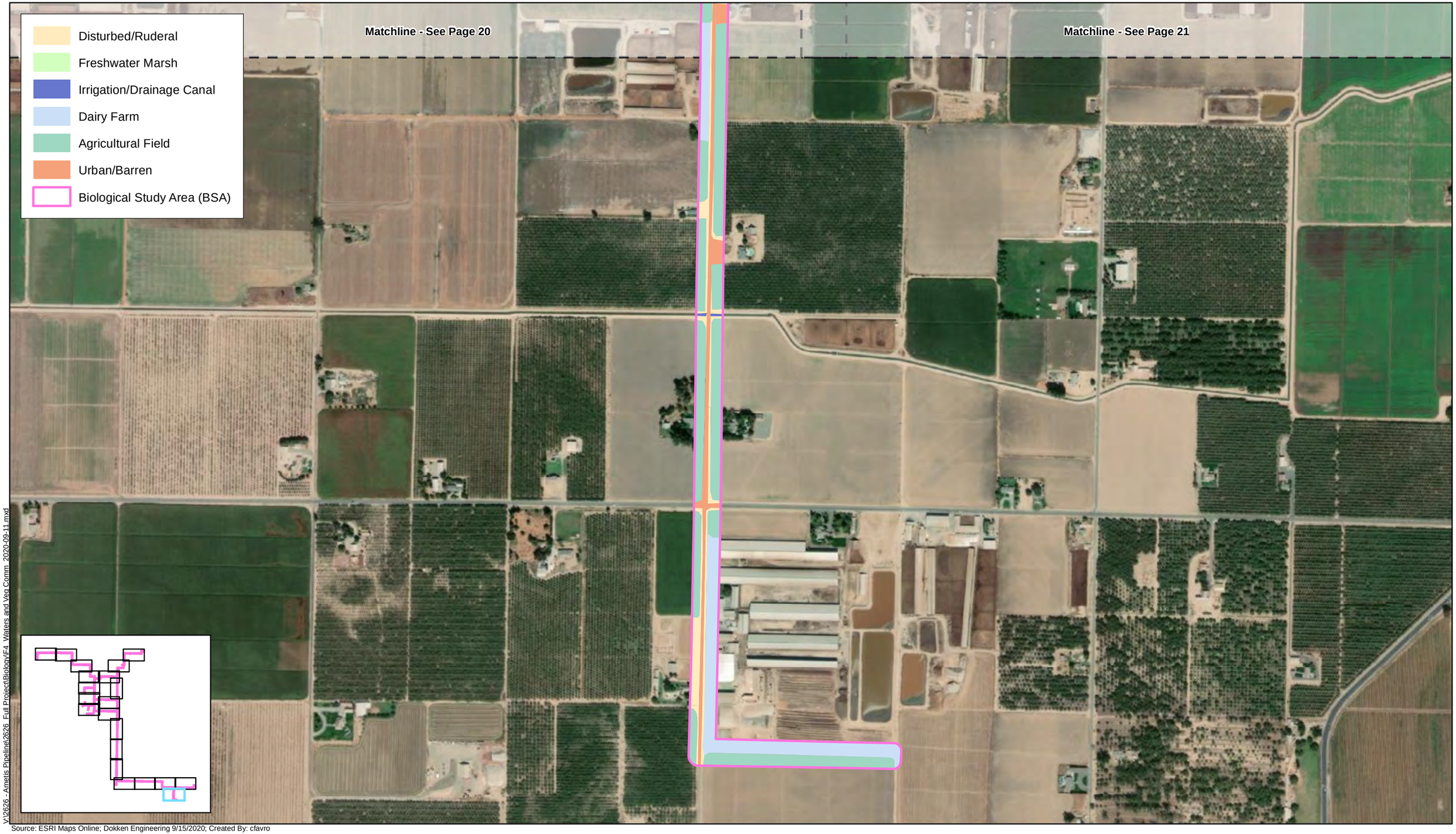

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Figure 4
Waters and Vegetation Communities within the BSA
(Page 22 of 22)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

Freshwater Marsh
The freshwater marsh vegetation community within the BSA occurs within the Hilmar Drain, which is the section of riverine canal between Central Avenue and Williams Avenue. The dominant species observed within the freshwater marsh habitat are tule (*Schoenoplectus acutus var. occidentalis*) and cattails (*Typha domingensis*). This community encompasses 6 acres (1%) of the BSA.

DISCUSSION

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

Less Than Significant Impact with Mitigation Incorporated. The following is a discussion on special status plant and animal species that were determined have potential of occurring with the Project area, potential impacts, and avoidance, minimization, and mitigation measures that when incorporated will reduce impacts to a less than significant impact.

Special-Status Plants

Preliminary literature research was conducted to determine the special status plant species with the potential to occur in the vicinity of the Project. A review of USFWS, CNDDB, and CNPS online databases concluded that 17 special status plant species had the potential to occur within the Project vicinity. Analysis of specific habitat requirements and current and historical occurrences determined that none of the special status plant species identified in the initial research were likely to occur within the BSA. No special status plant species were identified during general biological surveys conducted on July 22, 2020. The Project is not anticipated to impact special status plant species.

Special-Status Animals

Preliminary literature research was conducted to determine the special status wildlife species with the potential to occur in the vicinity of the Project. A review of CNDDB, USFWS, and NOAA Fisheries online databases concluded that 27 special status wildlife species had the potential to occur within the Project vicinity. Analysis of specific habitat requirements and current and historical occurrences determined the BSA was potentially suitable for the following species:

- Swainson's hawk (*Buteo swainsoni*)
- Tricolored blackbird (*Agelaius tricolor)*
- Western red bat (*Lasiurus blossevillii)*

Field surveys conducted July 22, 2020 by Dokken Engineering biologist Scott Salembier included a habitat assessment, and focused surveys for special status wildlife species. No special status species were observed during the field surveys, but they are still considered to have potential of occurring within the BSA based on presence of potentially suitable habitat and recently documented regional occurrences (Biological Resources Report, 2020).

Swainson's Hawk
Swainson's hawk is State listed as threatened. Swainson's hawk migrates annually from wintering areas in South America to breeding locations in northwestern Canada, the western U.S., and Mexico. In California, Swainson's hawks nest throughout the Sacramento Valley in large trees in riparian habitats and in isolated trees in or adjacent to agricultural fields. The breeding season

extends from late March through late August, with peak activity from late May through July (England et al. 1997). In the Sacramento Valley, Swainson's hawks forage in large, open agricultural habitats, including alfalfa and hay fields (CDFW 1994). The breeding population in California has declined by an estimated 91% since 1900; this decline is attributed to the loss of riparian nesting habitats and the conversion of native grassland and woodland habitats to agriculture and urban development (CDFW 1994).

Swainson's Hawk Survey Results
The BSA does contain some potentially suitable large nesting trees within and directly adjacent to the BSA. Additionally, the BSA does contain some potentially suitable foraging habitat and agricultural lands for potential foraging are adjacent to the BSA. However, the agricultural land within the BSA is largely composed of almond orchards and corn fields, which is not ideal for the species – the species prefers to forage in low-lying croplands where prey is more visible, such as alfalfa fields. During the biological surveys, large diameter potential nesting trees within the BSA were surveyed for existing raptor nest structures and no nesting structures were identified. An adult Swainson's hawk was identified flying over the Project area during this biological survey; however, the individual was not observed nesting within ¼ mile of the Project area. The most recent (2018) CNDDB occurrence of nesting Swainson's hawk is located approximately 3 miles south of the BSA, and the nearest (<0.25 miles) CNDDB occurrence of nesting Swainson's hawk is from 1988. The species is considered to have a low to moderate potential of nesting within the BSA, or within ¼ mile of the BSA, based on biological survey results, the presence of potentially suitable habitat, and recent local occurrences.

Project Impacts to Swainson's Hawk
The majority of the pipeline would be installed along existing paved roadways and farm access roads that have been previously disturbed by human development, so Project impacts to suitable Swainson's hawk foraging or nesting habitat is not anticipated. According to documented CNDDB occurrences, nesting sites have been known to occur within ¼ mile of the Project area; however, no current or historic nesting locations are known to occur within the BSA. Additionally, the Project is not anticipated to result in the removal of any potentially suitable nesting trees. Therefore, the Project does not anticipate direct impacts to Swainson's hawk nesting sites or known Swainson's hawk nesting trees. In the case that vegetation removal becomes necessary for Project activities, including the removal of any large diameter trees that could serve as nesting sites, measures **BIO-3** through **BIO-5** below would be used to avoid impacts to the Swainson's hawk.

Project construction would require equipment and the presence of the human form, which may have the potential to disturb any nesting Swainson's hawk within the vicinity of the Project. To prevent disturbance of any nesting Swainson's hawk, the Project would adhere to local noise ordinances, avoiding excess noise that could disturb the species. In addition, in the case that nesting Swainson's hawks move into the BSA, measure **BIO-5** would be implemented. With the implementation of Project avoidance and minimization measures, use of standard BMPs, the Project would not result in take of Swainson's hawk. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for Swainson's hawk would be necessary.

Swainson's Hawk Avoidance and Minimization Efforts
Measures **BIO-3** through **BIO-5** shall be implemented to avoid and minimize the potential for impacting Swainson's Hawk.

Compensatory Mitigation for Swainson's Hawk
With the scale of foraging habitat available to the species within the Project vicinity and the Project's anticipated footprint within close proximity to existing roadways, the Project is not

anticipated to directly impact the Swainson's hawk. Indirect impacts would be minimized through the use of measures **BIO-3** through **BIO-5** therefore compensatory mitigation is not proposed.

Tricolored Blackbird
Tricolored blackbird is State listed as threatened and a CDFW Species of Special Concern (SSC). Tricolored blackbirds typically live in large colonies in agricultural or upland habitats in the Central Valley area. The species feeds on insects and will nest within three to five miles of foraging habitat and often within 0.3 miles of open water. Foraging habitat includes wetlands, rangelands, pasturelands, irrigated croplands, and dairy farms. Tricolored blackbirds will nest in dense vegetation such as cattails, tule, willows, blackberry, wild rose, or tall herbs from mid-March to early August. The species experiences population decline due to agricultural development and loss of wetland habitat (Cornell University 2019).

Tricolored Blackbird Survey Results
The BSA contains irrigated croplands and dairy farms which may serve as suitable habitat for the tricolored blackbird, as well as some open fields and pastureland. In addition, irrigation canals within the BSA may provide aquatic habitat and support vegetation such as tule in which the species can nest. The species is known to nest within ¼ mile of the Project area, according to documented CNDDB occurrences. The most recent occurrence of the species is located approximately 2 miles south of the BSA and there is one occurrence that overlaps with the Project area from 2014; however, the species is considered possibly extirpated from this occurrence. The species was not observed during July 22, 2020 biological surveys. The tricolored blackbird is considered to have a high potential of occurring within the BSA, due to suitable habitat and recent local occurrences.

Project Impacts to Tricolored Blackbird
The Project would utilize the horizontal directional drilling method to install the pipeline under sensitive water features, including irrigation and drainage canals and associated freshwater marsh vegetation. With the implementation of this drilling method, the Project is not anticipated to impact important nesting and foraging habitat for the tricolored blackbird. Additionally, according to CNDDB, a documented occurrence of a colony that overlaps with the Project area in the Crows Landing Road area is considered to be extirpated as of 2014. Other occurrences reveal known nesting sites within ¼ mile of the Project area; however, no current nesting locations are known to occur within the BSA. No aquatic vegetation removal of species known to be utilized by the species, such as tule, is anticipated as a part of Project activities; therefore, the Project does not anticipate direct impacts to tricolored blackbird nesting sites. In the case that aquatic vegetation removal becomes necessary for Project activities, measure **BIO-9**, would be incorporated into the Project design to avoid impacts to the tricolored blackbird. With the implementation of Project avoidance and minimization measures and the use of standard BMPs, the Project would not result in take of tricolored blackbird. With the avoidance of take, the Project does not anticipate that a CDFW Section 2081 ITP for tricolored blackbird would be necessary.

Tricolored Blackbird Avoidance and Minimization Efforts
Measures **BIO-3** and **BIO-9** shall be implemented to minimize potential impacts to tricolored blackbird.

Compensatory Mitigation for Tricolored Blackbird
The Project would avoid impacts to foraging and nesting habitat for the tricolored blackbird and no compensatory mitigation for habitat is proposed. Additionally, no direct impacts to tricolored blackbird individuals, or known tricolored blackbird colony nesting sites are anticipated. Therefore, no compensatory mitigation is proposed.

Western Red Bat
The western red bat is not a State or Federally listed species but is a CDFW SSC. The species migrates and is found throughout North America during the warm months and Central and South America during the cold months. The western red bat roosts mostly in trees, particularly trees associated with riparian habitat. The species can also be found sometimes in orchards, roosting and foraging in fruit trees. They often inhabit rural and suburban areas and can be spotted feeding around light sources such as streetlights.

Western Red Bat Survey Results
The BSA contains some trees which could serve as roosting trees for the species, and rural areas similar to those the species is known to forage within. There are no recent CNDDB occurrences of the species; however, there is one historic (1999) occurrence located approximately 0.6 miles south of the Project area. The species was not observed during biological surveys. The species is considered to have a low to moderate potential of occurring within the BSA due to the one historical occurrence of the species and the presence of somewhat suitable habitat.

Project Impacts to Western Red Bat
The Project impact area is within close proximity to existing roadways and would be installed in a way that avoids impacts to potential habitat areas, so impacts to western red bat foraging habitat is not anticipated. According to documented CNDDB occurrences, there are no known roosting locations of the species within the Project area. Additionally, the Project is not anticipated to result in the removal of potentially suitable roosting trees; therefore, the Project is not anticipated to result in direct impacts to western red bat roosting sites. In the case that removal of potentially suitable roosting trees becomes necessary for Project activities, measures **BIO-3** and **BIO-6** through **BIO-8** would be implemented to avoid further impacts to the western red bat. With the implementation of Project avoidance and minimization measures and the use of standard BMPs, the Project would not cause direct impacts to the western red bat.

Western Red Bat Avoidance and Minimization Efforts
To avoid and minimize potential Project impacts to Swainson's hawk, measures **BIO-3** and **BIO 6** through **BIO-8** shall be implemented:

Compensatory Mitigation for Western Red Bat
With the implementation of site-specific avoidance and minimization measures **BIO-3** and **BIO-6** through **BIO-8**, direct impacts to the western red bat are not anticipated. The Project would avoid potential impacts to the western red bat; compensatory mitigation for impacts to the species is not proposed at this time.

Migratory Birds
Native birds, protected under the MBTA and similar provisions under CFG Code, have the potential to nest within the Project area. To avoid and minimize potential impacts to migratory birds, the following avoidance and minimization measures shall be implemented. With the inclusion of avoidance and minimization measure **BIO-9**, impacts to migratory birds protected under the MBTA would be minimized to the greatest extent feasible.

Conclusion
With regards to the Project's effects on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and USFWS, the implementation of Measures **BIO-3** through **BIO-9** will result in the Project having **Less than Significant Impacts with Mitigation Incorporated.**

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

Less Than Significant with Mitigation Incorporated. The following is a discussion on riparian habitat and other sensitive natural communities within Project area, potential impacts, and avoidance, minimization, and mitigation measures that when incorporated will reduce impacts to a less than significant impact.

The BSA lies within the San Joaquin Valley floristic province (Jepson eFlora 2020), a biologically diverse ecosystem that has been largely modified by agriculture. Biological surveys and a jurisdictional delineation were conducted to assess natural communities and biological resources within the BSA. No sensitive or special status plant communities were found within the BSA; however, jurisdictional waters were found and mapped within the BSA during field surveys. Habitats within the BSA have been highly disturbed by agricultural activities, invasive species, and regular human disturbance.

Potential jurisdictional waters within the BSA were assessed and potential wetland features were evaluated for presence of the following wetland indicators: hydrophytic vegetation, hydric soils and wetland hydrology. Surveys of potential jurisdictional waters were confirmed using aerial imagery and field verification, and followed the guidelines provided in the USACE *Wetland Delineation Manual* (USACE 1987), *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b). Wetlands that exhibit all three wetland indicators are considered WoUS if they are hydraulically connected to another WoUS. All WoUS are also considered WoS by the RWQCB under Section 401 of the CWA. These WoS and additional wetland and riparian areas associated with WoS can also be considered under jurisdiction of the CDFW under CFG Code Section 1600.

A jurisdictional delineation was conducted by Dokken Engineering biologist, Scott Salembier on July 22, 2020 to identify jurisdictional aquatic resources present within the BSA.

Jurisdictional Waters Survey Results

Riverine Canal System

There is an extensive riverine canal system in the Project vicinity which intersects the Project area in multiple places, including crossings on Keyes Road, West Taylor Road, East Monte Vista Road, Moffet Road, Keyes Road, Central Avenue, Crows Landing Road, and Ruble Road. The canals are identified on USGS Topographic Maps as Lower Lateral No. 2 ½, Lower Lateral No. 3, Lower Lateral No. 4, Lateral No. 4 ½, Lateral No. 5, Lateral No. 5 ½, Lateral No. 6, Lateral No. 7, and Lateral No. 8 (USGS 2009). This system is composed of human excavated, concrete lined channels that branch off into much of the agricultural land within the area and functions for irrigation and drainage. The channels are largely unvegetated and pass under roadways via culverts. Much of the canal system is intermittently watered; however, permanent flowing water exists in parts of the system.

This riverine canal system was determined to be a jurisdictional feature. The canals are connected to one another and the entire system is hydraulically connected to the San Joaquin River (located to the west of the Project area) and Turlock Lake (located to the east of the Project area). In addition, historic aerial imagery demonstrates that many branches of the canals have been constructed in natural drainage lines coming off the San Joaquin River.

Harding Drain

The Harding Drain is the section of riverine canal that runs along West Harding Road. As a part of the riverine canal system, this feature is a jurisdictional water. This feature is discussed separately from the riverine canal system due to its status as a 303(d) impaired water body. It received this status due to the presence of pesticide and pathogens in the water. The Harding Drain was determined to be a jurisdictional feature. This surface water feature is a human excavated, concrete lined channel constructed in the line of natural drainage and connected to larger rivers outside of the Project area via the canal system (particularly the San Joaquin River). There is some emergent vegetation associated with the Harding Drain; however, the majority of this vegetation occurs outside of the Project area and as such is not discussed as a separate feature.

Highline Canal

The Highline Canal crosses the Project area on Crane Street. Like Harding Drain, it is a component of the riverine canal system in the area but is discussed separately due to its status as a 303(d) impaired water body. The Highline Canal received this status due to pesticide and sediment toxicity and is designated as warm freshwater habitat and municipal and domestic water supply. This feature is considered jurisdictional – it is visible on historic aerials and has connectivity to the Merced River. It is human excavated and concrete lined, with intermittent flow.

Hilmar Drain

For approximately 1.0 mile between Central Avenue and the western starting point of Williams Avenue, the Project area runs parallel to Hilmar Drain, a naturalized irrigation channel that contains freshwater marsh and is connected to the riverine canal system that runs through much of the Project area. The Hilmar Drain, in contrast to the rest of the riverine canal system, is heavily vegetated with freshwater marsh vegetation. The dominant aquatic vegetation of this feature is tule (*Schoenoplectus acutus var. occidentalis*). The canal (and the marsh habitat within) is directly connected to the San Joaquin River and was determined to be a jurisdictional feature, as it demonstrates wetland hydraulic connections, hydrophytic vegetation, and hydric soils.

Impacts to Jurisdictional Waters

The Project is not anticipated to impact jurisdictional WoUS, WoS, and CDFW jurisdictional habitats. The pipeline is planned to cross underneath jurisdictional waters in 24 different locations; however, impacts to these waters would be avoided by utilizing horizontal directional drilling. The pipeline would be installed approximately 20 feet below any waters, thus avoiding impacts to these features. By installing the pipeline via directional drilling, especially under sensitive resources such as jurisdictional waters, the Project footprint would be minimized, and temporary or permanent alteration of jurisdictional waters would not occur.

Avoidance and Minimization Efforts for Jurisdictional Waters

Direct impacts to existing water features and WoUS and WoS would be avoided through the design and construction process. Measures **BIO-1** and **BIO-2** would further minimize impacts to water features and water quality by providing best management practices during construction associated with stormwater quality.

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?*

Less than Significant with Mitigation Incorporated. As discussed in section “b” above, the project would avoid direct impacts to WoUS and WoS including wetland features. Measures **BIO-**

1 and **BIO-2** are included to protect water quality during construction and would also apply for this section.

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?

No Impact. The project are is predominantly agricultural uses. While this land use can be used for wildlife migration, it is already separated by County maintained roadways. Construction of the proposed biogas pipeline underground would have **No Impact** on the project area in terms of its potential for use as migratory wildlife corridors.

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

No Impact. There are no local policies or ordinances that protect biological resources in Stanislaus County; therefore, the Project will have **No Impact** with regards to conflict with any local policies or ordinances.

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?

No Impact. There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans within the Project area; therefore, the Project will have **No Impact** or conflict with any habitat conservation plan.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The following avoidance, minimization, and mitigation measures along with Best Management Practices have been incorporated into the Project design to minimize impacts to Special Status Species and natural communities to the greatest extent practicable:

BIO-1: Construction specifications will include the following BMPs, where applicable, to reduce erosion during construction:

- Implementation of the Project shall require approval of a site-specific SWPPP or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques;
- Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control;
- Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities;
- Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed.
- Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures;

- The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.

BIO-2: To conform to water quality requirements, the Project must implement the following:

- Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from irrigation and drainage canals within the BSA. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan;
- Construction equipment shall not be operated in flowing water; if necessary, equipment buckets and arms may be used within flowing water.
- Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to WoUS and WoS;
- Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters;
- Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and,
- Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.

BIO-3: Construction personnel must receive environmental awareness training. Awareness training shall be given by the Project biologist(s) who have experience in the natural history of species that may occur within the Project area. The training will cover protocol for, identification of, and natural history of the special status species that have the potential to occur within the Project area (such as Swainson's hawk, tricolored blackbird, and western red bat).

BIO-4: If vegetation removal is necessary for Project activities, removal of large diameter trees will be avoided to the greatest extent practicable. Any large diameter trees that cannot be protected within the Project impact area shall be removed outside of the Swainson's hawk nesting season (February 1st – August 31st), one year prior to construction.

BIO-5: If vegetation removal is necessary for Project activities and Swainson's hawk nests are discovered within ¼ mile of the Project area, a 300-foot no-work buffer will be installed around the nest using ESA fencing and the Project biologist will monitor the nest until it is determined that the young have fledged. Additional appropriate protective measures may be developed in coordination with CDFW.

BIO-6: If tree removal is required, prior to tree removal the Project biologist will conduct surveys to determine if the trees designated for removal are potentially suitable bat habitat. Potential "bat habitat trees" typically are mature trees with features such as open cavities, crevices, or loose bark.

BIO-7: If tree removal is required, removal of trees determined to be potentially suitable for bats must be removed between September 1st and March 31st, outside of the bat maternity season (April 1st –August 31st). Additional specific tree removal procedures (including potential exclusions, two step tree removal, removal of bark etc.) will be determined on a case by case basis by the Project biologist. Potential bat habitat trees not requiring removal will be protected in place with ESA fencing. If surveys for "bat habitat trees"

reveal large establish maternity colonies and impacts to these colonies cannot be avoided, coordination will occur with CDFW to determine the best possible course of action.

BIO-8: If removal of trees that are potentially suitable bat habitat is required, a biologist will monitor the removal of all potentially suitable bat habitat trees. Additionally, a biologist will inspect downed trees, identified as potentially suitable, for signs of bats prior to the trees being removed offsite. If a bat is discovered in downed vegetation, the bat(s) will be taken to a wildlife rehabilitation center.

BIO-9: Vegetation removal or earthwork shall be minimized during the nesting season (February 1st – August 31st). If vegetation removal is required during the nesting season (February 1st – August 31st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist will be removed by the contractor.

A minimum 100-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.

FINDINGS

The Project would have **Less Than Significant Impacts with Mitigation Incorporated** relating to biological resources.

2.5 CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

REGULATORY SETTING

CEQA established statutory requirements for establishing the significance of historical resources in Public Resources Code (PRC) Section 21084.1. The CEQA Guidelines (Section 10564.5[c]) also require consideration of potential Project impacts to "unique" archaeological sites that do not qualify as historical resources. The statutory requirements for unique archaeological sites that do not qualify as historical resources are established in PRC Section 21083.2. These two PRC sections operate independently to ensure that significant potential effects on historical and archaeological resources are considered as part of a Project's environmental analysis. Historical resources, as defined in Section 15064.5 as defined in the CEQA regulations, include 1) cultural resources listed in or eligible for listing in the California Register of Historical Resources (California Register); 2) cultural resources included in a local register of historical resources; 3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in one of several historic themes important to California history and development.

Under CEQA, a Project may have a significant effect on the environment if the Project could result in a substantial adverse change in the significance of a historical resource, meaning the physical demolition, destruction, relocation, or alteration of the resource would be materially impaired. This would include any action that would demolish or adversely alter the physical characteristics of an historical resource that convey its historic significance and qualify it for inclusion in the California Register or in a local register or survey that meets the requirements of PRC Section 5020.1(l) and 5024.1(g). PRC Section 5024 also requires state agencies to identify and protect sate-owned resources that meet National Register of Historic Place (National Register) listing criteria. Sections 5024(f) and 5024.5 require state agencies to provide notice to and consult with the State Historic Preservation Officer (SHPO) before altering, transferring, relocation, or demolishing state-owned historical resources that are listed on or are eligible for inclusion in the National Register or are registered or eligible for registration as California Historical Landmarks.

CEQA and the CEQA Guidelines also recommend provisions be made for the accidental discovery of archaeological sites, historical resources, or Native American human remains during construction (PRC Section 21083.2(i) CCR Section 15064.5[d and f]).

AFFECTED ENVIRONMENT

A Project Area Limits (PAL) was established as the area of direct and indirect effects which encompasses an approximately 465-acre area. The PAL extends horizontally to the edge of roadway right of way to allow for construction of the pipeline and construction access along the roadway portions of the Project. The PAL also includes segments of approximately 20-foot wide linear connections onto private properties. The PAL is consistent with the project area which is

shown in Figure 3. Vertical disturbance will be approximately 5 feet deep for pipeline construction and 20 feet deep for directional drilling of the pipeline below existing facilities. Efforts to identify potential cultural resources in the PAL included background research, a search of previously recorded archaeological site records and cultural resource identification reports on file at the California Historical Resources Information System Central California Information Center (CCIC), and a pedestrian ground surface survey.

Archaeologists Michelle Campbell, Namat Hosseinion, and Amy Dunay conducted an archaeological field survey of the PAL on August 6 and 7 and October 2, 2020. The PAL was surveyed using transects oriented parallel with each of the roadways in the Project area. Periodic boot scrapes were used in areas of dense vegetation to expose the ground surface. All Project area conditions and cultural resources were fully recorded in the field notes. Exposed subsurface cuts, such as ditches, roadway cuts, and bank cuts were visually examined for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits. The pedestrian survey did not reveal any archaeological resources within the PAL.

The pedestrian survey confirmed that the terrain has been subjected to intense modification, mostly through years of agricultural activities and development associated with agriculture as well as roadway maintenance. Due to the minimal depth of ground disturbance associated with this project and the previously disturbed nature of the PAL, the potential is *low* for discovery of unknown subsurface archaeological resources during construction. Portions of the Project, however, pass through areas of high sensitivity for buried archaeological resources, as based on geomorphological studies of the Central Valley. Due to the data available for sensitivity around the Project area, portions of the Project are considered to have *high* potential for discovery of unknown subsurface archaeological resources during construction and therefore will require archaeological monitoring at these locations. Figure 5 provides the locations of high archaeological sensitivity.

DISCUSSION

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

No Impact. Dokken Engineering obtained a record search (File #10989N) for the Project area and a quarter-mile radius surrounding the Project area from the Central California Information Center (CCIC), California State University, Stanislaus, on July 9 and September 16, 2020. The search examined the Office of Historic Preservation (OHP) Historic Properties Directory, OHP Determinations of Eligibility, and California Inventory of Historical Resources. Dokken Engineering staff reviewed historical literature and maps, Caltrans Bridge Inventory listings, General Land Office (GLO), a search of the Sacred Land File at the NAHC, and soil survey maps. One cultural resource has been documented within the PAL, the Turlock Irrigation Historic District (CA-STA-426H) which was found ineligible for the National Register of Historic Places and the current project will have no impacts to any water conveyance systems within the Project area.

As there are no eligible or potentially eligible cultural resources documented or encountered within the Project area, the Project would have **No Impact** on historical resources as defined in §15064.5.

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

Less than Significant with Mitigation Incorporated. In an effort to identify archaeological resources that might be affected by the undertaking, a pedestrian survey, background research, and consultation with individuals and organizations were conducted. A record search conducted at the CCIC identified seven cultural resources within a quarter-mile radius of the PAL and no

Project Area Limits (PAL)
Archaeological Monitoring Area
Very high sensitivity
High sensitivity
Moderate sensitivity
Low sensitivity
Very low sensitivity

Page 2
Page 3
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Page 5
Page 6
Page 7

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 8,000 ft

0 1 2 3 4 5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 1 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 2 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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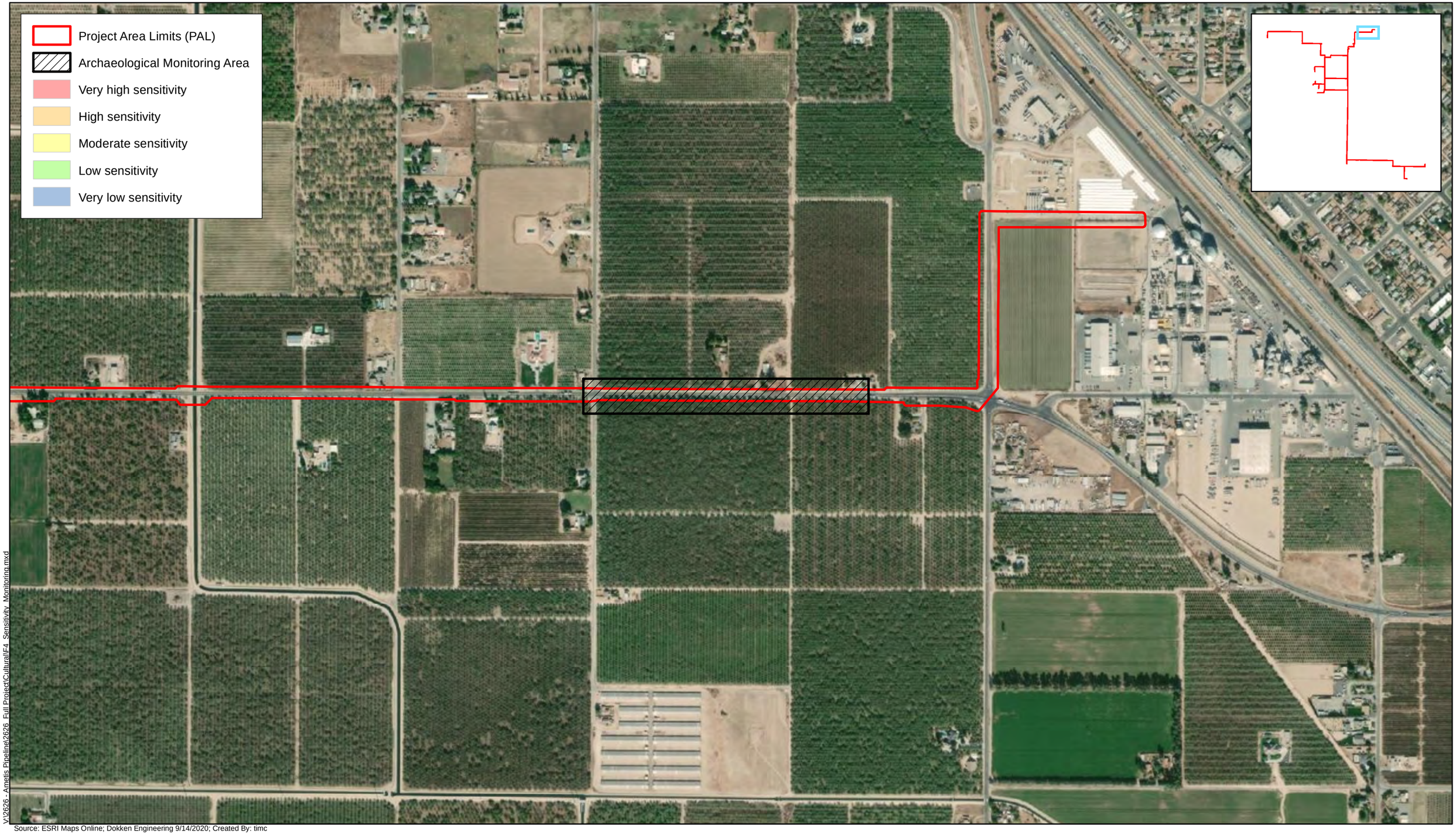
Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 3 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California



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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 4 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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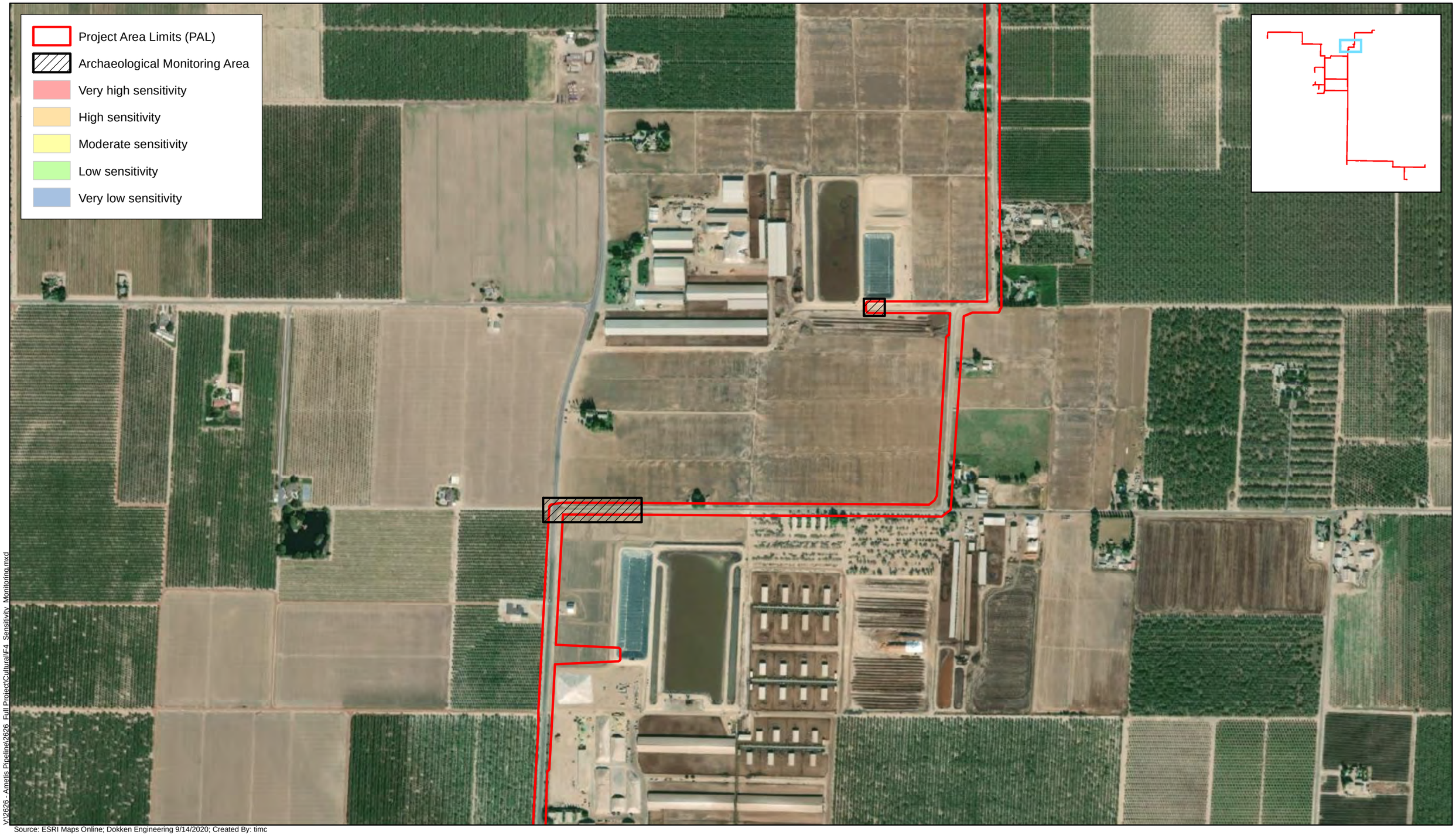
Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 5 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California



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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 6 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

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Source: ESRI Maps Online; Dokken Engineering 9/14/2020; Created By: timc

1 in = 600 ft

0 0.1 0.2 0.3 0.4 0.5 Miles

Figure 5
Subsurface Archaeological Sensitivity / Monitoring Locations
(Page 7 of 7)
Aemetis Biogas Pipeline Project
Stanislaus and Merced Counties, California

resources within the PAL. The pedestrian survey did not observe any cultural resources within the PAL.

On July 8, 2020, Dokken Engineering sent a letter and a map depicting the Project vicinity to the NAHC in West Sacramento, asking the commission to review the sacred land files for any Native American cultural resources that might be affected by the Project. The request to the NAHC seeks to identify any Native American cultural resources within or adjacent to the Project area. On July 13, 2020, Nancy Gonzalez-Lopez, Cultural Resource Analyst, informed Dokken Engineering that a review of the sacred lands was completed and returned negative results.

At this time no further archaeological study is recommended unless Project plans change to include areas not previously included in the PAL or a greater amount of ground disturbance. With the findings of the visual survey, record search, no impacts are anticipated for the Project related to archaeological resources. Monitoring is required in areas of high sensitivity for buried archaeological resources (see Figure 5). With any project, there is always the possibility that unknown cultural resources may be encountered during construction. With the implementation of Mitigation Measure **CR-1** through **CR-3** potential impacts from the Project would be less than significant with mitigation incorporated.

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

Less than Significant with Mitigation Incorporated. With any project, there is always the possibility that unmarked burials may be unearthed during construction. This impact is considered potentially significant. Implementation of Mitigation Measure **CR-3** would reduce this to a **Less than Significant Impact with Mitigation Incorporated**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

CR-1: Conduct archaeological monitoring in areas of high sensitivity for buried archaeological resources following areas designated in the Figure 5 of the Initial Study. Monitoring efforts can be reduced at the discretion of the archaeologist.

CR-2: If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. Additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.

CR-3: Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.

FINDINGS

The Project would have **Less Than Significant Impacts with Mitigation Incorporated** relating to cultural resources.

2.6 ENERGY

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒

DISCUSSION

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?

No Impact. Although the project is indirectly related to energy generation associated with processing of pre-treated biogas into a useable fuel product, the proposed pipeline project would simply result in a more efficient method of transmission of the biogas from private dairies to the Aemetis Keyes refinery facility. Construction of the pipeline would not result in any potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources. Further, by constructing a pipeline, this project would eliminate the need for truck transportation of collected biogas, substantially reducing the usage of petroleum based vehicle fuel. As a result, **No Impact** associated with energy usage is anticipated for the proposed project.

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

No Impact. The project will not conflict with or obstruct any state or local plans for renewable energy or energy efficiency.

FINDINGS

No Impacts to energy are anticipated; therefore, no avoidance, minimization, and/or mitigation measures will be required.

2.7 GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☒
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?	☐	☐	☐	☒

REGULATORY SETTING

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” Topographic and geologic features are also protected under the CEQA.

AFFECTED ENVIRONMENT

The pipeline project is located in the Great Valley Geomorphic Province and does not have any mapped or known faults within or near the project area.

DISCUSSION

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

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

ii) Strong seismic ground shaking?

iii) Seismic-related ground failure, including liquefaction?
iv) Landslides?

No Impact. The project would not expose people or structures to potential substantial adverse effects, including risk of loss, injury, or death involving rupture of a known fault, strong seismic ground shaking, seismic-related ground failure, or landslides. The project is not located within a fault zone and the nearest fault is the San Joaquin fault, a Late Quaternary fault (movement during past 700,00 years) located approximately ten miles east of the pipeline.

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

Less than Significant. The Natural Resource Conservation Service Web Soil Survey was used to identify soils within the project area. The area is a wide range of various sandy loam with very little to no slopes. A majority of the area consists of Dinuba sandy loam, slightly-alkali; Hilmar loamy sand; and Hilmar loamy sand, slightly saline-alkali with 0 to 1 percent slopes. The project would involve ground disturbance in the form of trenching for installation of the pipeline along the entirety of the project limits, however, the total amount of disturbed soil will be limited to a small area at a time and excavated soils would be backfilled after the pipeline is constructed. These minor grading impacts are not expected to result in a substantial soil erosion or loss of topsoil and the impacts associated with excavation would be **Less than Significant**.

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?

No Impact. The project will not be located on soil that is known to be unstable, or would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. There has been no history of seismic activity in Stanislaus County that would lead to this type of risk affecting the pipeline after it has been constructed.

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

No Impact. The project is not located on expansive soil.

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?

No Impact. The Project will not utilize septic tanks or an alternative waste water disposal system on the site.

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

No Impact. No findings of unique paleontological resources or sites or unique geological features were identified during the record search and pedestrian survey. The project would be constructed at depths between 3-15 feet below grade and would not be expected to impact paleontological resources should they be present in the project area.

FINDINGS

The Project would have **Less Than Significant Impacts** relating to geology and soils.

2.8 GREENHOUSE GAS EMISSIONS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☒	☐

REGULATORY SETTING

While climate change has been a concern since at least 1988, as evidenced by the establishment of the United Nations and World Meteorological Organization's Intergovernmental Panel on Climate Change (IPCC), the efforts devoted to greenhouse gas (GHG) emissions reduction and climate change research and policy have increased dramatically in recent years. These efforts are primarily concerned with the emissions of GHG related to human activity that include CO_2, CH_4, NO_X, nitrous oxide, tetrafluoromethane, hexafluoroethane, sulfur hexafluoride, HFC-23 (fluoroform), HFC-134a (s, s, s, 2 –tetrafluoroethane), and HFC-152a (difluoroethane).

In 2002, with the passage of Assembly Bill 1493 (AB 1493), California launched an innovative and pro-active approach to dealing with greenhouse gas emissions and climate change at the state level. AB 1493 requires the CARB to develop and implement regulations to reduce automobile and light truck greenhouse gas emissions. These stricter emissions standards were designed to apply to automobiles and light trucks beginning with the 2009-model year; however, in order to enact the standards California needed a waiver from the EPA. The waiver was denied by the EPA in December 2007 and efforts to overturn the decision had been unsuccessful. See *California v. Environmental Protection Agency*, 9th Cir. Jul. 25, 2008, No. 08-70011. On January 26, 2009, it was announced that EPA would reconsider their decision regarding the denial of California's waiver. On May 18, 2009, President Obama announced the enactment of a 35.5 mpg fuel economy standard for automobiles and light duty trucks which will take effect in 2012. On June 30, 2009 EPA granted California the waiver. California is expected to enforce its standards for 2009 to 2011 and then look to the federal government to implement equivalent standards for 2012 to 2016. The granting of the waiver will also allow California to implement even stronger standards in the future. The state is expected to start developing new standards for the post-2016 model years later this year.

On June 1, 2005, Governor Arnold Schwarzenegger signed Executive Order S-3-05. The goal of this Executive Order is to reduce California's GHG emissions to: 1) 2000 levels by 2010, 2) 1990 levels by the 2020 and 3) 80 percent below the 1990 levels by the year 2050. In 2006, this goal was further reinforced with the passage of Assembly Bill 32 (AB 32), the Global Warming Solutions Act of 2006. AB 32 sets the same overall GHG emissions reduction goals while further mandating that CARB create a plan, which includes market mechanisms, and implement rules to achieve "real, quantifiable, cost-effective reductions of greenhouse gases." Executive Order S-20-06 further directs state agencies to begin implementing AB 32, including the recommendations made by the state's Climate Action Team.

With Executive Order S-01-07, Governor Schwarzenegger set forth the low carbon fuel standard for California. Under this executive order, the carbon intensity of California's transportation fuels is to be reduced by at least 10 percent by 2020.

Climate change and GHG reduction is also a concern at the federal level; however, at this time, no legislation or regulations have been enacted specifically addressing GHG emissions

reductions and climate change. California, in conjunction with several environmental organizations and several other states, sued to force the EPA to regulate GHG as a pollutant under the Clean Air Act (Massachusetts vs. [EPA] et al., 549 U.S. 497 (2007). The court ruled that GHG does fit within the Clean Air Act's definition of a pollutant, and that the EPA does have the authority to regulate GHG. Despite the Supreme Court ruling, there are no promulgated federal regulations to date limiting GHG emissions. [1]

On December 7, 2009, the EPA Administrator signed two distinct findings regarding greenhouse gases under section 202(a) of the Clean Air Act:

- Endangerment Finding: The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases--carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF6)--in the atmosphere threaten the public health and welfare of current and future generations.
- Cause or Contribute Finding: The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

These findings do not themselves impose any requirements on industry or other entities. However, this action is a prerequisite to finalizing the EPA's greenhouse gas emission standards for light-duty vehicles, which were jointly by EPA and the Department of Transportation's National Highway Safety Administration on September 15, 2009.

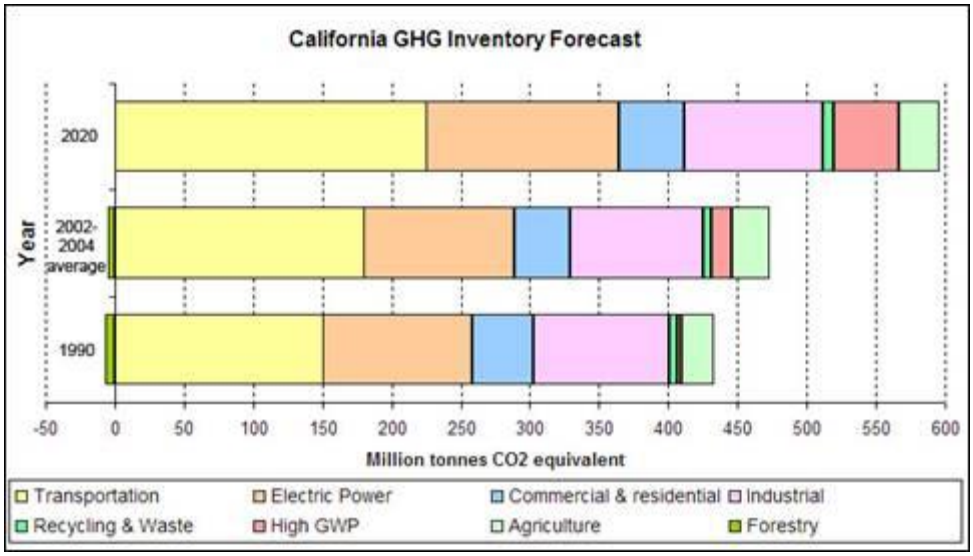

Figure 6: California Greenhouse Gas Inventory

According to Recommendations by the Association of Environmental Professionals on How to Analyze GHG Emissions and Global Climate Change in CEQA Documents (March 5, 2007), an individual project does not generate enough GHG emissions to significantly influence global climate change. Rather, global climate change is a cumulative impact. This means that a project may participate in a potential impact through its incremental contribution combined with the contributions of all other sources of GHG. In assessing cumulative impacts, it must be determined if a project's incremental effect is "cumulatively considerable." See CEQA Guidelines sections

[1] http://www.epa.gov/climatechange/endangerment.html

15064(i)(1) and 15130. To make this determination the incremental impacts of the Project must be compared with the effects of past, current, and probable future projects. To gather sufficient information on a global scale of all past, current, and future projects in order to make this determination is a difficult if not impossible task.

As part of its supporting documentation for the Draft *Climate Change Scoping Plan*, CARB recently released an updated version of the GHG inventory for California (June 26, 2008). Figure 6 is a graph from that update that shows the total GHG emissions for California for 1990, 2002-2004 average, and 2020 projected if no action is taken.

DISCUSSION

a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*

Less Than Significant. Greenhouse gas (GHG) emissions can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by on-site construction equipment, and emissions arising from traffic delays due to construction. GHG emissions produced during operations are those that result from potentially increased traffic volumes or changes in automobile speeds.

Long Term Emissions

The proposed project would construct a transmission pipeline to carry biogas from local dairies in Stanislaus and Merced County to the Aemetis Keyes refinery facility. Biogas would be collected at each private dairy through manure collection and processing, biogas collection using a covered anaerobic lagoon digester, and then gas pressurization for transmission in the proposed pipeline. The pipeline is accessory to existing dairy operations and is a permitted use within the General Agricultural or A-2 District (Stanislaus County Zoning Ordinance). Processing and refining biogas at the Aemetis facility does generate some long term emissions; however, this operation is not a part of the proposed project and has already been approved under separate environmental documentation and local agency permits authorized by Stanislaus County and the San Joaquin Valley Unified Air Pollution Control District. Prior CEQA and Permitting approvals relevant to the gas refining process are included in Appendix A. Furthermore, collection of biogas from dairies would substantially reduce carbon dioxide, nitrous oxide, hydrogen sulfide, and methane gasses emissions from traditional diary operations. This collection process has been previously determined to result in a net reduction of emissions, specifically in terms of greenhouse gasses. As a result, no long term greenhouse gas emissions are expected to be generated as a result of construction of a biogas transmission pipeline as proposed in this project.

Construction Emissions

All construction impacts to greenhouse gas emissions would be short-term and intermittent; therefore, impacts are anticipated to be less than significant. Temporary increase in greenhouse gasses would be generated by use of construction vehicles as well as minor increases in traffic congestion when construction requires lane closures on existing roadways. Neither of these changes are expected to result in any cumulatively considerable increases in greenhouse gas emissions. Traffic congestion would be minimized through the use of a Traffic Management Plan outlined in Measure **TRA-1** and discussed in Section 2.17.

The emission of GHGs during construction of the proposed Project would be negligible and therefore **Less Than Significant**.

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

Less than Significant. The project involves construction of a gas pipeline. The project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emission. Impacts would be **Less Than Significant**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Although the proposed project would not result in a significant impact requiring mitigation, the project can further minimize the potential for GHG related impacts to the environment. In addition to the Air Quality measures **AQ-1** and **AQ-2**, the following measure will also be included in the Project to minimize the GHG emissions and potential climate change impacts from the Project.

GGE-1: The contractor must comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Govt Code § 11017 (Pub Cont Code § 10231).

FINDINGS

The Project would have **Less Than Significant Impacts** relating to greenhouse gas emissions.

2.9 HAZARDS AND HAZARDOUS MATERIALS

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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 to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

REGULATORY SETTING

Hazardous materials and hazardous wastes are regulated by many state and federal laws. These include not only specific statutes governing hazardous waste, but also a variety of laws regulating air and water quality, human health and land use.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976 and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

Worker health and safety and public safety are key issues when dealing with hazardous materials that may affect human health and the environment. Proper disposal of hazardous material is vital if it is disturbed during Project construction.

AFFECTED ENVIRONMENT

EnviroStor indicates two cleanup sites within or near the project area. Both site types are military evaluation. The Bombing Target No. 8, Crows Landing located on Linwood Avenue in Turlock with a cleanup status of No Further Action as of 7/20/2010 and no contaminants were found. The Turlock Bomb Load Plant is east of the proposed pipeline between the project and the City of Turlock. Potential contaminants of concern include Explosive (UXO, MEC). The cleanup status was No Further Action as of 1/23/2015.

DISCUSSION

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?*

Less than Significant Impact with Mitigation Incorporated. The proposed biogas pipeline (approximately 32 miles in length) could present a new significant hazard to the public or the environment as biogas is considered a hazardous material and its transport through the pipeline could result in exposure to the public in the event of an accident or emergency. Tracer wires along with detectable metal tapes will be installed to identify the location of the buried pipeline in the ground. Pipe markers with important information pertaining to the biogas pipeline/system will also be in place at specific locations along the alignment of the pipeline. An emergency management plan will be created and provided to the appropriate public services and agencies.

The pipeline itself would be one of the safest parts of the facility as it would be constructed underground protecting it from accidental damage such as a vehicle collision or from deterioration due to weather and sun exposure. Potentially greater risk from the storage and processing of biogas would occur at the Aemetis Keyes refinery facility; however, development of a biogas processing facility is covered under prior CEQA and local agency approvals (see Appendix A). In addition to following all local and state requirement and best management practices for construction of this pipeline, Measures **HAZ-1** and **HAZ-2** provides additional safety measures to minimize and mitigate potential risk associated with construction and operation of the pipeline. Implementation of the measures would mitigate potentially significant impacts to a less than significant level.

The project would involve the use of heavy equipment for grading, filling, and the hauling of materials. Such equipment may require the use of common materials that have hazardous properties, e.g., petroleum based fuels. These materials would be used in accordance with all applicable laws and regulations and, if used properly, would not pose a hazard to people, animals, or plants. All refueling of construction vehicles and equipment would occur within designated areas and the use of hazardous materials within the project area would be temporary.

With any project that involves excavation, there is a possibility of encountering unknown hazardous contamination during construction. With the implementation measure **HAZ-3**, Project impacts from upset or accident conditions will be reduced to a **Less Than Significant Level with Mitigation Incorporated**.

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

Less than Significant Impact with Mitigation Incorporated. There is one school within one-quarter mile of the proposed biogas pipeline, which is Mountain View Middle School located in Stanislaus County. Construction of the pipeline is likely to occur when children are present at the school. With inclusion of Measure **HAZ-1** through **HAZ-4**, the potential for impacts associated the biogas pipeline and its construction would be mitigated to a less than significant level.

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?*

Less than Significant Impact. EnviroStor was used to find active hazardous waste sites within the vicinity of the proposed pipeline. The Bombing Target No. 8, Crows Landing located on Linwood Avenue in Turlock is adjacent to the proposed pipeline location with a status of No Further Action as of 2010. There are several LUST Cleanup Sites along roads that the pipeline would run. Those sites include the Express Stop site at 10000 Crows Landing; Farmer's Den site at 9952 Crows Landing; Melvin Mendez Land Leveling site at 10336 Crows Landing; Mountain View Feed Seed Co. site at 9942 Crows Landing; and Mel's Corner Service site at 24030 Williams Avenue in Hilmar. Each of these sites has a status of Completed - Case Closed.

*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 hazar*d *or excessive noise* for *people residing or working in the Project area?*

No Impact. The project would not result in a safety hazard for people residing or working in the project area as the pipeline does not run within the vicinity of an airport land use plan or within two miles of a public airport or public use airport.

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

No Impact. Due to the location and lack of residential density in the project area, there would no effect on emergency response or evacuation.

g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and no wildlands are adjacent to or within the project area.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

HAZ-1: The following best practices shall be implemented during construction of the pipeline to ensure the facility does not present a new significant risk of exposure to hazardous material in the form of biogas.

- The pipeline shall be airtight and must be tested to demonstrate as such prior to operation for the transport of biogas.
- The pipeline shall be fluid, pressure, and corrosion resistant.
- The pipeline shall be designed to include security valves placed upstream of the installations intended for production, storage treatment and use of biogas.
- Systems that could trigger security valves shall be installed in easy to access locations.

HAZ-2: Prepare a Health and Safety Plan prior to the start of construction which will include plans for addressing gas leaks, fires, or other failures of the pipeline. The Plan shall identify sensitive receptors and protective measures to ensure risk it minimized to the greatest extent feasible.

HAZ-3: The contractor shall prepare a Spill Prevention, Control, and Countermeasure Program (SPCCP) prior to the commencement of construction activities. The SPCCP shall include information on the nature of all hazardous materials that shall be used on-site. The SPCCP shall also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCCP.

HAZ-4: As is the case for any project that proposes excavation, the potential exists for unknown hazardous contamination to be revealed during Project construction. The construction contractor shall prepare an Unknown Hazard Procedures Manual to provide a plan for how previously unknown hazardous waste/material encountered during construction would be handled to maintain public and worker health and safety.

HAZ-5: An emergency management plan will be prepared prior to the biogas pipeline being commissioned and placed in service and will be provided to the appropriate public services and agencies and will contain the following:

- Information about the pipeline – location map, marker information, and emergency contact information.
- Type of fuel carried by the pipeline and its properties (e.g. temperature, pressure).
- Detailed procedures and protocols to follow in the event a leak is reported.
- Incident and leak response plan.
- Isolation valve location, identification, and shutdown procedure for the pipeline.

FINDINGS

The Project would have **Less Than Significant Impacts with Mitigation Incorporated** relating to hazards and hazardous materials.

2.10 HYDROLOGY AND WATER QUALITY

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

REGULATORY SETTING

Section 401 of the Clean Water Act (CWA) requires water quality certification from the State Water Resources Control Board (SWRCB) or from a Regional Water Quality Control Board (RWQCB) when the project requires a CWA Section 404 permit. Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (Corps) to discharge dredged or fill material into waters of the United States.

Along with CWA Section 401, CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES) permit for the discharge of any pollutant into waters of the United States. The federal Environmental Protection Agency has delegated administration of the NPDES program to the SWRCB and nine RWQCBs. The SWRCB and RWQCB also regulate other waste discharges to land within California through the issuance of waste discharge requirements under authority of the Porter-Cologne Water Quality Act.

The SWRCB has developed and issued a statewide NPDES permit to regulate storm water discharges from all Caltrans activities on its highways and facilities. Caltrans construction projects are regulated under the Statewide permit, and projects performed by other entities on Caltrans right-of-way (encroachments) are regulated by the SWRCB's Statewide General Construction Permit. All construction projects over 1 acre require a SWPPP to be prepared and implemented during construction. Caltrans activities less than 1 acre require a Water Pollution Control Program.

Stanislaus County has a Storm Water Management Program (Program), adopted in April of 2003, to meet the terms of the General Permit, regulating storm water discharges from small MS4s. The Program has six control measures, established by the SWRCB, to regulate the discharge of storm water. The control measures include, public education and outreach, public involvement, discharge detection and elimination program, construction site storm water runoff control, post-construction storm water management and pollution prevention/good housekeeping for municipal operations. The County is currently working on developing a Storm Water Resource Plan, in accordance with Senate Bill 985, focused on identifying and prioritizing local, multi-benefit stormwater and dry weather capture projects.

AFFECTED ENVIRONMENT

Hydrology

The Project site falls within Central Valley, Region 5, of the RWQCB. The San Joaquin River is the largest freshwater stream within the San Joaquin Valley, providing water to agricultural operations and habitat for many aquatic species. The Project is within the Middle San Joaquin-Lower Merced-Lower Stanislaus watershed (USGS 2019). The San Joaquin River is approximately 300-miles long and surface waters within the Project area are 303(d) listed for Alpha-BHC, Conductivity, DDE, DDT, Group A Pesticides, Mercury, Specific Conductivity, Temperature, Total Dissolved Solids, and Toxicity according to the most recent data from the EPA (EPA 2016b). Causes of impairments to the San Joaquin River, from the Merced River to the Tuolumne River, include pesticides, mercury, salinity, total dissolved solids, chlorides and sulfates.

Groundwater

The Project is located within the San Joaquin Valley groundwater basin and the San Joaquin Valley Delta-Mendota sub-basin. The San Joaquin Valley groundwater basin contains 9 sub-basins and lies within the San Joaquin River and Tulare Lake Hydrologic Regions covering approximately 8.88 million acres (Central Valley RWCQB 2006). Groundwater in this region is primarily used for agricultural and urban entities and accounts for approximately 48% of the groundwater used in California.

The Delta-Mendota sub-basin covers approximately 747,000 acres and the shallowest water-bearing zone is approximately 25 feet deep, located in the lower section of the Tulare Formation. Groundwater samples collected in this sub-basin from 1994 through 2000 from water supply wells indicate the presence of pesticides at concentrations greater than the applicable maximum contaminant level determined by the EPA. Furthermore, the inorganic constituents found within the Delta-Mendota sub-basin range from approximately 210 to 1,750 mg/L. In certain areas within the sub-basin these inorganic constituents, including iron, fluoride, nitrate and boron, impair the beneficial uses of the groundwater. The proposed Project does not anticipate impacting or altering any groundwater basins.

Municipal Supply

The San Joaquin River is considered a municipal and domestic water supply suitable or potentially suitable for drinking water. The Sacramento-San Joaquin Delta is one of the largest surface water delivery projects in California. The Delta provides a portion of the drinking water for 25 million Californians and provides the agricultural industry with irrigation for 4.5 million acres (Water Education Foundation 2019). The Project will not impact any water reservoirs or water recharge facilities.

Flooding

The Project area is within FEMA Zone X, designated as a low risk area with a 0.2% annual chance of flooding.

DISCUSSION

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

Less than Significant with Mitigation Incorporated. The Project will disturb greater than one acre, therefore a Construction Storm Water General Permit is required, consistent with Construction General Permit Order No. 2009-009-DWQ, issued by the SWRCB to address storm water runoff. The permit will address clearing, grading, grubbing, and disturbances to the ground, such as stockpiling, or excavation. This permit will also require that a SWPPP be prepared and implemented throughout construction with the intent of keeping all products of erosion from moving off site into receiving waters. The SWPPP includes BMPs to prevent construction pollutants from entering storm water runoff. Mitigation Measure **BIO-1,** and **BIO-2** are required to ensure the Project grading will conform to SWRCB standards and in doing so will ensure the Project impacts will be **Less than Significant with Mitigation Incorporated**.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such the Project may impede sustainable groundwater management of the basin?

No Impact. The Project would not directly or indirectly result in the construction of uses that would utilize groundwater supplies. Therefore, there would be **No Impact** related to depletion of groundwater supplies or interference with groundwater recharge.

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?

No Impact. As the Project would construct a new underground pipeline utility it would not result in changes to the existing impermeable surfaces within the Project area. The Project will not be making any alterations to the existing drainage patterns nor will it result in erosion or siltation on or off site. As there is no change in impervious surfaces, there will be no change in the amount of surface runoff that would result in flooding or exceed capacity of stormwater system. Therefore, **No Impact** would occur.

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

No Impact. The Project would not create a potential situation for inundation by seiche, tsunami, or mudflow. The Project is located in a dominantly flat landscape, is not located in proximity to a large body of water, and is not near the coastal waters; therefore, **No Impact** would occur.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable

groundwater management plan?

Less than Significant with Mitigation Incorporated. The Project may have short-term impacts associated with sediment and runoff during grading and construction. Material excavated during construction would be kept in piles of staged soil, and backfilled or re-graded and distributed within the Project site. As noted above, the Project is subject to NPDES regulations since these improvements will exceed one acre. Compliance with existing regulations and implementation of BMPs would reduce potentially significant impacts associated erosion or siltation on- or offsite to levels less than significant. Implementation of Mitigation Measures **BIO-1** and **BIO-2** would ensure that Project impacts to water quality would be **Less than Significant with Mitigation Incorporated**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Implementation of biological avoidance, minimization, and mitigation measures **BIO-1**, and **BIO-2** as described in Section 2.4 would reduce the water quality impacts to **Less Than Significant with Mitigation Incorporated**.

FINDINGS

The Project would have **Less Than Significant Impact with Mitigation Incorporated** relating to hydrology and water quality.

2.11 LAND USE AND PLANNING

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The biogas pipeline would be 32.5 miles in length running through unincorporated portions of Stanislaus and Merced Counties. Agriculture is the leading industry in Stanislaus County and this project would support infrastructure that meets the goals and objectives defined in the Agricultural Element of the Stanislaus County General Plan to strengthen the agricultural sector and conserve agricultural lands for agricultural uses. The pipeline is accessory to existing dairy operations and is a permitted use within the General Agricultural or A-2 District (Stanislaus County Zoning Ordinance). Biogas would be collected at each private dairy through manure collection and processing using a covered anaerobic lagoon digester, and then gas pressurization for transmission in the proposed pipeline. Processing and refining of the biogas will occur at the Aemetis facility in Keyes.

DISCUSSION

a) Physically divide an established community?

No Impact. The pipeline would be constructed underground and within existing road right-of-way, therefore, it would not 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?

No Impact. The project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation for the purpose of avoiding or mitigation an environmental effect.

FINDINGS

The Project would have **No Impacts** relating to land use and planning.

2.12 MINERAL RESOURCES

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

AFFECTED ENVIRONMENT

According to the Stanislaus County General Plan (2015), which relies upon the State Division of Mines and Geology report, *Mineral Land Classification of Stanislaus County, California* (Special Report 173), mineral commodities mined in the past in Stanislaus County include construction aggregate, industrial minerals, and metallic minerals. Currently, sand and gravel deposits constitute the only commercially significant extractive mineral resource in the region. The 2030 Merced County General Plan (2013) states that the County is rich in nonfuel mineral and soil resources; however, there are very few mines in operation today and currently sand and gravel is also the primary mineral resource in the area. The pipeline project will not affect mineral resources or the extraction of those resources in either County.

DISCUSSION

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?

No Impact. The project will not affect sand and gravel or any other known mineral resources.

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

No Impact. The project area does not go through lands that are listed as a locally-important mineral resource recovery site in Stanislaus or Merced Counties.

FINDINGS

The Project would have **No Impact** relating to mineral resources.

2.13 NOISE

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The Project area is within a rural area of Stanislaus County and Merced County. Background noise levels are influenced by local roads and the existing surrounding agricultural areas. Vehicle travel remains the dominant noise source at the Project site. The existing noise level ranges from 40 to 50 dB. As the Project would construct an underground pipeline, no permanent changes in noise generation are expected. The only source of noise associated with the project would be generated by construction vehicles and the discussions below only relate to construction noise.

DISCUSSION

a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less than Significant. The *Stanislaus County General Plan, Noise Element (*Stanislaus County, 2015) has established Goals and Policies relating to evaluating noise impacts due to projects. The overall noise goal for the County is to limit the exposure of the community to excessive noise levels. The *Noise Element* establishes noise standards for maximum allowable noise exposure due to transportation sources and performance standards for fixed noise sources. Transportation noise standards (60 dBA L_{dn}/CNEL) are applied at the outdoor activity area of noise sensitive land use (residential) where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures.

Fixed noise sources are not to exceed 55 dBA L_{eq} and 75 dBA L_{max} during daytime hours (7:00 A.M. to 10:00 P.M.) and 45 dBA L_{eq} and 65 dBA L_{max} during nighttime hours (10:00 P.M. to 7:00 A.M.) as measured at the property line of noise sensitive land uses.

During construction of the Project, noise from construction activities may intermittently dominate the noise environment in the immediate area of construction. Construction equipment is expected to generate noise levels ranging from 70 to 90 dB at a distance of 50 feet, and noise produced by construction equipment would be reduced over distance at a rate of about 6 dB per doubling of distance.

In addition, the County's municipal code (Chapter 10.46) states exterior noise level standards and allowances. The Project is anticipated to comply with all local and regional regulations.

While construction activities may result in some nuisance related noise for local residences, construction noise would be minimized through implementation of the local County noise ordinance, Stanislaus County Noise Control Ordinance (Chapter 10.46). The County's Municipal Code specifically prohibits the operation of any construction equipment that would cause a greater sound level than 75 decibels at or beyond the property line of any property between the hours of 7:00 p.m. to 7 a.m. as indicated in **NOI-1**. The Project will have **Less Than Significant Impact**, and the implementation of measure **NOI-1** would minimize potential construction noise impacts even further.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Less than Significant. The Project area is within a rural area of Stanislaus County with a limited number of rural residences within the Project vicinity. No significant vibration causing construction activities (such as blasting or pile driving) will be necessary for this project. As a result, the Project will have **Less Than Significant Impacts**. Additionally, the implementation of Mitigation Measure **NOI-1** would further reduce vibration and noise impacts.

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

No Impact. The Project is not located within or adjacent to an airport land use plan, or where such a plan has not been adopted, or within two miles of a public airport or public use airport; therefore, no impact would occur, and no mitigation is required.

AVOIDANCE, MINIMIZATION, AND/OR ABATEMENT MEASURES

NOI-1: To minimize the construction-generated noise, the following construction noise best management practices shall be followed:

- Do not operate construction equipment or run the equipment engines from 7:00 p.m. to 7:00 a.m. or on Sundays, with the exception that you may operate equipment within the Project limits during these hours to:
  - Service traffic control facilities
  - Service construction equipment
- Equip all internal combustion engine with the manufacturer recommended muffler.
- Do not operate an internal combustion engine on the job site without the appropriate muffler.

A variance from these requirements may be provided by request at the discretion of Stanislaus County.

FINDINGS

The Project would have **Less Than Significant Impacts** relating to noise.

2.14 POPULATION AND HOUSING

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Induce substantial 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 housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

REGULATORY SETTING

CEQA also requires the analysis of a project's potential to induce growth. CEQA guidelines, Section 15126.2(d), require that environmental documents "…discuss the ways in which the Project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment…"

DISCUSSION

a) Induce substantial 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)?

No Impact. The biogas pipeline would not induce substantial population growth in rural Stanislaus or Merced Counties.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Project would not displace any existing housing, nor would it necessitate the construction of replacement housing.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. The project would not displace any number of people, nor would it necessitate the construction of replacement housing.

FINDINGS

The Project would have **No Impacts** relating to population and housing.

2.15 PUBLIC SERVICES

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	Less Than Significant Impact	No Impact
a) Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The nearest fire stations include the Mountain View Fire Department located at 9633 Crows Landing Road and the Keyes Fire Station located at 5627 7th Street. The nearest law enforcement office is the Stanislaus County Sheriff Department located at 250 Hackett Road. The nearest schools include Keyes Elementary School located at 4400 Maud Avenue, Chatom Elementary School located at 7221 Clayton Road, and Central Valley High School located at 4033 Central Avenue. There are no public parks within 2 miles of the project area.

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 service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, and/or other public facilities?

No Impact. There are no public services located within the Project area. The Project is located in rural Stanislaus County, which consists predominantly of agricultural lands. The Project would construct a new underground utility pipeline on public roadway right-of-way and private property associated with the dairy facilities. The project would not increase the usage of public services such as fire protection, police protection, schools, or parks. Therefore, the Project will have **No Impact** to these public services.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

The Project will have no impacts relating to public services; therefore, no avoidance, minimization, and/or mitigation measures will be required.

FINDINGS

The Project would have **No Impacts** relating to public services.

2.16 RECREATION

Would the Project:	Potentially Significant Impact	Less Than Significant with Mitigation	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?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

The parks in the vicinity are located in Turlock, Patterson, and Hilmar. The pipeline would not run through or in close proximity to existing parks or recreation areas.

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 pipeline would not increase the use of any neighborhood or regional parks or other recreational facilities.

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. The biogas pipeline would not require the construction or expansion of recreational facilities due to the nature of the project.

FINDINGS

The Project would have **No Impact** relating to recreation.

2.17 TRANSPORTATION/TRAFFIC

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

AFFECTED ENVIRONMENT

According to Stanislaus County General Plan (2015), when measuring levels-of-service (LOS), Stanislaus County uses the criteria established in the *Highway Capacity Manual* published and updated by the Transportation Research Board. LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay, freedom to maneuver, volume, density, and capacity. Six levels are defined, from LOS A, as the best operating conditions, to LOS F, or the worst operating conditions. LOS E represents "at-capacity" operations. When volumes exceed capacity, stop-and-go conditions result and operations are designated as LOS F.

For roadways within Stanislaus County, the Stanislaus County General Plan (2015) states the level-of-service criteria as, "The County shall maintain LOS C or better for all County roadways and intersections, except, within the sphere of influence of a city that has adopted a lower level of service standard, the City standard shall apply. The County may adopt either a higher or lower level of service standard for roadways and intersections within urban areas such as Community Plan areas, but in no case shall the adopted LOS fall below LOS D."

DISCUSSION

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

No Impact. As the Project would construct an underground pipeline utility and there would be no change permanent changes to the existing circulation system including transit, roadway, bicycle, and pedestrian facilities. The post project condition would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.

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

No Impact. CEQA Guidelines section 15064.3 describes specific considerations for evaluating a project's transportation impacts. Generally, vehicle miles traveled is the most appropriate measure of transportation impacts. For the purposes of this section, "vehicle miles traveled" refers to the amount and distance of automobile travel attributable to a project. Subdivision (b) defines the criteria for analyzing transportation impacts. However, as the Project is an underground utility, the Project will have no change on the vehicle miles traveled. Per section 15064.3 (b)(2), projects that have no impact on vehicle miles traveled are presumed to cause a less than significant

transportation impact, and as there will be no changes in the roadway, the Project would be consistent 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)?

Less than Significant Impact with Mitigation Incorporated. As the Project would construct an underground utility facility, there would be no changes to the permanent roadway conditions. The Project would not substantially increase hazards due to a permanent design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); therefore, **No Impact** would occur, and no mitigation is required.

Construction of the pipeline may require temporary closure of travel lanes on existing County maintained roadways. Temporary lane closures may result in additional congestion or unsafe traffic conditions if they are not effectively managed. In order to minimize traffic impacts during construction, a Traffic Management Plan will be prepared and submitted to Stanislaus County for review and approval prior to starting work. The Traffic Management Plan will outline where lane closures are required and how they will be effectively managed during construction activities. Lane closures are expected to require flaggers directing single-lane two-way traffic on local County Roads. Measure TRA-1 outlines the need for a Traffic Management Plan and would ensure that traffic impacts during construction would be **Less than Significant with Mitigation Incorporated**.

d) Result in inadequate emergency access?

Less than Significant Impact. The Project would not change the existing roadway geometry and would not change emergency access in the permanent condition. During construction lane closures may result in minor increase in congestion but would not be expected to substantially limit emergency access as a single lane will remain open and most roadways in the project area have large unpaved shoulders that emergency vehicles could use to bypass the area where a lane is closed. The Traffic Management Plan required in measure TRA-1 would further minimize the potential for impacts to emergency access during construction, but project impacts are expected to be **Less than Significant**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

TRA-1: The contractor shall prepare and implement a Construction Staging and Traffic Management Plan to minimize traffic disruption during construction activities. The plan shall be made available to the public and affected stakeholders that use the bridge for access. The following elements shall be included in the plan: parking, detours/road closures, pedestrian/commercial/residential access, and media campaign.

FINDINGS

The Project would have **Less Than Significant Impact with Mitigation Incorporated** relating to Transportation and Traffic.

2.18 TRIBAL CULTURAL RESOURCES

TRIBAL CULTURAL RESOURCES:

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

REGULATORY SETTING

Effective July 1, 2015, CEQA was revised to include early consultation with California Native American tribes and consideration of tribal cultural resources (TCRs). These changes were enacted through Assembly Bill 52 (AB 52). By including TCRs early in the CEQA process, AB 52 intends to ensure that local and Tribal governments, public agencies, and project proponents would have information available, early in the project planning process, to identify and address potential adverse impacts to TCRs. CEQA now establishes that a "project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment" (PRC § 21084.2).

To help determine whether a project may have such an adverse effect, the PRC requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a proposed project. The consultation must take place prior to the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project (PRC § 21080.3.1). Consultation must consist of the lead agency providing formal notification, in writing, to the tribes that have requested notification or proposed projects within their traditionally and culturally affiliated area. AB 52 stipulates that the NAHC shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated within the project area. If the tribe wishes to engage in consultation on the project, the tribe must respond to the lead agency within 30 days of receipt of the formal notification. Once the lead agency receives the tribe's request to consult, the lead agency must then begin the consultation process within 30 days. If a lead agency determines that a project may cause a substantial adverse change to TCRs, the lead agency must consider measures to mitigate that impact. Consultation concludes when either: 1) the parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a TCR, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached (PRC § 21080.3.2). Under existing law, environmental documents must not include information about the locations of an archaeological site or sacred lands or any other information that is exempt from public disclosure pursuant to the Public Records act. TCRs are also exempt from disclosure. The term "tribal cultural resource" refers to either of the following:

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

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

AFFECTED ENVIRONMENT

A Project Area Limits (PAL) was established as the area of direct and indirect effects which encompasses an approximately 465.7 acre area. The PAL extends horizontally to the edge of roadway right of way to allow for construction of the pipeline and construction access along the roadway portions of the Project. The PAL also includes segments of 20 foot wide linear connections onto private properties. The PAL is consistent with the project area which is shown in Figure 3. Vertical disturbance will be approximately 5 feet deep for pipeline construction and 20 feet deep for directional drilling of the pipeline below existing facilities. Efforts to identify potential cultural resources in the PAL included background research, a search of previously recorded archaeological site records and cultural resource identification reports on file at the California Historical Resources Information System Central California Information Center (CCIC), and a pedestrian ground surface survey.

Archaeologists Michelle Campbell, Namat Hosseinion, and Amy Dunay conducted an archaeological field survey of the APE on August 6 and 7 and October 2, 2020. The PAL was surveyed using transect intervals no greater than 15 meters wide, oriented parallel with each of the roadways in the Project area. Periodic boot scrapes were used in areas of dense vegetation to expose the ground surface. All Project area conditions and cultural resources were fully recorded in the field notes. Exposed subsurface cuts, such as ditches, roadway cuts, and bank cuts were visually examined for the presence of archaeological resources, soil color change, and/or staining that could indicate past human activity or buried deposits. The pedestrian survey did not reveal any archaeological resources within the PAL.

The pedestrian survey confirmed that the terrain has been subjected to intense modification, mostly through years of agricultural activities and development associated with agriculture as well as roadway maintenance. Due to the minimal depth of ground disturbance associated with this project and the previously disturbed nature of the PAL, the potential is low for discovery of unknown subsurface archaeological resources during construction. Portions of the Project, however, pass through areas of high sensitivity for buried archaeological resources, as based on geomorphological studies of the Central Valley. Due to the data available for sensitivity around the Project area, portions of the Project are considered to have high potential for discovery of unknown subsurface archaeological resources during construction and therefore will require archaeological monitoring at these locations. Figure 5 provides the locations of high archaeological sensitivity.

Dokken Engineering obtained a record search (File #10989N) for the Project area and a quarter-mile radius surrounding the Project area from the Central California Information Center (CCIC), California State University, Stanislaus, on July 9, 2020. The search examined the Office of Historic Preservation (OHP) Historic Properties Directory, OHP Determinations of Eligibility, and California Inventory of Historical Resources. Dokken Engineering staff reviewed historical literature and

maps, Caltrans Bridge Inventory listings, General Land Office (GLO), a search of the Sacred Land File at the NAHC, and soil survey maps. No cultural resources have been documented within the PAL.

No Native American tribe or individuals have requested to be notified by the County for AB 52 consultation.

DISCUSSION

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

Less than Significant with Mitigation Incorporated. The Project is not anticipated to cause a substantial adverse change in the significance of a TCR listed or eligible for listing in the California Register of Historical Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k). No cultural resources were identified during the visual survey, or the record search. No impacts are anticipated for the Project related to archaeological resource; however, with any Project requiring ground disturbance, there is always the possibility that unmarked cultural resources may be unearthed during construction. This impact would be considered potentially significant. Implementation of Mitigation Measure **CR-1** through **CR-3** would result in **Less Than Significant Impact with Mitigation Incorporated**.

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

Less than Significant with Mitigation Incorporated. The Project is not anticipated to cause a substantial adverse change to a TCR pursuant to criteria set forth in subdivision (c) of Public Resources Cod Section 5024.1. No cultural resources were identified during the visual survey and record search. No impacts are anticipated for the Project related to archaeological resource; however, with any Project requiring ground disturbance, there is always the possibility that unmarked cultural resources may be unearthed during construction. This impact would be considered potentially significant. Implementation of Mitigation Measure **CR-1** through **CR-3** would result in **Less Than Significant Impact with Mitigation Incorporated**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Mitigation Measures **CR-1** through **CR-3** within Section 2.5 will be implemented for any impacts relating to Tribal Cultural Resources.

FINDINGS

The Project would have **Less Than Significant Impact with Mitigation Incorporated** relating to Tribal Cultural Resources.

2.19 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 storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐
b) Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

DISCUSSION

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less than Significant Impact. The Project would construct a new biogas pipeline to provide transmission of pre-treated biogas from local private dairies to the Aemetis Keyes refinery. This new utility would eliminate the need for transporting gas using trucks and would provide a long term, safe, and reliable gas transmission solution in the project area. Construction of the biogas pipeline would result in potentially significant impacts which are discussed throughout this Initial Study and all impacts have been reduced to a less than significant level through inclusion of appropriate avoidance, minimization, and mitigation measures.

Throughout the project area, there are numerous other underground utility systems. For example, there are two large diameter effluent trunk lines at the intersection of W Keyes Road and Jennings Road in the City of Modesto. The project is intended to be design such that it would completely avoid impacts to those existing utility facilities. Avoidance can be achieved by locating it either adjacent to existing facilities (laterally) or by locating the new pipeline at a depth where existing facilities would be avoided. Pending final design of the project; there is a potential that complete avoidance of existing facilities would not be feasible and minor relocations would be necessary. If such relocations are necessary; they would be proposed and implemented in coordination with the utility owner, as well as with the local agency with jurisdiction over the road right-of-way (Stanislaus County, Merced County, or the City of Modesto). Should utility systems require relocation, they would be relocated within the project area provided in this Initial Study and would be designed to ensure that no new environmental impacts not already discussed in this Initial Study would occur.

The Project would not include the construction of any uses that would increase demand on wastewater, stormwater facilities, electric power, natural gas, or telecommunications facilities. No new utilities would be required other than the biogas pipeline that is proposed.

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

No Impact. The Project would not result in the need for new or expanded water supplies. **No Impact** would result from development of the Project.

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?

No Impact. The Project would construct an underground pipeline utility and would not involve the construction of any wastewater-generating uses. The Project would not increase population in the Project vicinity, and there would be no additional wastewater flows as a result of Project development; therefore, the Project would not result in the need for new or expanded wastewater facilities. **No Impact** would occur.

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?

Less Than Significant. No solid waste is expected to be generated through use and operations of the proposed biogas pipeline. Solid waste may be generated during construction such as broken up asphalt; however, the amount will not substantially impact landfill capacities. This would not affect landfill capacity because the amounts would not be substantial and would occur for a short period during the construction period. Therefore, impacts associated with development of the Project would be considered **Less Than Significant** and no mitigation is required.

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

Less Than Significant. The Project would comply with federal, state, and local statutes and regulations related to solid waste; therefore, impacts associated with compliance with federal, state, and local statutes and regulations related to solid waste would be considered **Less Than Significant**.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Best Management Practices will be incorporated to locate and avoid underground utilities. Potholing at the intersection of W Keyes Road and Jennings Road and other areas may be necessary to identify utility location. Local jurisdictions will be notified prior to construction if utilities are found to be in close vicinity to the biogas pipeline construction activities.

FINDINGS

The Project would have **Less Than Significant Impacts** relating to utilities and service systems.

2.20 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	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?	☐	☐	☐	☒

AFFECTED ENVIRONMENT

Cal Fire has determined that Stanislaus and Merced Counties have no Very High Fire Hazard Severity Zones.

DISCUSSION

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project would install a new biogas pipeline connecting to numerous dairies and would not impair an adopted emergency response plan or emergency evacuation plan. An emergency management plan pertaining to the pipeline in the event of an incident or leak will be created and provided to the appropriate public services and agencies (see **HAZ-5** in Section 2.9 Hazards and Hazardous Materials).

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?

No Impact. There is very little to no slope in the project area and will not expose occupants to pollutant concentrations from 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?

Less than Significant Impact with Mitigation Incorporated. The proposed pipeline would provide transmission of a potentially flammable and explosive methane and CO_2 based biogas. This utility does increase risk of a fire starting in the event of an accident which compromises the pipeline integrity, or through integrity degradation over a long period of time. The pipeline would be designed to minimize these increased risks to the greatest extent feasible through implementation of measures **HAZ-1**; **HAZ-2**; and **HAZ-5**. These measures would ensure that construction and operation of this pipeline would not result in any significant impact as it relates to increasing the potential for fire risk. Further discussion of the measures taken to minimize the

potential for emergency related pipeline breaks are discussed in Section 2.9 Hazards and Hazardous Materials.

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?

No Impact. The project would not expose people or structures to downslope or downstream flooding or landslides as the pipeline would not change any of the existing slopes or grades adjacent to the project.

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

Measures **HAZ-1**; **HAZ-2**; and **HAZ-5** in Section 2.9 would reduce potentially significant impacts to fire risk to a less than significant level.

FINDINGS

The Project would have **Less than Significant Impact with Mitigation Incorporated** relating to wildfires.

2.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

Less Than Significant with Mitigation Incorporated. Implementation of the Project would have the potential to impact the quality of the existing environment. Potentially significant impacts have been identified related to Biological Resources (2.4), Cultural Resources (Section 2.5), Hazards and Hazardous Materials (Section 2.9), and Tribal Cultural Resources (Section 2.18). Mitigation measures have been identified related to individual resource-specific impacts. The project has the potential to have impacts to several wildlife species including, Swainson's Hawk, Tricolored Blackbird, and Western Red Bat; however, mitigation measures would reduce the level of all Project-related impacts to less than significant levels. Therefore, impacts are considered **Less than Significant with Mitigation Incorporated.**

b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?

Less than Significant Impact with Mitigation Incorporated. All potential significant impacts discussed in this Initial Study can be reduced to a less than significant level with avoidance, minimization and mitigation. Past projects in the region have been cleared through the CEQA process and potentially significant impacts from those previous projects would have already been addressed through their own environmental review process. No significant cumulative effects have been identified with incorporation of the measures provided in this Initial Study. Incorporation of these measures would ensure that project level impacts to not contribute to cumulatively significant impacts on a regional level.

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

Less than Significant with Mitigation Incorporated. The Project would not cause significant adverse effects to human beings, either directly or indirectly with mitigation incorporated. Potential impacts have been identified related to Air Quality, Biological Resources, Cultural Resources, Hazards and Hazardous Materials, Hydrology and Water Quality, Traffic and Transportation, Tribal Cultural Resources, and Wildfire. Mitigation measures have been identified related to individual resource-specific impacts. Mitigation measures would reduce the level of all Project-related impacts to less than significant levels. Therefore, impacts are considered **Less than Significant with Mitigation Incorporated.**

AVOIDANCE, MINIMIZATION, AND/OR MITIGATION MEASURES

No specific avoidance, minimization, and/or mitigation measures for cumulative impacts are needed for the Aemetis Biogas Pipeline Project. The following measures discussed in other sections in this document would ensure that cumulative impacts would be less than significant should they occur.

- Measures AQ-1 and AQ-2
- Measures BIO-1 through BIO-9
- Measures CR-1 and CR-3
- Measures HAZ-1 through HAZ-4
- Measure GGE-1
- Measure NOI-1
- Measure TRA-1

3.0 Comments and Coordination

This chapter summarizes the County's efforts to identify, address and resolve Project-related issues through early and continuing coordination.

3.1 CONSULTATION AND COORDINATION WITH PUBLIC AGENCIES

Coordination with the following agencies was initiated for the Aemetis Biogas Pipeline Project:
California Department of Fish and Wildlife (CDFW)
Native American Heritage Commission (NAHC)
United States Coast Guard (USCG)
United States Fish and Wildlife Service (USFWS)
National Marine Fisheries Service (NMFS)
County of Merced
City of Modesto

3.2 PUBLIC PARTICIPATION

The public comment period for the Project will occur from October 21, 2020 to November 21, 2020. All written comments received by the County will be incorporated into the Final Initial Study/Mitigated Negative Declaration and added in an appendix. Any additions or corrections to the IS/MND subsequent to public comments will be addressed within the final document.

4.0 List of Preparers

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Appendix A:
Prior CEQA and Permitting Approvals for Biogas Collection and Processing

A. PROJECT BACKGROUND INFORMATION

1. Project Title:
Cilion, Inc. – Ethanol Plant. District Project Number N1062063

2. Lead Agency Name and Address:
San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Avenue
Fresno CA 93726-0244

3. Contact Person:
Planning/CEQA: Daniel Barber, Ph.D. (559) 230-5800
Permit Services: Rick Dyer (209) 557-6400

4. Project Location:
The facility will be located at 4209 Jessup Road, Ceres, CA. The site is south of Ceres, near the unincorporated town of Keyes and just west of CA Highway 99 on Jessup Road. The District has verified that the proposed project location is not within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

5. Project Sponsor's Name and Address:
Cilion, Inc.
P.O. Box 1029
Goshen, CA 93327

6. Assessor's Parcel Number:
The proposed facility is on Assessors parcels numbered: 45-29-14, 34 and 35

7. General Plan Designation/Zoning:
The General Plan designations are "Industrial" and "Planned Development" respectively APN 045-026-35 is also zoned "PD 123", The General Plan Designation is "Planned Development". The proposed Ethanol Plant is consistent with both the Zoning and General Plan on all 3 APN's.

8. Project Description:

Cilion, Inc. is proposing to install a new ethanol production facility at 4209 Jessup Road, Ceres, CA. Stanislaus County has determined that the proposed ethanol plant will be located in an area zoned for an Industrial Planned Development. The Development Standards for this Planned Development require a "Staff Approval Permit" for all uses. The County typically considers staff approvals to be ministerial actions and exempt from

CEQA. Cilion has applied to the San Joaquin Valley Unified Air Pollution Control District (District) for 21 Authority to Construct (ATC) permits for the proposed equipment. Since the District is not aware of any other agency with discretionary approval authority for the project, the District is serving as the Lead Agency.

The proposed project will use fermentation and distillation processes to produce up to 55 million gallons of fuel grade ethanol per year from corn. The facility will receive corn via an enclosed conveyor from A.L. Gilbert Company, an adjoining feed manufacturer. The facility will also have multiple large storage tanks to store intermediate and final product and a loading rack to ship the product by truck. The District's evaluation of the project concludes that the potential impact on air quality will be reduced to less than significant through compliance with District Rule 2201 (New Source Review) and implementation of voluntary mitigation measures.

Background on Ethanol Plants:

The principals of Cilion Inc. built the first corn-to-ethanol plant in California two years ago in Goshen (near Visalia). In August 2005, the United States Senate & Congress passed an Energy Bill, which was signed by the President. This new law requires an increase in ethanol production that will double production and use in the United States over the next 7 years, from 4 billion to 8 billion gallons per year. Ethanol is used in California gasoline today as an oxygenate, reducing emissions and helping improve air quality. Currently ethanol demand is being met by rail cars of ethanol being transported from the Mid-West, Canada and South America to the California fuel hubs where it is then trucked to the local markets. The Keyes project will reduce the need for this rail and truck service and supplement it with direct truck service from Keyes to the Bay Area fuel blenders. The project also provides the added benefit of reducing California's reliance on imported fuel.

The United States has a goal to:
1. Reduce dependence on imported oil,
2. Reduce the trade deficit that is negatively impacted by importing oil,
3. Increase the supply of refined fuel to reduce prices to the consumer, and
4. Improve air quality and reduce greenhouse gases.

The ethanol plant in Keyes will help accomplish these goals.

Process Description:

The production of ethanol involves the conversion of starch to sugars and then the conversion of those sugars to ethanol (i.e. grain alcohol). Cilion Inc. proposes to process 571,000 tons of corn to produce 55 million gallons of fuel grade ethanol and 306,000 tons of wet distillers grain (WDG). Based on a simplified process flow diagram provided by the applicant, the ethanol production process can be broken down as follows:

Grain Receiving and Handling Operation:
Grain (corn) is received via an enclosed conveyor from the adjoining business, A.L. Gilbert, into an enclosed elevator and is stored in a 200-ton whole corn storage bin served by 2 bin vent filters. Grain is removed from the storage bin and elevated by an enclosed elevator and processed through the bin weigh system and the grain scalper/cleaner. The grain is then elevated by another enclosed elevator to a 50-ton whole corn surge bin. The 50-ton whole corn surge bin is also served by 2 bin vent filters. This equipment generates particulate matter (PM_{10}) emissions. The elevators and scalping equipment is served by a fabric filter baghouse, a Donaldson Torit Model 81 MBT 8, or equal.

Grain Grinding Operations:
Grain is transferred from the 50-ton surge bin to one of three hammermills, which grind the grain in preparation for the liquefaction process. The ground grain is conveyed via enclosed conveyors and an enclosed elevator to a 100-ton ground grain storage bin. The 100-ton ground grain storage bin is served by 2 bin vent filters. This equipment generates particulate matter (PM_{10}) emissions. The hammermills and conveyors are vented to a shared fabric filter baghouse, a Donaldson Torit Model 162 MBT 10, or equal.

Cooking and Liquefaction Process:
The ground grain is transferred from the hammermills to the slurry mixing tank and combined with dilution water/recycled streams (thin stillage, spent lees, and process steam condensate) from the cook tank and enzymes from the enzyme dosing tank to form a slurry. After processing in the slurry mixing tank, the slurry is pumped to the initial liquefaction tank where it is mixed with water and enzymes and then cooked using process steam. The slurry is then transferred to the final liquefaction tank where the liquefaction is completed. The resulting mash is then cooled prior to being sent to the fermentation process. This process generates volatile organic (VOC) emissions. The cook tank, the liquefying enzyme dosing tank, the slurry mixing tank and the 2 liquefaction tanks are fixed roof tanks that are vented to the 2-unit CO_2 aqueous wet scrubber. Water that is removed from the 2-unit CO_2 wet scrubber is sent to the scrubbed water tank and recycled to the pre-fermentation tanks. The CO_2 is vented to the atmosphere. There are minimal, unquantifiable emissions in this process due to recycled processing water flows that enter the Recycle Streams Collection Tank. The applicant is venting all of the tanks in this process to the scrubbers to ensure that all emissions are controlled.

Fermentation Process:
A portion of the mash from the final liquefaction tank is then transferred to one of the two pre-fermentation tanks to prepare a yeast culture. There it is mixed with additional enzymes to break the starches down to sugars. Active dry yeast is then added to the pre-fermentation tank. The yeast culture is then added to the main fermentation tanks to initiate the fermentation process.

The main portion of the mash is from the final liquefaction tank is transferred to one of the four main fermentation tanks. The yeast culture is then added to the main fermentation tank to start the fermentation. This process is designed to be a continuous flow process. After fermenting for approximately 48-60 hours, the resultant liquid, called beer or distilling material (DM), contains approximately 15% ethanol by weight. The beer is stored in the 1,485,058 gallon beer well (fixed roof storage tank). The fermentation process generates carbon dioxide (CO_2) and volatile organic (VOC) emissions. Each fermentation tank and the beer well storage tank are fixed roof tanks that are vented to the shared 2-unit CO_2 wet scrubber.

Distillation Process:
The DM from the beer well storage tank is distilled in a two-column distillation process that consists of a degasifying/mash stripper column, and a rectifier column. The fermented mash depleted of ethanol from the mash stripper column is called whole stillage and is pumped to the decantation operation. The top product of the distillation process (from the rectifier column) contains approximately 95% ethanol (190-proof) and 5% water. The 190-proof ethanol is sent to the day storage tank or the molecular sieve for dehydration. The molecular sieve is used to remove the remaining 5% water from the 190-proof ethanol resulting in 100% ethyl alcohol (200-proof ethanol). In this process hydrous ethanol is pumped from the distillation process or the 190-proof day storage tank, dehydrated, and sent to one of the 200-proof ethanol storage tanks.

Decantation Operation:
The whole stillage removed from the bottom of the mash stripper column is conveyed to one of five decanter centrifuges or stored in the fixed-roof whole stillage holding tank. The centrifuges concentrate the slurry to a 30% solids Wet Distillers' Grain (WDG). The WDG is stored in a partially enclosed building and shipped to local dairies as a high-value animal feed. The remaining water, which contains residual amounts of organic material, is collected in a fixed-roof thin stillage storage tank. The thin stillage is then processed in the steam-heated evaporator. The result is an organic syrup, which is then combined with the WDG, and process water, which is returned to cook tank for reuse in the slurry mixing tank.

From the storage area the WDG will be loaded into trucks via front-end loaders for delivery to farms in the local region as an animal feed. The WDG handling and load-out are not expected to be sources of PM_{10} emissions since the WDG will have a high moisture content, approximately 70%. The decantation operation generates volatile organic compound (VOC) emissions. VOC emissions from the centrifuges and thin stillage tank are vented to the CO_2 wet scrubber.

Ethanol Storage Tanks:
Ethanol from the molecular sieves is transferred to one of the fixed roof ethanol storage tanks. There are two 210,000 gallon and one 1,050,000 gallon 200-proof ethanol storage tanks. There is also one 63,000 gallon 190-proof storage tank. The storage of

ethanol generates volatile organic compound (VOC) emissions. All of the tanks will have a natural gas blanket to eliminate the emissions from the tank operation (filling and emptying the tanks). The tanks are vented to the Tank Vapor Recovery (TVR) system where condensables are returned to product storage and the non-condensable vapors are routed to the boilers or the standby flare for incineration.

Gasoline Storage Tanks with Unloading Racks:
The 200-proof ethyl alcohol is mixed with 5% denaturant (usually gasoline) to create denatured ethanol. The denaturant is unloaded from trucks via one of the two racks and stored in two 30,000-gallon storage pressure vessels. The tanks and unloading racks are vented to the (TVR) system where condensables are returned to product storage and vapors are routed to the boilers or the standby flare for incineration.

Ethanol Loading Racks:
During ethanol truck loading, the 200-proof ethyl alcohol is mixed with 5% denaturant (usually gasoline) to create denatured ethanol. This will be accomplished by blending the gasoline directly into the ethanol as the truck is being loaded at the rack. The loading of trucks generates VOC emissions as residual organic vapors are displaced. The truck loading racks will be equipped with a vapor balance system that will return all the displaced vapors from the trucks to the ethanol storage tanks.

Boilers:
The 3 natural gas-fired boilers provide process steam for the various operations and also serve as control devices for the emissions from ethanol and gasoline (denaturant) storage tanks, via the TVR system. The boilers trigger BACT and must meet NOx emissions of 9 ppmv @ 3% O_2 per Rule 4306. The applicant stated they will have no trouble meeting the 9 ppmv limit even while operating as a control device for the TVR system. This has been proven from source tests at another plant they operate with the same configuration of the boiler controlling any emissions for the TVR system (Goshen, CA). The applicant has stated that only 2 of the boilers will be in operation at any time. Conditions will be added to the permits for the 3 boilers to allow only 2 of the 3 units to operate simultaneously.

Standby Flare:
This is an air-assisted 280,000 scf/day flare that will be used for emissions control only when the boilers are not operating. The applicant has proposed that potential emissions for this unit be based upon operating 24 hr/day and 500 hr/yr. The pilot uses 2,400 scf/day of natural gas and its emissions will be based upon operating 24 hr/day, 365 day/yr.

Cooling Tower:
The 34,000 gal/min cooling tower is utilized to remove waste heat from various process streams. The unit will be an induced draft counter-flow design with a manufacturer guaranteed drift factor of 0.0015% of the designed recirculation water flow rate.

Wet Distillers' Grain (WDG) Storage and Load-out:

The WDG is conveyed to a partially enclosed storage building and loaded by front-end loader into trucks for use as animal feed. Approximately 306,000 ton/yr of WDG will be produced. Per the applicant, the WDG will remain at the pile for only a short period, usually not longer than 24 hours. Spoilage problems can develop after four or five days. The applicant has requested that permit conditions allow the on-site storage of WDG for 48 hours. This will allow for any upsets that might occur with trucking operations on weekends. The applicant states the maximum throughput of WDG is 50 ton/hr and 1,200 ton/day.

Process Emission Offsets:

Offsets are the use of Emission Reduction Credits (ERC) to mitigate emission increases of an affected pollutant from a new or modified source subject to District Rule 2201 (New and Modified Stationary Source Review). Offsets are examined on a pollutant-by-pollutant basis. Pursuant to Section 4.9 of District Rule 2201, the Pre-Project Stationary Source Potential to Emit (SSPE1) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. Since this is a new facility, there are no valid ATCs, PTOs, or ERCs at this Stationary Source. Therefore, the SSPE1 is set equal to zero for all criteria pollutants.

Pursuant to Section 4.10 of District Rule 2201, the Post-Project Stationary Source Potential to Emit (SSPE2) is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of emission reduction credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions that have occurred at the source, and which have not been used on-site. Offsets are triggered for any pollutant with a SSPE2 equal to or greater than threshold values established in section 4.5.3. Pursuant to section 4.7.2 of District Rule 2201, offsets shall be provided for all increases in Stationary Source emissions above the offset trigger levels, calculated as the difference between the SSPE2 and the offset trigger level.

As illustrated in Table 1, the proposed project triggers offsets for VOC emissions. The quantity of emissions that must be mitigated is presented in the Table 2.

Table 1. Post-Project Stationary Source Potential to Emit (SSPE2)

Pollutant	Offset Thresholds (lb/yr)	SSPE2 (lb/yr)	Offsets Triggered?
NO_x	20,000	19,189	No
SO_x	54,750	4,963	No
PM_{10}	29,200	15,341	No
CO	200,000	21,563	No
VOC	20,000	44,897	**Yes**

Table 2. Required Emission Offsets

Pollutant	SSPE2 (lb/yr)	Offset Trigger Levels (lb/yr)	Quantity of Emissions to be Mitigated (lb/yr)
VOC	44,897	20,000	24,897

As summarized in Table 3, the applicant has proposed to use ERC Certificates to offset the VOC emissions from this project. The applicant's proposal satisfies the offset requirements of District Rule 2201.

Table 3. ERC Certificates to Offset VOC Emissions From This Project.

VOC (lb)	Quarter 1	Quarter 2	Quarter 3	Quarter 4
PE	6,224	6,224	6,224	6,225
PE @1.5 offset ratio	9,336	9,336	9,336	9,338
ERC S-1956-1	9,701	9,702	9,702	9,701
Difference (will be reissued to applicant under a separate certificate number)	+365	+366	+366	+363

Area and Operational Emissions From Mobile Sources:

Mobile sources are pollution sources that move, such as trucks, bulldozers, and trains. These sources pollute the air through combustion and fuel evaporation. Pollutants resulting from combustion and fuel evaporation include oxides of nitrogen, particulate matter, hydrocarbons and carbon monoxide. Mobile sources also produce other important air pollutants, such as air toxics and greenhouse gases.

Area and operational emissions from mobile sources were characterized, using URBEMIS, for the following activities: employee vehicles (cars and light trucks), corn deliveries (Unit trains of 110 cars), grain shipments (heavy-heavy trucks), removal of wet distillers grain (heavy-heavy trucks), ethanol shipments (heavy-heavy trucks), production supplies (miscellaneous trucks), and CO_2 shipments (heavy-heavy trucks). The analysis was based on information submitted in support of Cilion's ethanol production facility located in Famoso, CA, which for the purpose of this analysis is

considered representative of the proposed project. The traffic study assumes that on a daily basis, 26 ethanol trucks will enter and exit the site, along with 68 wet distiller trucks, 26 CO_2 trucks, and 50 employee vehicles. Total area and operational emissions from mobile sources are presented in Table 4.

Table 4. Total Mobile Source Emissions Before Mitigation

Emissions Source	Pollutant (tons/year)				
	ROG	NOx	CO	SOx	PM_{10}
Area Source Emissions[1]	0.15	0.15	0.12	0.00	0.00
Operational (Vehicle) Emissions[1]	0.91	14.69	10.30	0.02	0.57
Total Long-Term Emissions[2]	1.06	14.84	10.43	0.02	0.57

NOTES:
[1] Area Source and Operational (Vehicle) Emissions are shown as "mitigated" based on results obtained through the URBEMIS 2002 for Windows 8.7.0 Modeling Program.
[2] Numbers may not add due to rounding by the URBEMIS 2002 for Windows 8.7.0 Modeling Program.

Area and Operational Emissions Offsets:

If unmitigated, emissions of NOx will exceed the District's significance threshold of 10 tons per year. Mobile source emissions are not subject to Rule 2201 and any reduction would be voluntary mitigation. Cilion has proposed to voluntarily mitigate the mobile source emissions to less than significant by surrendering to the District 5 tons of NOx ERCs (Certificate No. S-2364-2). Total mobile source emissions after mitigation are presented in Table 5.

Table 5. Total Mobile Source Emissions After Mitigation

Emissions Source	Pollutant (tons/year)				
	ROG	NOx	CO*	SOx*	PM_{10}
Area Source Emissions[1]	0.15	0.15	0.12	0.00	0.00
Operational (Vehicle) Emissions[1]	0.91	14.69	10.30	0.02	0.57
Total Long-Term Emissions[3]	1.06	14.84	10.43	0.02	0.57
SJVUAPCD-Certified Emissions Reductions[2]	-	5.00	-	-	-
Total Mitigated Long-Term Emissions	1.06	9.84	10.43	0.02	0.57
SJVAPCD/Kern County CEQA Thresholds	10	10	NA	NA	15
Either Threshold Exceeded After Mitigation?	No	No			No

NOTES:
[1] Area Source and Operational (Vehicle) Emissions are shown as "mitigated" based on results obtained through the URBEMIS 2002 for Windows 8.7.0 Modeling Program.
[2] NOx Emissions Reduction Credits to offset project emissions have been purchased and will be surrendered to the SJVUAPCD with project approval.
[3] Numbers may not add due to rounding by the URBEMIS 2002 for Windows 8.7.0 Modeling Program.
* The SJVAPCD has not established significance thresholds for CO or SOx.

Process Water and Wastewater Discharge:

The proposed ethanol plant will have three wastewater streams: 1) Blow down water from the cooling tower; 2) domestic sewage from the administrative and operations buildings; and 3) process water from the fermentation, distillation and evaporation. All three streams would degrade the ground water if discharged to the land directly.

The blow down water will have an elevated TDS and conductivity. No chromates or other toxic metals will be used in the tower. Cilion has identified three options for mitigating the environmental impact from this wastewater discharge to less than significant. One mitigation measure is the use of Reverse Osmosis treatment to achieve the discharge requirements discussed below and contained in the City of Turlock letter to the Keyes Services District. Reverse Osmosis treatment would create a brine/sludge that would be stored in an above ground holding tank and shipped offsite for proper disposal at an authorized facility. If this mitigation measure is selected, Cilion will obtain an Industrial Sewer permit through the Keyes Services District and must comply with established sampling and monitoring requirements. A second mitigation measure is to treat the wastewater stream to a recyclable level. The resulting treated water would be returned to the makeup water tank and used in the ethanol manufacturing process. The brine reject component of waste discharge would require additional processing. To mitigate the impact of the brine reject, Cilion would apply for a Waste Discharge Requirement (WDR) permit to install lined ponds to evaporate the brine reject to a solid to be taken off site to an authorized facility. A third mitigation measure is to further treat and concentrate the brine reject and recycle the brine by adding it to the liquid syrup feed that is used to enhance the dairy feed, replacing salts and minerals that are added to this stream offsite. (A preliminary onsite treatment schematic is attached).

Cilion has not completed their analysis of the options for mitigating this potential wastewater discharge. However, Cilion has identified the following course of actions, pending final determination:

Prior to Startup of operation;

- If Cilion chooses to treat the cooling tower blow down water and discharge it to the sewer, Cilion shall obtain an Industrial discharge permit from the Keyes Services District. Cilion shall install a tank to hold the brine and sludge from onsite treatment for shipment off site to a proper disposal facility.
- If Cilion is able to install additional lime softening and other tertiary treatment processes to treat the water to a level that can be recycled to the front of the manufacturing process and chooses to dispose of the brine sludge, a lined evaporation pond for evaporation and eventual offsite disposal as a solid, Cilion shall complete and submit a report of waste discharge to the Regional Water Quality Control Board (RWQCB) and obtain a Waste Discharge Requirement under the California Code of Regulations Title 27.

- If Cilion is able to reuse the concentrated brine as a replacement for the salts and minerals added to the byproduct feed, a WDR will not be required. A letter from a qualified animal nutritionist will be maintained on file approving the substitution of the recycled material.

The second wastewater stream is domestic sewage from restrooms and break facilities in the office and operations buildings. This wastewater discharge will be processed separate from any process wastewater discharge and mitigated to a less than significant level by treatment at a publicly owned treatment works (POTW) facility. Connection to the POTW is through the Keyes Services District, which has provided Cilion with a letter to serve for the project. The POTW facility is operated by the City of Turlock. Cilion has indicated that prior to operation it shall obtain a permit to connect to the public sewer maintained by the Keyes Services District for discharge of the domestic waste from the office and operations building.

The third wastewater stream is process water from the fermentation, distillation and evaporation. Process streams of condensate have trace amounts of product, ethanol. This potential wastewater discharge will be mitigated to less than significant levels by recycling the potential discharge to the front end of the manufacturing process.

There are hazards associated with potential leaks or spills and storage and handling of process chemicals. Cilion has proposed the following mitigation measures:

The process units, cooking/liquefaction, fermentation, distillation, decantation and storage/load-out, are to be located on cement slabs with curbing to contain leaks or spills and the drains from the slabs will be collected to a lined containment sump. The sump contents will be pumped back to the make up water tank. The process drips from pumps and sample systems that contain minor amounts of product will be contained and pumped back to the make up water tank. The product tank farms will be located within containment berms and a Spill Prevention Control and Countermeasure plan will be in place prior to operation. All process chemicals will be stored within containment. Any hazardous waste generated will be properly characterized, stored and shipped offsite for disposal at an approved facility.

A potential exists for potential environmental impact from storm water runoff. Cilion has filed a Notice of Intent (NOI) with State Water Resources Control Board (SWRCB) to follow the State General Construction Storm Water Permit and WDID #5S50C342430 was issued to the facility. Per correspondence with Cilion, AL Gilbert is listed as the owner and Cilion the developer, as the escrow has not yet closed on the property. Once Cilion fully owns the property, Cilion has stated that it will convert the WDID to its name. A construction Storm Water Pollution Prevention Plan (SWPP) has been compiled and will be converted to an operation plan when the construction permit is rescinded and the NOI is submitted for operations to conform to SWRCB Water Quality Order No. 97-03-DWQ, General Permit No. CAS000001. Cilion has indicated that they will conform to SWRCB Water Quality Order No. 99-08-DWQ, General Permit No.

CAS000002 during construction and shall re-file for an Operational Storm water Discharge Permit prior to commencement of operation. Compliance with state and regional requirements is considered adequate to ensure that the project's potential impact on water quality is mitigated to less than significant

The proposed facility is within a zoned industrial park. No wetlands are anticipated in the area that would be disturbed by the project. Therefore, no US Army Corps of Engineers or Water Quality Certification from the RWQCB is required.

The manufacturing process is estimated to consume 1,017,960 gallons of water per day, which Cilion proposes to source from an industrial well system to be installed on site. Installation of wells is subject to review and approval by the Stanislaus County Department of Environmental Resources (DER). Cilion is seeking an industrial water well drilling permit through the County of Stanislaus. If approved, Cilion will follow the requirements for containing the well development fluids. If necessary, Cilion will file a Dewatering Permit Application with the RWQCB. Compliance with DER and RWQCB requirements is considered adequate to ensure that the project's potential impact on groundwater is mitigated to less than significant.

No dredged material will be discharged to a navigable waterway so a Section 404 Permit from Fish and Game is not required.

9. Other Agencies Whose Approvals Are Required and Permits Needed:

Stanislaus County Planning and Community Development: Planning Department staff has determined the proposed use is permitted within the zone and as such, no discretionary approval of the project is required. Planning staff will process this request through the issuance of mechanical and electrical permits. Issuance of these permits is a ministerial action.

Stanislaus County Department of Environmental Resources: Permits for water supplies and Storm Water Pollution Prevention will be required.

California Regional Water Quality Control Board:

Keyes Community Services District: Approvals for water and sewer service will be required.

To the District's knowledge, the above permitting actions are ministerial; consequently, the District is the lead agency under CEQA.

10. Name of Person Who Prepared Initial Study:

Daniel T. Barber, Ph.D.
San Joaquin Valley Unified Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno, CA 93726
(559) 230-5800

Figure 1

Project Location within San Joaquin Valley Air Basin

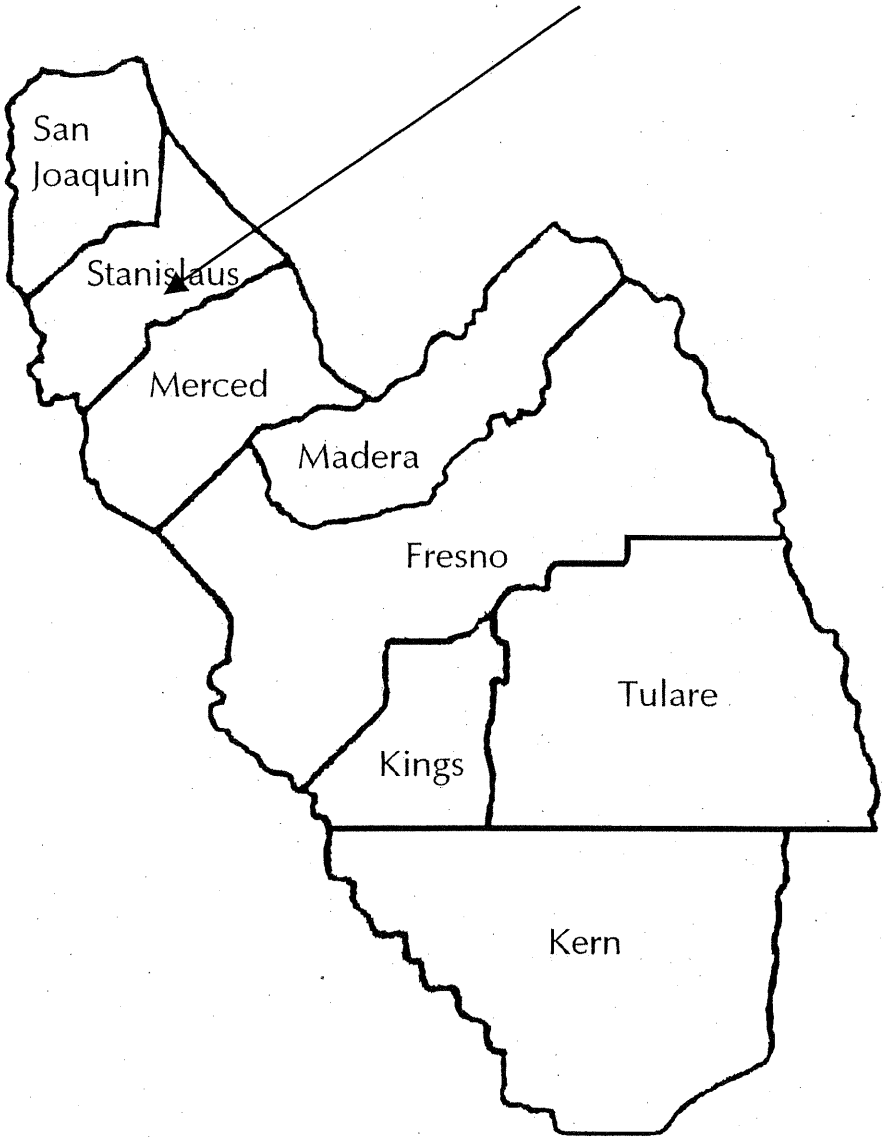
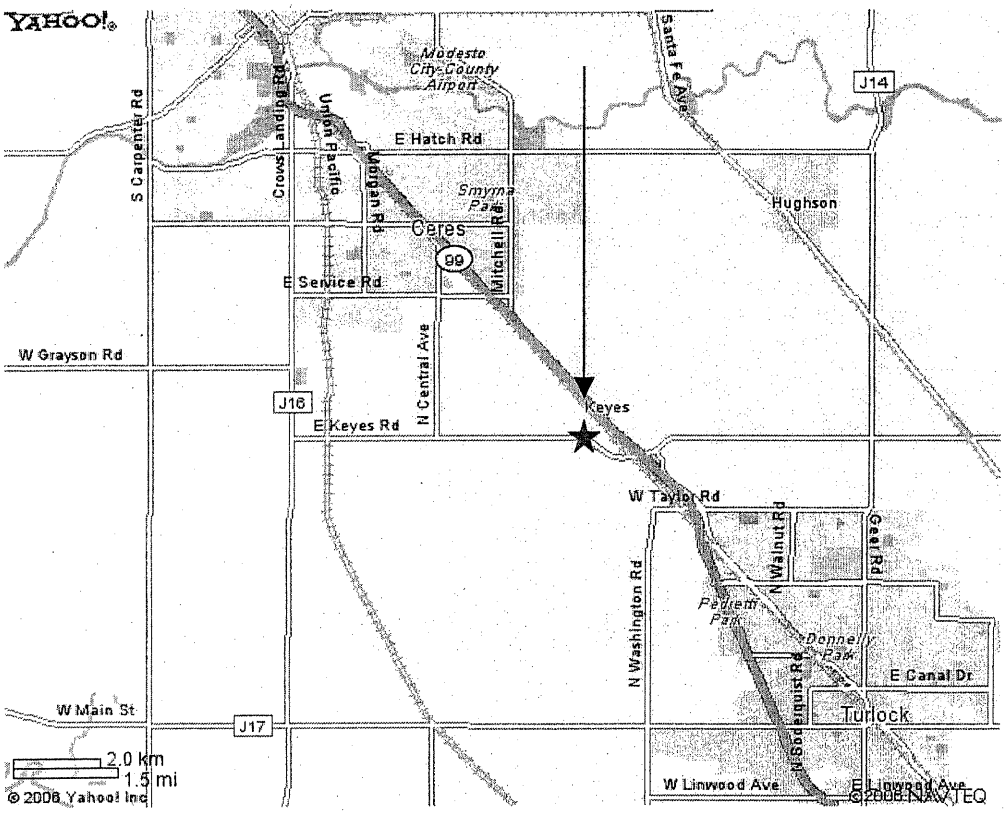


Figure 2

Project Location: 4209 Jessup Road, Ceres, CA



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B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

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

C. DETERMINATION

I certify that this project was independently reviewed and analyzed and that this document reflects the independent judgment of the District.

☐ 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.

Signature: _____ Date: 2/06/07

Printed name: David Warner
Title: Director of Permit Services

D. ENVIRONMENTAL IMPACT CHECKLIST

I. AESTHETICS Would the proposal:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Affect a scenic vista or scenic highway?			X	
b) Have a demonstrable negative aesthetic effect?			X	
c) Create light or glare?			X	

Discussion: The affected site is adjacent to an existing industrial facility, Farmers Warehouse, a sacked feeds division of A.L. Gilbert Company. The existing industrial facility formulates, manufactures and distributes feeds for all breeds of animals. Existing structures includes grain silos, rail sidings, and access roads, which may already impact aesthetics.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on aesthetics were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

II. AGRICULTURE RESOURCES In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X

Discussion: There will be no significant adverse impacts on agricultural resources. The County of Stanislaus has determined that the proposal can be accommodated under the existing land use entitlements. The project can be completed without conflicting with existing zoning for agricultural use, or Williamson Act Contracts.

Mitigation: None

Reference: Personal Communications with Kirk Ford, Deputy Director, Stanislaus County Department of Planning and Community Development.

III. AIR QUALITY Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigated**	**Less Than Significant Impact**	**No Impact**
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?			X	
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		X		
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

Discussion: The project site is within the San Joaquin Valley Air Basin, which has been classified as "Non-attainment" for ozone and respireable particulate matter (PM-10 and PM-2.5) as defined by the Federal Clean Air Act. The San Joaquin Valley Air Pollution Control District has been established by the State of California in an effort to control and minimize air pollution. As such, the District maintains permit authority over stationary sources of air pollution.

Emissions from the project have the potential to result in a significant impact on air quality. However, the potential impact can be reduced to less than significant through compliance with applicable State, Federal and District Rules.

Emissions of volatile organic compounds (VOC) from Stationary Source would exceed the District's offset threshold of 10 tons per year for VOCs. VOC emissions from the Stationary Source project can be offset to less than significant by surrendering to the District Emission Reduction Credits (ERC).

Emissions of nitrogen oxides (NOx) from mobile sources would exceed the District's significance threshold of 10 tons per year for NOx. NOx emissions from the mobile sources can be offset to less than significant by surrendering to the District Emission Reduction Credits (ERC).

District Rule 4102 (Nuisance), section 4.0 prohibits the discharge of air contaminants that could cause injury, detriment, nuisance, or annoyance to the public into the atmosphere. The following condition will be placed on each permit: No air contaminant shall be released into the atmosphere, which causes a public nuisance [District Rule 4102]. Compliance with this Rule is expected.

III. AIR QUALITY Continued:

Mitigation: Stationary Source emissions of volatile organic compounds (VOC) will be offset by surrendering 12.8 tons VOC of ERC (prior to applying the Distance Offset Ratio requirement).

Mobile sources emissions of nitrogen oxides (NOx) will be offset by surrendering 5.0 tons NOx of ERC.

Cilion has secured the required amounts of ERCs to mitigate both Stationary Source and mobile source emissions, and Cilion must surrender the ERCs to the District before operating the equipment proposed under the Authority to Construct permit.

District Rule 4102 (Nuisance), section 4.0 prohibits the discharge of air contaminants that could cause injury, detriment, nuisance, or annoyance to the public into the atmosphere. The following condition will be placed on each permit: No air contaminant shall be released into the atmosphere, which causes a public nuisance [District Rule 4102].

Reference: A summary of stationary source and mobile source emissions for the project is presented in Table 1 through Table 5 of this document. A list of applicable State, Federal and District Rules rules can be found in the District's Engineering Evaluation of Cilion Inc.'s Application for Authority to Construct: District Project Number: N1062063.

IV. BIOLOGICAL RESOURCES Would the project:	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigated**	**Less Than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?				X
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?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
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?				X
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

IV. BIOLOGICAL RESOURCES Continued:

Discussion: The project would be located adjacent to an existing industrial site. The proposed ethanol plant is an allowed use in the industrial zone. Stanislaus County's General Plan Circulation Element was updated, in April 2006 and addresses the Keyes Community Plan. The Keyes Community Plan designates lands west of State Highway 99 for industrial use and residential expansion to the north and east of Keyes. The Keys Community Plan itself was subject to extensive CEQA review in 1998, which included an assessment of these properties built out for industrial uses. There is no evidence to suggest this project would result in impacts to endangered species or habitats, locally designated species, or wildlife dispersal or migration corridors. There are no known sensitive or protected species or natural communities located on the site and/or surrounding area.

Mitigation: None

Reference: Stanislaus County's General Plan Circulation Element, Keys Community Plan, Correspondence with County of Stanislaus Department of Planning and Community and Development.

V. CULTURAL RESOURCES Would the project:	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigated**	**Less Than Significant Impact**	**No Impact**
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?				X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
d) Disturb any human remains, including those interred outside of formal cemeteries?				X

Discussion: Cultural resources are not known to exist on the project site. The project would be located adjacent to an existing industrial site; however, there is the possibility of discovering unknown cultural resources during construction activities related to the project. If this should occur, the contractor or project official shall consult Central California Information Center (CCIC), the State Office of Historic Preservation in Sacramento, or the Native American Heritage Commission in Sacramento for recommended procedures, as required under Section 7050 of the Health and Safety Code and Section 5097 of the Public Resources Code.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on cultural resources were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

VI. GEOLOGY/SOILS Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
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.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

Discussion: The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on Geology were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

The project will be subject to Stanislaus County permit requirements, which is considered adequate to potential impacts will be less than significant. Any structures resulting from this project shall be built according to Local, State, and Federal building standards. Compliance with existing regulations is considered adequate to ensure that the proposed project would not increase the exposure of people or property to geologic hazards.

Mitigation: None

Reference: Stanislaus County's General Plan Circulation Element, Keys Community Plan

VII. HAZARDS & HAZARDOUS MATERIALS Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	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?				X
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?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
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?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

VII. HAZARDS & HAZARDOUS MATERIALS Continued

Discussion: Operators must comply with federal, state, and local safety and environmental regulations. Compliance with existing regulations is considered adequate to minimize significant worker exposure and potential environmental hazards.

The project proponent will prepare a site specific Spill Prevention Control and Counter Measure Plan (SPCC) and Emergency Response, and site specific Hazardous Materials Business Management Plan once the once the site is in operation. The project proponent will prepare and comply with a Risk Management Plan (RMP) if stored quantities of certain hazardous materials exceed state and federal limits. The propose project is subject to Federal Process Safety Management (PSM) requirements and a plan will be compiled and Hazardous Operations (HAZOP) studies will be conducted as part of the startup operation.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts of Hazards were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County's General Plan Circulation Element, Keys Community Plan

VIII. HYDROLOGY/WATER QUALITY Would the project:	**Potentially Significant Impact**	**Potentially Significant Impact Unless Mitigated**	**Less Than Significant Impact**	**No Impact**
a) Violate any water quality standards or waste discharge requirements?				X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				X
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X

VIII. HYDROLOGY/WATER QUALITY Continued:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow				X

Discussion: The manufacturing process is estimated to generate a maximum daily discharge of 236,808 gallons of waste constituents. The proposed ethanol plant will have three wastewater streams: 1) Blow down water from the cooling tower; 2) domestic sewage from the administrative and operations buildings; and 3) process water from the fermentation, distillation and evaporation. All three streams would degrade the ground water if discharged to the land directly. Accordingly, the discharge of these waste streams is subject to regulation by the California Central Valley Regional Water Quality Control Board (Regional Water Board). Section 13264 of the California Water Code requires individuals proposing to discharge waste that may affect water quality to submit a complete report of waste discharge (RWD) to the appropriate Regional Water Board office at least 140 days prior to the initiation of the discharge. To be determined complete by the Regional Water Board, the RWD shall include a technical supplement that characterizes the proposed discharge, as well as existing water quality (groundwater and, if appropriate, surface water), and evaluates the extent to which the proposed discharge may degrade water quality. Discharges that degrade, or threaten to degrade, high quality water are required to be conducted in a manner consistent with State Water Quality Control Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. The RWD should contain sufficient information for Regional Water Board staff to determine the discharge's consistency with this policy. The discharge of cooling water to land may be eligible for coverage under the Regional Water Board's Low Threat General Waiver, Resolution No. R5 2003-0008 for the category of Air Conditioner, Cooling, and Elevated Temperature Waters Discharged to Land. The discharge of the project's storm water may be covered under individual waste discharge requirements. Compliance with existing regulations is considered adequate to minimize any environmental impact resulting from discharge of waste constituents.

A potential exists for potential environmental impact from storm water runoff. Cilion has filed a Notice of Intent (NOI) with State Water Resources Control Board (SWRCB) to follow the State General Construction Storm Water Permit and WDID #5S50C342430 was issued to the facility.

The manufacturing process is estimated to consume 1,017,960 gallons of water per day, which the project proponent proposes to source from a well system to be installed on site. Installation of wells is subject to review and approval by the Stanislaus County Department of Environmental Resources (DER). Compliance with DER requirements is considered adequate to ensure that the project's potential impact on groundwater is less than significant.

VIII. HYDROLOGY/WATER QUALITY Continued

Cilion has not completed their analysis of the options for mitigating this potential wastewater discharge. However, Cilion has identified the following course of actions, pending final determination:

Prior to Startup of operation;
If Cilion chooses to treat the cooling tower blow down water and discharge it to the sewer, Cilion shall obtain an Industrial discharge permit from the Keyes Services District. Cilion shall install a tank to hold the brine and sludge from onsite treatment for shipment off site to a proper disposal facility.

If Cilion is able to install additional lime softening and other tertiary treatment processes to treat the water to a level that can be recycled to the front of the manufacturing process and chooses to dispose of the brine sludge, a lined evaporation pond for evaporation and eventual offsite disposal as a solid, Cilion shall complete and submit a report of waste discharge to the Regional Water Quality Control Board (RWQCB) and obtain a Waste Discharge Requirement California Code of Regulations Title 27.
If Cilion is able to reuse the concentrated brine as a replacement for the salts and minerals added to the byproduct feed, a WDR will not be required. A letter from a qualified animal nutritionist will be maintained on file approving the substitution of the recycled material.

Process streams of condensate have trace amounts of product, ethanol. This potential wastewater discharge will be mitigated to less than significant levels by recycling the potential discharge to the front end of the manufacturing process.

Domestic sewage from restrooms and break facilities in the office and operations buildings will be processed separate from any process wastewater discharge and mitigated to a less than significant level by treatment at a publicly owned treatment works (POTW) facility. Connection to the POTW is through the Keyes Services District.

Cilion is seeking an industrial water well drilling permit through the County of Stanislaus. If approved, Cilion will follow the requirements for containing the well development fluids. If necessary, Cilion will file a Dewatering Permit Application with the RWQCB. For a more complete discussion of these wastewater streams and proposed control measures, please refer to the Process Water and Wastewater Discharge section of the above *Process Description.*

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts of hydrology and water quality were identified as being less than significant in the Keyes Community Plan NOP and Initial Study. Therefore, the project is not anticipated to have significant impacts as identified above.

Mitigation: None.

Reference: Stanislaus County General Plan and Keyes Community Plan

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

Discussion: The County of Stanislaus has determined that the proposal can be accommodated under existing land use entitlements. The proposed project will not conflict with any applicable habitat conservation plan or natural community conservation plan and will not physically divide an established community

Mitigation: None

Reference: Stanislaus County General Plan, Keyes Community Plan and Support Documentation.

X. MINERAL RESOURCES Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	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?				X
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X

Discussion: The location of all commercially viable mineral resources in Stanislaus County has been mapped by the State Division of Mines and Geology in Special Report 173. There are no known significant resources in or around the project area.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on energy and mineral resources were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County General Plan, Keyes Community Plan and Support Documentation, and State Division of Mines and Geology Special Report 173.

XI. NOISE Would the project result in:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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 expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Discussion: The Stanislaus County General Plan identifies noise levels up to 75 dbL_{dn} (or CNEL) as the normally acceptable level of noise for industrial, manufacturing, utility, and agricultural uses. On-site grading and construction resulting from this project may result in a temporary increase in the area's ambient noise levels. The project's impact on noise associated with on-site activities and traffic are not anticipated to exceed normally acceptable noise levels. The site itself is impacted by noise generated from nearby Highway 99 and the Union Pacific Railroad.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts from noise were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County General Plan, Keyes Community Plan and Support Documentation.

XII. POPULATION/HOUSING Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Induce substantial 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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Discussion: The proposed use of the site will not create significant service extensions or new infrastructure that could be considered growth inducing. No housing or persons will be displaced by the project.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts from population and housing were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County General Plan and Support Documentation.

XIII. PUBLIC SERVICES Would the project	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X
Fire protection?			X	
Police protection?			X	
Schools?				X
Parks?				X
Other public facilities?				X
b) Cumulatively exceed official regional or local population projections?				X
c) Induce substantial growth in an area either directly or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?				X

XIII. PUBLIC SERVICES Continued	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
d) Displace existing housing, especially affordable housing?				X

Discussion: Stanislaus County has adopted Public Facilities Fees, as well as one for the Fire Facility Fees on behalf of the appropriate fire district, to address impacts to public services. Such fees are required to be paid at the time of building permit issuance. Furthermore, the project proponent will prepare a comprehensive fire protection plan, to be reviewed by the local fire and emergency response agencies. The plan will be finalized and approved prior to startup of the operation. Compliance with County requirements is considered adequate ensure that the project's potential impact on public services is less than significant.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on public services were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County General Plan and Support Documentation.

XIV. RECREATION	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	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?				X
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?				X

Discussion: The proposed project is not anticipated to significantly increase demand on recreational facilities.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on recreation were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation: None

Reference: Stanislaus County General Plan and Support Documentation.

XV. TRANSPORTATION/TRAFFIC Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?			X	
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

Discussion: The site is adjacent to an existing industrial facility, Farmers Warehouse, a sacked feeds division of A.L. Gilbert Company. The existing industrial facility is served by access roads connecting to nearby Highway 99 and by rail sidings of the Union Pacific Railroad. The project is not anticipated to have a significant traffic impact to local County roads associated with this project.

The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts from traffic were considered in the Keyes Community Plan addressed in both the Draft and Final EIR. Mitigation measures were proposed. There is no evidence to indicate that the proposed project's potential impact on traffic would exceed that addressed in the Keyes Community Plan.

Mitigation: None

XVI. UTILITIES/SERVICE SYSTEMS Would the project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could				X

	cause significant environmental effects?				
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d)	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e)	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?				X
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g)	Comply with federal, state, and local statutes and regulations related to solid waste?				X

Discussion: Limitations on providing services have not been identified. The project proponent has received approval from the Keyes Community Services District for sewer and potable water sources serving the office and sanitary facilities. It is anticipated that process water will come from a well system to be installed on site and process waste constituents will be processed by either the City of Turlock's municipal waste treatment facilities or on-site evaporative ponds. Well construction, discharge of waste constituents and connections to municipal services are subject to review and approval by the respective agencies. Compliance with conditions of approval and/or permit requirements is considered adequate to ensure that the project's potential impact on utilities/service systems is less than significant.

Impacts on government services, including law enforcement and public facilities maintenance, are mitigated through the collection of property taxes and development fees. The proposed facility is an allowed use within a zoned industrial park. Stanislaus County's General Plan Circulation Element was updated in April of 2006, and addresses the Keyes Community Plan. The Keyes Community Plan was subject to extensive CEQA review in 1998. Potential impacts on utilities and services were identified as being less than significant in the Keyes Community Plan NOP and Initial Study.

Mitigation:

XVII. MANDATORY FINDINGS OF SIGNIFICANCE	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or 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?				X
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)?			X	
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?				X
Discussion: Review of this project has not indicated any features, which might significantly impact the environmental quality of the site and/or adjacent areas.				

San Joaquin Valley Air Pollution Control District

Authority to Construct Application Review

Raw Biogas Treatment Facility, New Boiler, and Modification to Existing Boilers and RTO

Facility Name:	Aemetis Advanced Fuels Keyes, Inc	Date:	November 25, 2019
Mailing Address:	3711 Meadow View Drive, Suite 100 Redding, CA 96002	Engineer: Lead Engineer:	Richard Edgehill Richard Karrs
Contact Person:	Andy Foster and Russ Erbes (Kleinfelder)		
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Application #(s):	N-7488-5-5, '-16-5, '-17-5, '-18-45, '-25-0, and '-26-0		
Project #:	1193266		
Deemed Complete:	September 12, 2019		

I. Proposal

Aemetis Advanced Fuels Keyes, Inc (Aemetis) has requested Authorities to Construct (ATCs) for the installation of a dairy biogas treatment facility, 12.6 MMBtu/hr boiler, and modification of 3 existing 99 MMBtu/hr boilers (N-7488-16 through '-18) and Regenerative Thermal Oxidizer (RTO) (N-7488-5). The new equipment will be added to the existing ethanol facility.

Installation of the new boiler triggers BACT. Offsets and public notice are not required.

Current PTOs are included in **Attachment I**.

Facility N-7488 is not a Major Source and therefore Rules 2520 and 2530 are not applicable.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (8/15/19)
Rule 2410	Prevention of Significant Deterioration (6/16/11)
Rule 2520	Federally Mandated Operating Permits (8/15/19)
Rule 4001	New Source Performance Standards (4/14/99)
Rule 4002	National Emissions Standards for Hazardous Air Pollutants (5/20/04)
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4301	Fuel Burning Equipment (12/17/92)
Rule 4305	Boilers, Steam Generators, and Process Heaters – Phase 2 (8/21/03)
Rule 4306	Boilers, Steam Generators, and Process Heaters – Phase 3 (10/16/08)
Rule 4320	Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr (10/16/08)
Rule 4801	Sulfur Compounds (12/17/92)

CH&SC 41700 Health Risk Assessment
CH&SC 42301.6 School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines

III. Project Location

The facility is located at 4209 Jessup Road, Ceres, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

A Location Map/Plot Plan is included in **Attachment II.**

IV. Process Description

Aemetis intends to collect digester gas from waste lagoons at several dairies in the vicinity of the proposed new Biogas Cleanup Plant. The gas received from the dairies is expected to have most of the sulfur removed and therefore is referred to as "conditioned biogas". Once the gas is received by the facility, additional sulfur compounds are removed in a "polishing step" to create "partially treated biogas". After polishing, carbon dioxide (CO_2) will then be removed from the partially treated biogas to create PUC-quality gas ("renewable natural gas" or RNG) that can be entered into the Pacific Gas & Electric (PG&E) natural gas transmission system. There may be occasions when the RNG does not quite meet PG&E specifications (primarily due to low heat content). This gas is termed "off-specification (off-spec) RNG". The facility normally purchases PUC- regulated gas ("Commercial Gas") for combustion in on-site boilers.

The above mentioned gases are described in more detail in the following table.

Type of Gas	
Digester Gas	Dairy gas with high sulfur and CO_2 content S content: 3,500 ppmv to 5,000 ppmv
Conditioned Biogas	Digester gas with most of sulfur removed at dairies (iron sponge) that enters facility and combusted in new boiler or sent to activated carbon adsorption system. Pressure: 65 psia Flow rate = 2,050 scfm, 2.952 MMscf/day, 700 MMscf/yr. Heat content = 600 Btu/scf H_2S content: <80 ppmvd CH_4: 60-69%, O_2: 0 – 2%, N_2: 0 – 8%, CO_2: 21 – 40% NH_4 : 1.74 lb/mmscf, VOC: 0.296 lb/MMscf
Partially Treated Biogas	Treated biogas to remove S (activated carbon), combusted in new boiler or sent to CO_2 removal system S content: <4 ppmvd
Waste Tail Gas	Waste gas from CO_2 removal system where 97% of CO_2 is removed. The waste gas is approximately 3% by volume of conditioned biogas and will be routed to ethanol plant RTO. Flow rate: 815 scfm, 21 mmscf/yr, 88,560 scf/day, and 61.5 scfm.
Renewable Natural Gas (RNG	Gas with H2S and CO_2 removed. Combusted in 3 existing boilers or sold to PG&E.
Off-spec RNG	RNG that does not quite meet PG&E specifications, primarily due to heat content. RNG is routed to ethanol plant RTO, combusted in new boiler, combusted in existing boilers, or vented to atmosphere, Flow rate: 1,300 scfm Venting Time: 2 hr/day, 44 hr/yr (normal) 1st yr - 6 hr/day, 3 mo 540 hr/yr (plant startup), 9 mo 0.5% of time (11 hours) Venting Flow Rate: 468,000 scf/day (6 hr @ 1300 scfm)), 42,978,000 scf/yr (1st yr, 551 hr @ 1300 scfm)
Commercial natural gas	PUC-regulated natural gas that the Aemetis Fuel Ethanol Plant currently purchases to fuel its boilers and other equipment at the Ethanol Plant.

Aemetis also plans to install a new 12.6 million Btu per hour (MMBtu/hr) boiler to provide additional process steam at the Ethanol Plant. The new boiler will be fueled with either conditioned biogas, partially treated biogas, off-spec RNG, pipeline quality RNG, commercial natural gas, or mixture of those gases.

Additional equipment authorized by the project will include the following digester gas processing equipment:

Process Devices	Function
Chiller (gas dryer), compressor, and iron Sponge	Remove water and sulfur at dairies
Dual bed carbon adsorption system	Remove non-methane non-ethane volatile organic compounds (NMNEVOC), and sulfur from the conditioned biogas
Carbon dioxide membrane removal system	Remove CO_2 from the partially treated biogas
Knock out pot	Manage condensate from the treated biogas, <300 gal/day sent to ethanol plant drain system
Compressors and pumps	Convey fluids within the facility

A simplified process diagram is included in **Attachment III**.

V. Equipment Listing

Pre-Project Equipment Description:

N-7488-5-3: LIQUEFACTION PROCESS CONSISTING OF ONE 9,050 GALLON COOK WATER TANK, ONE 64,374 GALLON SLURRY MIXING TANK, ONE 7,700 GALLON COOK TUBE, ONE 3,000 GALLON COOK FLASH TANK, ONE 64,370 GALLON INITIAL LIQUEFACTION TANK, ONE 64,374 GALLON FINAL LIQUEFACTION TANK, RELATED PUMPS, VALVES, HEAT EXCHANGERS, AND PIPING, AND AN ENVITECH 2-STAGE PROCESS VENT CONDENSER WITH A 550 GALLON WATER RECIRCULATION TANK (SHARED WITH UNITS N-7488-7 AND -8) SERVED BY A NESTEC 1.68 MMBTU/HR NATURAL GAS-FIRED REGENERATIVE THERMAL OXIDIZER (RTO). THE RTO SERVES UNIT N-7488-5, -6, -7, AND -8

N-7488-16-4: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #1) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

N-7488-17-4: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #2) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS

FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

N-7488-18-3: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #3) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

Proposed Modification:

N-7488-5-5: MODIFICATION OF LIQUEFACTION PROCESS CONSISTING OF ONE 9,050 GALLON COOK WATER TANK, ONE 64,374 GALLON SLURRY MIXING TANK, ONE 7,700 GALLON COOK TUBE, ONE 3,000 GALLON COOK FLASH TANK, ONE 64,370 GALLON INITIAL LIQUEFACTION TANK, ONE 64,374 GALLON FINAL LIQUEFACTION TANK, RELATED PUMPS, VALVES, HEAT EXCHANGERS, AND PIPING, AND AN ENVITECH 2-STAGE PROCESS VENT CONDENSER WITH A 550 GALLON WATER RECIRCULATION TANK (SHARED WITH UNITS N-7488-7 AND -8) SERVED BY A NESTEC 1.68 MMBTU/HR NATURAL GAS-FIRED REGENERATIVE THERMAL OXIDIZER (RTO). THE RTO SERVES UNIT N-7488-5, -6, -7, -8, AND -26: AUTHORIZE COMBUSTION OF BIOGAS IN RTO

N-7488-16-5: MODIFICATION OF 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #1) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9: AUTHORIZE COMBUSTION OF RENEWABLE NATURAL GAS OR OFFSPEC RENEWABLE NATURAL GAS

N-7488-17-5: MODIFICATION OF 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #2) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9: AUTHORIZE COMBUSTION OF RENEWABLE NATURAL GAS OR OFFSPEC RENEWABLE NATURAL GAS

N-7488-18-4: MODIFICATION OF 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #3) WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9: AUTHORIZE COMBUSTION OF RENEWABLE NATURAL GAS OR OFFSPEC RENEWABLE NATURAL GAS

Post-Project Equipment Description:

N-7488-5-5: LIQUEFACTION PROCESS CONSISTING OF ONE 9,050 GALLON COOK WATER TANK, ONE 64,374 GALLON SLURRY MIXING TANK, ONE 7,700 GALLON COOK TUBE, ONE 3,000 GALLON COOK FLASH TANK, ONE 64,370 GALLON INITIAL LIQUEFACTION TANK, ONE 64,374 GALLON FINAL LIQUEFACTION TANK, RELATED PUMPS, VALVES, HEAT EXCHANGERS, AND PIPING, AND AN ENVITECH 2-STAGE PROCESS VENT CONDENSER WITH A 550 GALLON WATER RECIRCULATION TANK (SHARED WITH UNITS N-7488-7 AND -8) SERVED BY A NESTEC 1.68 MMBTU/HR NATURAL GAS/BIOGAS-FIRED REGENERATIVE THERMAL OXIDIZER (RTO). THE RTO SERVES UNIT N-7488-5, -6, -7, -8, AND -26

N-7488-16-4: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #1) FIRED ON NATURAL GAS/RENEWABLE NATURAL GAS WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

N-7488-17-4: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #2) FIRED ON NATURAL GAS/RENEWABLE NATURAL GAS WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

N-7488-18-3: 99 MMBTU/HR VICTORY ENERGY VOYAGER BOILER (BOILER #3) FIRED ON NATURAL GAS/RENEWABLE NATURAL GAS WITH A TODD RMB ULTRA-LOW NOX BURNER AND A FLUE GAS RECIRCULATION SYSTEM. THE BOILER PROVIDES PROCESS STEAM AND ALSO SERVES AS A CONTROL DEVICE TO INCINERATE ANY NON-CONDENSABLE VAPORS FROM THE TANK VAPOR RECOVERY SYSTEM LISTED ON PERMIT UNIT N-7488-9

N-7488-25-0: 12.6 MM BTU/HR BIOGAS/PUC-REGULATED NATURAL GAS-FIRED BOILER WITH POWERFLAME MODEL NVAC7-GO-30 LOW NOX BURNER

N-7488-26-0: BIOGAS CLEANUP PLANT CONSISTING OF ACTIVATED CARBON ADSORPTION, AND CO2 MEMBRANE REMOVAL SYSTEM

VI. Emission Control Technology Evaluation

N-7488-25-0

Emissions from natural gas-fired boilers include NO_X, CO, VOC, PM_{10}, and SO_X.

NO_X is the major pollutant of concern when burning natural gas. NO_X formation is either due to thermal fixation of atmospheric nitrogen in the combustion air (thermal NO_X) or due to conversion

of chemically bound nitrogen in the fuel (fuel NO_X). Due to the low fuel nitrogen content of natural gas, nearly all NO_X emissions are thermal NO_X. Formation of thermal NO_X is affected by four furnace zone factors: (1) nitrogen concentration, (2) oxygen concentration, (3) peak temperature, and (4) time of exposure at peak temperature.

Flue gas recirculation (FGR) reduces NO_X emissions by recirculating a percentage of the exhaust gas back into the windbox. This reduces the oxygen concentration in the air-fuel mixture and regulates the combustion process, lowering the combustion temperature. The lowered availability of oxygen in conjunction with lowered combustion temperature reduces the formation of NO_X.

N-7488-26-0

The dairy biogas cleanup plant will remove VOCs, sulfur, and CO_2. The activated carbon cannisters are expected to remove 95% (by weight) of the VOCs. Exhaust gas is expected to contain no more than 4 ppmv S.

VII. General Calculations

A. Assumptions

N-7488-25 (new boiler)

Operation 24 hr/day, 365 days/yr

Heat content of conditioned biogas: 600 Btu/scf

Sulfur content of conditioned (plant inlet) biogas: 80 ppmv H2S

N-7488-26 (Biogas Cleanup Plant)

Operation 24 hr/day, 365 days/yr

Flow rate = 2,050 scfm, 2.952 MMscf/day, 700 MMscf/yr

Plant inlet gas flow rate: 700 MMscf/yr, 2.952 MMscf/day
Sulfur content of gas after sulfur removal: 4 ppmv
Activated carbon control of VOCs: 95% by weight

For GHG Calculations Conditioned (Inlet) Biogas
CO2 content of inlet gas: 0.4 scf CO_2/scf gas
CH4 content of inlet gas: 0.6 scf CH_4/scf gas

Venting Biogas to Atmosphere

Offspec Gas

Flow rate: 1,300 scfm

Venting Time: 2 hr/day, 44 hr/yr (after 1st year), 6 hr/day, 551 hr/yr (1st year)
Carbon adsorption system and CO_2 removal systems are functional
CO2 content: 1% by volume, H2S: 4 ppmv
Waste Tail Gas

3% of tail gas (activated carbon-treated biogas) is vented to the atmosphere from CO_2 membrane system

Existing Combustion Devices

Boilers N-7488-16, '-17, and '-18 and RTO '-5, no change in emissions factors or GHG emissions expected with combustion of Biogas

B. Emission Factors

N-7488-5 Thermal Oxidizer) – Current PTO

Pollutant	EF1, EF2 lb/MMBtu
NOx	0.0182
SOx	0.00285
PM_{10}	0.0076
CO	0.011
VOC	0.0055

Fugitive VOC emissions from pumps, valves and flanges handling the fluids in the liquefaction process are zero since the fluids handled by these components contain 10% (or less) VOCs by weight. This determination is consistent with District Policy SSP 2015 (9/15/05) "Procedures for Quantifying Fugitive VOC Emissions at Petroleum and SOCMI Facilities.

Liquefaction and RTO

0.072 lb-VOC/1,000 gallons of ethanol (pre-project)
0.063 lb-VOC/1,000 gallons of ethanol (post-project, proposed based on recent source test data)*

***Summary of Aemetis RTO Source Test Results**

Date	**Measured Destruction Efficiency**	**Permit Destruction Required**	**Measured Emission Rate** (lb/1000 gallons ETOH)	**Permit Emission Rate** (lb/1000 gallons ETOH)
7/1/2015	99.96%	>99.5%	0.039	0.072
6/22/2016	99.96%	>99.5%	0.057	0.072
7/7/2017	99.96%	>99.5%	0.03	0.072

8/30/2018	99.99%	>99.5%	0.027	0.072
4/18/2019	99.99%	>99.5%	0.009	0.072

Note: In 2018, the initial source tests were conducted during a blower failure in the RTO, and thus were not representative. The August 30, 2018 results are a re-test after the blower was repaired.

N-7488-16, '-17, and '-18

Pollutant	Emission Factors (EF1, EF2)		Source
NO_X	0.008 lb-NO_X/MMBtu	7 ppmvd NO_X (@ 3%O_2)	Current PTO
SO_X	0.00285 lb-SO_X/MMBtu		District Policy APR 1720
PM10	0.0044 lb-PM10/MMBtu		Current PTO
CO	0.011 lb-CO/MMBtu	15 ppmvd CO (@ 3%O_2)	"
VOC	0.004 lb-VOC/MMBtu	10 ppmvd VOC (@ 3% O_2)	"

N-7488-25 (natural gas and conditioned biogas-fired)

Pollutant	Post-Project Emission Factors (EF2)		Source
NO_X	0.008 lb-NO_X/MMBtu	7 ppmvd NO_X (@ 3%O_2)	Applicant's data
SO_X	0.0225 lb-SO_X/MMBtu		Calculation below
PM10	0.003 lb-PM10/MMBtu		FYI 328, Proposed
CO	0.074 lb-CO/MMBtu	100 ppmvd CO (@ 3%O_2)	Proposed
VOC	0.0055 lb-VOC/MMBtu	13 ppmvd VOC (@ 3% O_2)	Applicant's data or AP-42 (07/98) Table 1.4-2

80 ft^3 H_2S/10^6 ft^3 gas x lbmol H_2S/379 ft^3 H_2S x lbmol SOx/lbmol H_2S x (64 lb SOx/lbmol SOx) x ft^3 gas/0.0006 MMBtu
= 0.0225 lb SOx/MMBtu

80 ft^3 H_2S/10^6 ft^3 gas x lb mol H_2S/379 ft^3 H_2S x 32 lb S/lbmol H_2S x 7000 gr S/lb S x 100
= 4.7 gr S/100 scf

- Emission factors and global warming potentials (GWP) are taken from the California Climate Change Action Registry (CCAR), Version 3.1, January, 2009 (Appendix C, Tables C.7 and C.8):

  CO2 53.06 kg/MMBtu (HHV) natural gas (116.7 lb/MMBtu)
  CH4 0.005 kg/MMBtu (HHV) natural gas (0.011 lb/MMBtu)

N2O 0.0001 kg/MMBtu (HHV) natural gas (0.00022 lb/MMBtu)

GWP for CH4 = 21 lb-CO_2e per lb-CH4
GWP for N2O = 310 lb-CO_2e per lb-N2O

N-7488-26

Applicant Data in Application (Items 8 through 10 Attachment 5)

(from Dairy Biogas-Fired External Combustion spreadsheet, STAR Net Permit Services >> Modeling Inventory Toxics under the heading RMR Spreadsheets, **Attachment IV**)

VOC content of dairy biogas: 0.296 lb/MMscf
H2S content of offspec vent from facility: 4 ppmv (0.357 lb/MMscf)
H2S content leaving the Cleanup Plant: 4 ppmv (0.357 lb S/MMscf)
NH4 content of raw biogas: 1.74 lb/MMscf

C. Calculations

1. Pre-Project Potential to Emit (PE1)

N-7488-5

Liquefaction

PE1 = (0.072 lb-VOC/1,000 gallons of ethanol)(210,000 gallons/day)
= 15.1 lb-VOC/day

PE1 = (0.072 lb-VOC/1,000 gallons of ethanol)(70,000,000 gallons/yr)
= 5,040 lb-VOC/yr

Natural gas combustion:

Pollutant	EF2 lb/MMBtu	PE2 lb/day	PE2 lb/yr
NOx	0.0182	0.7	268
SOx	0.00285	0.1	42
PM_{10}	0.0076	0.3	112
CO	0.011	0.4	162
VOC	0.0055	0.2	81

PE1		
Pollutant	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
NO_X	0.7	268
SO_X	0.1	42
PM_{10}	0.3	112
CO	0.4	162
VOC	15.3	5,121

N-7488-16, '-17, and '-18 (each)

Pollutant	**Daily PE1**			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE1 (lb/day)
NO_X	0.008	99	24	19.0
SO_X	0.00285	99	24	6.8
PM_{10}	0.0044	99	24	10.5
CO	0.011	99	24	26.1
VOC	0.0040	99	24	9.5

Pollutant	**Annual PE1**			
	EF1 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE1 (lb/year)
NO_X	0.008	99	8,760	6,938
SO_X	0.00285	99	8,760	2,472
PM_{10}	0.0044	99	8,760	3,816
CO	0.011	99	8,760	9,540
VOC	0.0040	99	8,760	3,469

N-7488-25 and '-26

Since these are new emissions units, PE1 = 0 for all pollutants.

2. Post-Project Potential to Emit (PE2)

N-7488-5

Liquefaction

PE1 = (0.063 lb-VOC/1,000 gallons of ethanol)(210,000 gallons/day)
= 13.2 lb-VOC/day

PE1 = (0.063 lb-VOC/1,000 gallons of ethanol)(70,000,000 gallons/yr)
= 4,410 lb-VOC/yr

Natural gas combustion:

Pollutant	EF2 lb/MMBtu	PE2 lb/day	PE2 lb/yr
NOx	0.0182	0.7	268
SOx	0.00285	0.1	42
PM_{10}	0.0076	0.3	112
CO	0.011	0.4	162
VOC	0.0055	0.2	81

There is no change in emissions.

PE2		
Pollutant	**Daily Emissions (lb/day)**	**Annual Emissions (lb/year)**
NO_X	0.7	268
SO_X	0.1	42
PM_{10}	0.3	112
CO	0.4	162
VOC	13.4	4,491

N-7488-16, '-17, and '-18 (each)

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO_X	0.008	99	24	19.0
SO_X	0.00285	99	24	6.8
PM_{10}	0.0044	99	24	10.5
CO	0.011	99	24	26.1
VOC	0.0040	99	24	9.5

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO_X	0.008	99	8,760	6,938
SO_X	0.00285	99	8,760	2,472
PM_{10}	0.0044	99	8,760	3,816
CO	0.011	99	8,760	9,540
VOC	0.0040	99	8,760	3,469

N-7488-25

Pollutant	Daily PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/day)	Daily PE2 (lb/day)
NO_X	0.008	12.6	24	2.4
SO_X	0.02250	12.6	24	6.8
PM_{10}	0.0030	12.6	24	0.9
CO	0.074	12.6	24	22.4
VOC	0.0055	12.6	24	1.7

Pollutant	Annual PE2			
	EF2 (lb/MMBtu)	Heat Input (MMBtu/hr)	Operating Schedule (hr/year)	Annual PE2 (lb/year)
NO_X	0.008	12.6	8,760	883
SO_X	0.02250	12.6	8,760	2,483
PM_{10}	0.0030	12.6	8,760	331
CO	0.074	12.6	8,760	8,168
VOC	0.0055	12.6	8,760	607

N-7488-26

H_2S emissions (as total S)

Offspec Gas Venting (4 ppmv S)

0.357 lb S/MMscf x 1,300 E -06 MMscf/min x 60 min/hr x 6 hr/day = 0.2 lb S/day

0.357 lb S/MMscf x 1,300 E -06 MMscf/min x 60 min/hr x 551 hr/yr = 15 lb S/yr

Waste Tail Gas

0.357 lb S/MMscf x 2.952 MMscf/day x 0.03 = 0.03 lb S/day

0.357 lb S/MMscf x 700 MMscf/yr x 0.03 = 8 lb S/yr

VOC emissions

Off Spec Gas Venting

0.296 lb/MMscf x (1 – 0.95) x 1,300 E -06 MMscf/min x 60 min/hr x 6 hr/day
= 0.0 lb VOC/day

0.296 lb/MMscf x (1 – 0.95) x 1,300 E -06 MMscf/min x 60 min/hr x 551 hr/yr
= 1 lb VOC/yr

Waste Tail Gas

0.296 lb S/MMscf x 2.952 MMscf/day x 0.03 x 0.05 = 0.0 lb VOC/day

0.296 lb S/MMscf x 700 MMscf/yr x 0.03 x 0.05 = 0 lb VOC/yr

NH_3 emissions

Off Spec Gas Venting

1,300 E -06 MMscf/min x 1.74 lb/MMscf x 60 min/hr x 6 hr/day
= 0.8 lb NH_3/day

1,300 E -06 MMscf/min x 1.74 lb/MMscf x 60 min/hr x 551 hr/day
= 75 lb NH_3/yr

Waste Tail Gas

1.74 lb/MMscf x 2.952 MMscf/day x 0.03 = 0.1 lb NH_3/day

1.74 lb/MMscf x 700 MMscf/yr x 0.03 = 37 lb NH_3/yr

lb/day

Pollutant	Off Spec	Waste Tail Gas	Total
VOC	0.0	0.0	0.0
NH3	0.8	0.1	0.9
H2S (as S)	0.2	0.03	0.2

lb/yr

Pollutant	Off Spec	Waste Tail Gas	Total
VOC	1	0	1
NH3	75	37	112
H2S (as S)	15	8	23

PE2		
	Daily Emissions (lb/day)	**Annual Emissions (lb/year)**
NO_X	0	0
SO_X	0	0
PM_{10}	0	0
CO	0	0
VOC	0.1	1
NH_3	0.9	112
H_2S (sulfur)	0.2	15

GHG Emissions

Assume Conditioned Biogas Entering Facility is 40% by volume CO2 and 60% by volume CH4

Basis: 1 scf of conditioned biogas, MW CO2 = 44, MW methane = 16.
0.4 scf CO2, 0.6 scf methane, 379 scf/lbmol

Case I (without proposed facility): All CO2 and CH4 in conditioned biogas is vented upsteam of facility

A = [0.4 (44) + 0.6 (16)(21)]/379
CO2 CH4
= [17.6 + 201.6]/379
= 219.2/379 (lb CO2e)

Case II (with proposed facility): All CO2 in conditioned biogas gas is vented, All CH4 in conditioned biogas is combusted (in new boiler, T/O, and off plant) except offspec CH4 gas (which is 100% CH4, worst case)

Volume fraction of raw gas which is vented as offspec
= 1300 scfm x 60 min/hr x 551 hr/yr/700,000,000 scf/yr
= 0.061 scf/scf conditioned biogas

B = [0.4 (44) + (0.6 -0.061)44 + (0.061)(16)(21)]/379
CO2 CH4 combusted to CO2 CH4 vented as offspec gas
= [17.6 + 23.7 + 20.5]/379
= 61.8/379 (lb CO2e)

% reduction in GHG = 100 x (B – A)/A
= 100 x (61.8– 219.2)/219.2
= -72%,
There is no increase in GHG Emissions

Emissions Profiles are included in **Attachment V**.

3. Pre-Project Stationary Source Potential to Emit (SSPE1)

Pursuant to District Rule 2201, the SSPE1 is the Potential to Emit (PE) from all units with valid Authorities to Construct (ATC) or Permits to Operate (PTO) at the Stationary Source and the quantity of Emission Reduction Credits (ERC) which have been banked since September 19, 1991 for Actual Emissions Reductions (AER) that have occurred at the source, and which have not been used on-site.

SSPE1 (lb/year)*					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	**14,926**	**5005**	**15,850**	**21,791**	**28,790**

*SSPE Calculator, no outstanding ATCs

4. Post-Project Stationary Source Potential to Emit (SSPE2)

Pursuant to District Rule 2201, the SSPE2 is the PE from all units with valid ATCs or PTOs at the Stationary Source and the quantity of ERCs which have been banked since September 19, 1991 for AER that have occurred at the source, and which have not been used on-site.

There is no change in emissions from '-5 and '-16 thru '-18.

SSPE2 (lb/year)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
SSPE1	**14,926**	**5005**	**15,850**	**21,791**	**28,790**
N-7488-5 (pre-project)	-268	-42	-112	-162	-5,121
N-7455-5 (post-project)	268	42	112	162	4,491
N-7488-25	883	2483	371	8,168	607
N-7488-26	0	0	0	0	13
SSPE2	**15,809**	**7,488**	**16,221**	**29,959**	**28,780**

5. Major Source Determination

Rule 2201 Major Source Determination:

Pursuant to District Rule 2201, a Major Source is a stationary source with a SSPE2 equal to or exceeding one or more of the following threshold values. For the purposes of determining major source status the following shall not be included:

- any ERCs associated with the stationary source
- Emissions from non-road IC engines (i.e. IC engines at a particular site at the facility for less than 12 months)
- Fugitive emissions, except for the specific source categories specified in 40 CFR 51.165

Rule 2201 Major Source Determination (lb/year)						
	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
SSPE1	14,926	5,005	15,850	15,850	21,791	28,790
SSPE2	15,533	7,488	16,221	16,221	29,959	28,780
'-6 (fugitives)						3505
'-7 (fugitives)						3579
'-9 (fugitives)						3179
'-10 (fugitives)						183
'-11 (fugitives)						257
'-12 (fugitives)						183
'-13 (fugitives)						8
'-14 (fugitives)						7
'-15 (fugitives)						553
'-21 (fugitives)						4840
Total Fugitives						16,294
SSPE1 (w/o fugitives)	14,926 (7.5 tons)	5,005 (2.5)	15,850 (7.9)	15,850 (7.9)	21,791 (10.9)	12,496 (6.2)
SSPE2 (w/o fugitives)	15,809	7,488	16,221	16,221	29,959	12,486 (6.2)
Major Source Threshold	20,000	140,000	140,000	140,000	200,000	20,000
Major Source?	No	No	No	No	No	No

Note: PM2.5 assumed to be equal to PM10

As seen in the table above, the facility is not an existing Major Source and is not becoming a Major Source as a result of this project.

Rule 2410 Major Source Determination:

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(iii). Therefore the PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination (tons/year)						
	NO_2	**VOC**	**SO_2**	**CO**	**PM**	**PM_{10}**
Estimated Facility PE before Project Increase	7.5	6.2	2.5	10.9	7.9	7.9
PSD Major Source Thresholds	250	250	250	250	250	250
PSD Major Source?	No	No	No	No	No	No

As shown above, the facility is not an existing PSD major source for any regulated NSR pollutant expected to be emitted at this facility.

6. Baseline Emissions (BE)

The BE calculation (in lb/year) is performed pollutant-by-pollutant for each unit within the project to calculate the QNEC, and if applicable, to determine the amount of offsets required.

Pursuant to District Rule 2201, BE = PE1 for:

- Any unit located at a non-Major Source,
- Any Highly-Utilized Emissions Unit, located at a Major Source,
- Any Fully-Offset Emissions Unit, located at a Major Source, or
- Any Clean Emissions Unit, located at a Major Source.

otherwise,

BE = Historic Actual Emissions (HAE), calculated pursuant to District Rule 2201.

As shown in Section VII.C.5 above, the facility is not a Major Source for any pollutant.

Therefore BE = PE1.

N-7488-5, '-16 thru '-18:

As calculated in Section VII.C.1 above, PE1 is summarized in the following table:

BE (lb/year)						
	NO_X	SO_X	PM_{10}	$PM_{2.5}$	CO	VOC
N-7488-5	268	42	112	112	162	5121
N-7488-16	6938	2472	3816	3816	9540	3469
N-7488-17	6938	2472	3816	3816	9540	3469
N-7488-18	6938	2472	3816	3816	9540	3469

7. SB 288 Major Modification

SB 288 Major Modification is defined in 40 CFR Part 51.165 as "any physical change in or change in the method of operation of a major stationary source that would result in a significant net emissions increase of any pollutant subject to regulation under the Act."

Since this facility is not a major source for any of the pollutants addressed in this project, this project does not constitute an SB 288 major modification.

8. Federal Major Modification

District Rule 2201 states that a Federal Major Modification is the same as a “Major Modification” as defined in 40 CFR 51.165 and part D of Title I of the CAA.

Since this facility is not a Major Source for any pollutants, this project does not constitute a Federal Major Modification.

9. Rule 2410 – Prevention of Significant Deterioration (PSD) Applicability Determination

Rule 2410 applies to any pollutant regulated under the Clean Air Act, except those for which the District has been classified nonattainment. The pollutants which must be addressed in the PSD applicability determination for sources located in the SJV and which are emitted in this project are: (See 52.21 (b) (23) definition of significant)

- NO2 (as a primary pollutant)
- SO2 (as a primary pollutant)
- CO
- PM
- PM10
- Sulfuric acid mist
- Hydrogen sulfide (H2S)
- Total reduced sulfur (including H2S)
- Reduced sulfur compounds

I. Project Emissions Increase - New Major Source Determination

The post-project potentials to emit from all new and modified units are compared to the PSD major source thresholds to determine if the project constitutes a new major source subject to PSD requirements.

The facility or the equipment evaluated under this project is not listed as one of the categories specified in 40 CFR 52.21 (b)(1)(i). The PSD Major Source threshold is 250 tpy for any regulated NSR pollutant.

PSD Major Source Determination: Potential to Emit (tons/year)						
	NO_2	**VOC**	**SO_2**	**CO**	**PM**	**PM_{10}**
Total PE from New and Modified Units*	7.5	6.0	3.7	13.7	4.0	4.0
PSD Major Source threshold	250	250	250	250	250	250
New PSD Major Source?	N	N	N	N	N	N

*see table below

	NO_X	**SO_X**	**PM_{10}**	**$PM_{2.5}$**	**CO**	**VOC**
N-7488-5	268	42	112	112	162	4491
N-7488-16	6938	2472	3816	3816	9540	3469
N-7488-17	6938	2472	3816	3816	9540	3469
N-7488-18						
N-7488-25	883	2483	331	331	8168	607
N-7488-26	0	0	0	0	0	13
Total	15,027	7,469	8,075	8,075	27,410	12,049

As shown in the table above, the potential to emit for the project, by itself, does not exceed any PSD major source threshold. Therefore Rule 2410 is not applicable and no further analysis is required.

10. Quarterly Net Emissions Change (QNEC)

The QNEC is calculated solely to establish emissions that are used to complete the District's PAS emissions profile screen. There is no change in emissions from '-5 and '-16 through '-18 and therefore QNEC = 0. QNEC = PE2/4 for '-25 and '-26.

QNEC (lb/qtr)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
N-7488-5					
PE2	268	42	112	162	4491
PE1	268	42	112	162	5121
QNEC	0	0	0	0	-157.5

QNEC (lb/qtr)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
N-7488-25					
PE2	883	2483	371	8,168	607
QNEC	220.75	620.75	92.75	2042	151.75

QNEC (lb/qtr)					
Permit Unit	**NO_X**	**SO_X**	**PM_{10}**	**CO**	**VOC**
N-7488-26					
PE2	0	0	0	0	13
QNEC	0	0	0	0	3.25

VIII. Compliance Determination

Rule 2201 New and Modified Stationary Source Review Rule

A. Best Available Control Technology (BACT)

1. BACT Applicability

Pursuant to District Rule 2201, Section 4.1, BACT requirements are triggered on a pollutant-by-pollutant basis and on an emissions unit-by-emissions unit basis. Unless specifically exempted by Rule 2201, BACT shall be required for the following actions*:

a. Any new emissions unit with a potential to emit exceeding two pounds per day,
b. The relocation from one Stationary Source to another of an existing emissions unit with a potential to emit exceeding two pounds per day,
c. Modifications to an existing emissions unit with a valid Permit to Operate resulting in an Adjusted Increase in Permitted Emissions (AIPE) exceeding two pounds per day, and/or
d. Any new or modified emissions unit, in a stationary source project, which results in an SB 288 Major Modification or a Federal Major Modification, as defined by the rule.

*Except for CO emissions from a new or modified emissions unit at a Stationary Source with an SSPE2 of less than 200,000 pounds per year of CO.

a. New emissions units – PE > 2 lb/day

As seen in Section VII.C.2 above, the applicant is proposing to install a new boiler ('-25) and biogas cleanup plant ('-26). Emissions from the boiler exceed 2 lb/day for NOx, SOx, and CO. BACT is triggered for NO_X and SOx since the PEs are greater than 2 lb/day. However BACT is not triggered for CO since the SSPE2 for CO is not greater than 200,000 lb/year, as demonstrated in Section VII.C.5 above.

b. Relocation of emissions units – PE > 2 lb/day

As discussed in Section I above, there are no emissions units being relocated from one stationary source to another; therefore BACT is not triggered.

c. Modification of emissions units – AIPE > 2 lb/day

AIPE = PE2 – HAPE

Where,

AIPE = Adjusted Increase in Permitted Emissions, (lb/day)
PE2 = Post-Project Potential to Emit, (lb/day)
HAPE = Historically Adjusted Potential to Emit, (lb/day)

HAPE = PE1 x (EF2/EF1)

Where,

PE1 = The emissions unit's PE prior to modification or relocation, (lb/day)
EF2 = The emissions unit's permitted emission factor for the pollutant after modification or relocation. If EF2 is greater than EF1 then EF2/EF1 shall be set to 1
EF1 = The emissions unit's permitted emission factor for the pollutant before the modification or relocation

AIPE = PE2 – (PE1 ∗ (EF2 / EF1))

<u>N-7488-5, '-16 thru '-18</u>

<u>PE1 = PE2, EF1 = EF2, AIPE = 0 for all pollutants.</u>

As demonstrated above, the AIPE is not greater than 2.0 lb/day for all pollutants. Therefore, BACT is not triggered for these permit units.

d. SB 288/Federal Major Modification

As discussed in Sections VII.C.7 and VII.C.8 above, this project does not constitute an SB 288 and/or Federal Major Modification for any pollutant. Therefore BACT is not triggered for any pollutant.

2. BACT Guideline

The proposed boiler will combust treated dairy biogas. Due to the unique nature of this operation, a project specific BACT analysis will be performed.

NOx

BACT is satisfied with 7 ppmv @ 3% NOx.

SOx

BACT is satisfied by combustion of biogas fuel with sulfur inlet concentration of 80 ppmv.

2. Top-Down BACT Analysis – Attachment V

Per Permit Services Policies and Procedures for BACT, a Top-Down BACT analysis shall be performed as a part of the application review for each application subject to the BACT requirements pursuant to the District's NSR Rule.

There are no current BACT Guidelines for boilers fired on renewable biogas. Therefore, a project specific BACT analysis will be performed.

BACT was satisfied with the following:

NOx: 7 ppmv @ 15% O2
SOx: biogas fuel with sulfur inlet concentration of 80 ppmv

B. Offsets

1. Offset Applicability

Pursuant to District Rule 2201, Section 4.5, offset requirements shall be triggered on a pollutant by pollutant basis and shall be required if the SSPE2 equals or exceeds the offset threshold levels in Table 4-1 of Rule 2201.
The SSPE2 is compared to the offset thresholds in the following table.

Offset Determination (lb/year)					
	NO_X	SO_X	PM_{10}	CO	VOC
SSPE2	15,809	7488	16,221	29,959	28,780
Offset Thresholds	20,000	54,750	29,200	200,000	20,000
Offsets triggered?	No	No	No	No	No

2. Quantity of Offsets Required

As seen above, the SSPE2 is greater than the offset thresholds for VOCs; therefore offset calculations are necessary (for VOCs only). There is a reduction in facility VOC emissions and BE = PE1 for all project permit units. Offsets will not be required for this project.

C. Public Notification

1. Applicability

Pursuant to District Rule 2201, Section 5.4, public noticing is required for:

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications,
b. Any new emissions unit with a Potential to Emit greater than 100 pounds during any one day for any one pollutant,
c. Any project which results in the offset thresholds being surpassed,
d. Any project with an SSIPE of greater than 20,000 lb/year for any pollutant, and/or
e. Any project which results in a Title V significant permit modification

a. New Major Sources, Federal Major Modifications, and SB 288 Major Modifications

New Major Sources are new facilities, which are also Major Sources. As shown in Section VII.C.5 above, the SSPE2 is not greater than the Major Source threshold for any pollutant. Therefore, public noticing is not required for this project for new Major Source purposes.

b. PE > 100 lb/day

Applications which include a new emissions unit with a PE greater than 100 pounds during any one day for any pollutant will trigger public noticing requirements. As seen in Section VII.C.2 above, this project does not include a new emissions unit which has daily emissions greater than 100 lb/day for any pollutant, therefore public noticing for PE > 100 lb/day purposes is not required.

c. Offset Threshold

Public notification is required if the pre-project Stationary Source Potential to Emit (SSPE1) is increased to a level exceeding the offset threshold levels. The following table compares the SSPE1 with the SSPE2 in order to determine if any offset thresholds have been surpassed with this project.

Offset Thresholds				
Pollutant	**SSPE1 (lb/year)**	**SSPE2 (lb/year)**	**Offset Threshold**	**Public Notice Required?**
NO_X	14,926	15,809	20,000 lb/year	No
SO_X	5,005	7,488	54,750 lb/year	No
PM_{10}	15,850	16,221	29,200 lb/year	No
CO	21,791	29,959	200,000 lb/year	No
VOC	28,790	28,780	20,000 lb/year	No

As detailed above, there were no thresholds surpassed with this project; therefore public noticing is not required for offset purposes.

d. SSIPE > 20,000 lb/year

Public notification is required for any permitting action that results in a SSIPE of more than 20,000 lb/year of any affected pollutant. According to District policy, the SSIPE = SSPE2 – SSPE1. The SSIPE is compared to the SSIPE Public Notice thresholds in the following table.

SSIPE Public Notice Thresholds					
Pollutant	**SSPE2 (lb/year)**	**SSPE1 (lb/year)**	**SSIPE (lb/year)**	**SSIPE Public Notice Threshold**	**Public Notice Required?**
NO_x	15,809	14,926	883	20,000 lb/year	No
SO_x	7,488	5,005	2,483	20,000 lb/year	No
PM_{10}	16,221	15,850	371	20,000 lb/year	No
CO	29,959	21,791	8,168	20,000 lb/year	No
VOC	28,780	28,790	-10	20,000 lb/year	No

As demonstrated above, the SSIPEs for all pollutants were less than 20,000 lb/year; therefore public noticing for SSIPE purposes is not required.

e. Title V Significant Permit Modification

Since this facility does not have a Title V operating permit, this change is not a Title V significant Modification, and therefore public noticing is not required.

2. Public Notice Action

As discussed above, this project will not result in emissions, for any pollutant, which would subject the project to any of the noticing requirements listed above. Therefore, public notice will not be required for this project.

D. Daily Emission Limits (DELs)

DELs and other enforceable conditions are required by Rule 2201 to restrict a unit's maximum daily emissions, to a level at or below the emissions associated with the maximum design capacity. The DEL must be contained in the latest ATC and contained in or enforced by the latest PTO and enforceable, in a practicable manner, on a daily basis. DELs are also required to enforce the applicability of BACT.

Proposed Rule 2201 (DEL) Conditions:

N-7488-5, '-16 through '-18

No change to DEL conditions is proposed.

N-7488-25-0

NOx (as NO2) emissions shall not exceed 7 ppmvd @ 3% O2. [District Rules 4305, 4306 and 4320] N

CO emissions shall not exceed 100 ppmvd @ 3%O2. [District Rules 2201, 4305, 4306 and 4320] N

VOC emissions shall not exceed 0.0055 lb/MMBtu. [District Rule 2201] N

PM10 emissions shall not exceed 0.003 lb/MMBtu. [District Rule 2201] N

H2S concentration is gas combusted by boiler shall not exceed 80 ppmv. [District Rule 2201] N

N-7488-26-0

VOC emissions from operation shall not exceed any of the following: 0.0 lb/day and 1 lb/yr. [District Rule 2201] N

Total sulfur emissions from operation shall not exceed any of the following: 0.2 lb/day and 23 lb/yr. [District Rule 2201] N

Venting of off-spec biogas to atmosphere shall be done no more than any of the following: 6 hr/day max, 551 hrs/yr. [District Rule 2201] N

E. Compliance Assurance

1. Source Testing

N-7488-25

Startup source testing for NOx and CO of new boiler N-7488-25-0 while fired on conditioned (plant inlet) biogas will be required.

District Rule 4320 requires NO_X and CO emission testing not less than once every 12 months. Gaseous fuel fired units demonstrating compliance on two consecutive compliance source tests may defer the following source test for up to thirty-six months. The District Source Test Policy (APR 1705) requires annual testing for all pollutants controlled by catalysts. The control equipment will include a SCR system and ammonia slip is an indicator of how well the SCR system is performing.

Therefore, source testing for NO_X, CO, and ammonia will be required within 60 days of initial operation and at least once every 12 months thereafter. Upon demonstrating compliance on two consecutive source tests, the following source test may be deferred for up to thirty-six months. Source testing for Rule 4320 also satisfies any source testing requirements for Rule 2201. No additional source testing is required.

N-7488-26

Initial compliance with VOC control efficiency (of activated carbon) requirements shall be demonstrated by the results of the laboratory sample analysis. The results shall be submitted to the District within 60 days of the test. [District Rule 1081] N

2. Monitoring

District Rule 4320 requires the owner of any unit equipped with NO_X reduction technology shall either install and maintain continuous emissions monitoring equipment for NO_X, CO, and oxygen, as identified in Rule 1080 (Stack Monitoring), or install and maintain APCO-approved alternate monitoring plan. Since the boiler will be equipped with a low NO_X burner and a selective catalytic reduction system, this requirement applies.

N-7488-25

The applicant proposed to utilize pre-approve alternate monitoring plan “A” (Periodic Monitoring NO_X, CO, and O_2 Emissions Concentrations) to meet the requirements of District Rule 4320. Monitoring for Rule 4320 also satisfies the monitoring requirements for Rule 2201. No additional monitoring is required.

N-7488-26

Ongoing compliance with VOC emission rate and control efficiency requirements shall be demonstrated at least once per week by sampling both the influent and the effluent gas

streams with an FID, PID, or other District-approved VOC detection device. [District Rule 2201] N

Permittee may request District approval to reduce the monitoring frequency (of activated carbon) from weekly to monthly by providing to the District weekly monitoring data or design information indicating that breakthrough does not occur using a single carbon canister at maximum gas flow and VOC loading

VOC content of the vapor processed through this operation shall not exceed 10% by weight. Permittee shall sample and record the VOC content of the vapor at least once every 12 months. The sample shall be taken on the main vapor line after all individual vapor streams are combined and prior to the sulfur scrubbers. [District Rules 1070 and 2201] N

3. Recordkeeping

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

N-7488-25

Permittee shall determine sulfur content of combusted gas annually or shall demonstrate that the combusted gas is provided from a PUC or FERC regulated source. [District Rules 1081, 2201, and 4320] N

The permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [40 CFR 60.48c(g)] N

All records shall be maintained and retained on-site for a minimum of five years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320] N

N-7488-26

Recordkeeping is required to demonstrate compliance with the offset, public notification and daily emission limit requirements of Rule 2201. The following condition(s) are listed on the permit to operate:

Records of the cumulative running time of activated carbon adsorbers and the measured influent and effluent VOC concentrations shall be maintained. [District Rule 2201] N

Daily records of cumulative time of venting of offspec biogas shall be maintained. [District Rule 2201] N

Sulfur concentration (H2S) of sulfur removal system outlet gas shall be measured monthly. [District Rule 2201] N

Permittee shall maintain accurate records of all VOC and H2S concentration test results, and influent and effluent flow rates, total number of hours of operation on each day and dates of operation. [District Rule 1070] N

Records shall be maintained for a period of five years and shall be made available for District inspection upon request. [District Rule 2201] N

4. Reporting

No reporting is required to demonstrate compliance with Rule 2201.

Rule 2410 Prevention of Significant Deterioration

As shown in Section VII.C.9 above, this project does not result in a new PSD major source or PSD major modification. No further discussion is required.

Rule 4001 New Source Performance Standards (NSPS)

40 CFR Part 60 Subpart Dc Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

This rule incorporates NSPS from Part 60, Chapter 1, Title 40, Code of Federal Regulations (CFR); and applies to all new sources of air pollution and modifications of existing sources of air pollution listed in 40 CFR Part 60. 40 CFR Part 60, Subpart Dc applies to Small Industrial-Commercial-Industrial Steam Generators between 10 MMBtu/hr and 100 MMBtu/hr (post-6/9/89 construction, modification or, reconstruction). Subpart Dc has standards for SO_X and PM_{10}. The 12.6 MMBtu/hr boiler is subject to Subpart Dc requirements.

60.42c – Standards for Sulfur Dioxide

Since coal is not combusted by the proposed boiler in this project, the requirements of this section are not applicable.

60.43c – Standards for Particulate Matter

The boiler will not be fired on coal, combust mixtures of coal with other fuels, combust wood, combust mixtures of wood with other fuels, or oil; therefore, it will not be subject to the requirements of this section.

60.44c – Compliance and Performance Tests Methods and Procedures for Sulfur Dioxide.

Since the boiler in this project is not subject to the sulfur dioxide requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable.

60.45c – Compliance and Performance Test Methods and Procedures for Particulate Matter

Since the boiler in this project are not subject to the particulate matter requirements of this subpart, no testing to show compliance is required. Therefore, the requirements of this section are not applicable.

60.46c – Emission Monitoring for Sulfur Dioxide

Since the boiler in this project is not subject to the sulfur dioxide requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable.

60.47c – Emission Monitoring for Particulate Matter

Since the steam generators in this project is not subject to the particulate matter requirements of this subpart, no monitoring is required. Therefore, the requirements of this section are not applicable.

60.48c – Reporting and Recordingkeeping Requirements

Section 60.48c (a) states that the owner or operator of each affected facility shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup, as provided by §60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

The design heat input capacity and type of fuel combusted at the facility will be listed on the unit's equipment description. No conditions are required to show compliance with this requirement.

(2) If applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel mixture of fuels under §60.42c or §40.43c.

This requirement is not applicable since the unit is not subject to §60.42c or §40.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

The facility has not proposed an annual capacity factor; therefore one will not be required.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of §60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

This requirement is not applicable since the unit will not be equipped with an emerging technology used to control SO_2 emissions.

District Rule 4001, §3.0 defines the Administrator as the APCO of the District. The following condition ensures compliance:

Permittee shall submit notification to the District of the date of construction, anticipated startup, and actual startup. Notifications shall be postmarked no later than 30 days after construction and 15 days after actual startup. The notifications shall include the design heat input and identification of fuels for this permit unit. [40 CFR 60.48c (a)]

Section 60.48c (g) states that the owner or operator of each affected facility shall record and maintain records of the amounts of each fuel combusted during each day. The following conditions will be added to the permit to ensure compliance with this section.

A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of fuel combusted in the unit shall be installed, utilized and maintained. [District Rule 2201 and 40 CFR 60.48c (g)]

Permittee shall maintain daily records of the type and quantity of fuel combusted by the steam generator. [District Rule 2201 and 40 CFR 60.48c (g)]

Section 60.48c (i) states that all records required under this section shall be maintained by the owner or operator of the affected facility for a period of two years following the date of such record. District Rule 4320 requires that records be kept for five years. Compliance is ensured with the following condition:

All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306, 4320, and 40 CFR 60.48c (i)]

Therefore, compliance with the requirements of this rule is expected.

Rule 4101 Visible Emissions

Rule 4101 states that no person shall discharge into the atmosphere emissions of any air contaminant aggregating more than 3 minutes in any hour which is as dark as or darker than Ringelmann 1 (or 20% opacity). As the existing and proposed boilers and IC engine are fired solely on natural and treated digester gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity. Also, based on past inspections of the facility continued compliance is expected.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

An HRA is not required for a project with a total facility prioritization score of less than one. According to the Technical Services Memo for this project (**Attachment VI**), the total facility prioritization score including this project was greater than one. Therefore, an HRA was required to determine the short-term acute and long-term chronic exposure from this project.

The cancer risk for this project is shown below:

RMR

Units	Prioritization Score	Acute Hazard Index	Chronic Hazard Index	Maximum Individual Cancer Risk	T-BACT Required	Special Permit Requirements
25-0	0.42	0.11	0.00	5.04E-08	No	Yes
26-0	0.04	0.01	0.00	0.00E+00	No	No
Project Totals	0.46	0.12	0.00	5.04E-08		
Facility Totals	>1	0.25	0.04	6.58E-07		

Proposed Permit Requirements

To ensure that human health risks will not exceed District allowable levels; the following shall be included as requirements for:

Unit # 25-0

1. The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap (flapper ok), roof overhang, or any other obstruction.

Unit # 26-0

1. No special requirements.

Discussion of T-BACT

BACT for toxic emission control (T-BACT) is required if the cancer risk exceeds one in one million. As demonstrated above, T-BACT is not required for this project because the HRA indicates that the risk is not above the District's thresholds for triggering T-BACT requirements; therefore, compliance with the District's Risk Management Policy is expected.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot. As the existing and proposed combustion devices are fired solely on natural and treated digestor gas, visible emissions are not expected to exceed Ringelmann 1 or 20% opacity.

Rule 4201 Particulate Matter Concentration

Section 3.1 prohibits discharge of dust, fumes, or total particulate matter into the atmosphere from any single source operation in excess of 0.1 grain per dry standard cubic foot. Boilers N-7488-16 through '-18 are operating in compliance with the rule. Combustion of offspec RNG is not expected to affect compliance status of boilers N-7488-16 through '-18.

N-7488-25

F-Factor for NG: 8,578 dscf/MMBtu at 60 °F
PM_{10} Emission Factor: 0.003 lb-PM_{10}/MMBtu
Percentage of PM as PM_{10} in Exhaust: 100%
Exhaust Oxygen (O_2) Concentration: 3%
Excess Air Correction to F Factor = $\frac{20.9}{(20.9-3)} = 1.17$

0.003 lb-PM_{10}/MMBtu x 7000 gr/lb/(8,578 dscf/MMBtu at 60 °F x 1.17)

$$GL = 0.002\ grain/dscf < 0.1 grain/dscf$$

Therefore, compliance with the requirements of this rule is expected.

District Rule 4301 Fuel Burning Equipment

This rule specifies maximum emission rates in lb/hr for SO_2, NO_2, and combustion contaminants (defined as total PM in Rule 1020). This rule also limits combustion contaminants to $\leq$ 0.1 gr/scf. According to AP-42 (Table 1.4-2, footnote c), all PM emissions from natural gas combustion are less than 1 μm in diameter.

Existing boilers N-7488-16 through '-18 are operating in compliance with the rule and continued compliance is expected.

N-7488-25

District Rule 4301 Limits (lb/hr)			
Pollutant	NO_2	Total PM	SO_2
N-7488-25	0.008 lb/MMBtu x 12.6 MMBtu/hr = 0.1	0.003 x 12.6 = 0.04	0.0225 x 12.6 = 0.284
Rule Limit	140	10	200

The above table indicates compliance with the maximum lb/hr emissions in this rule; therefore, continued compliance is expected.

Rule 4305 Boilers, Steam Generators and Process Heaters – Phase 2

Pursuant to Rule 4305, Section 2.0, the proposed new unit will be subject to Rule 4305. Also, the proposed new unit will also be subject to Rule 4306. Since emissions limits of Rule 4306 and all other requirements are equivalent to or more stringent than Rule 4305 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4305.

Rule 4306 Boilers, Steam Generators and Process Heaters – Phase 3

Pursuant to Rule 4306, Section 2.0, the proposed unit will be subject to Rule 4306. Also, the proposed unit will also be subject to Rule 4320. Since emissions limits of Rule 4320 and all other requirements are equivalent to or more stringent than Rule 4306 requirements, compliance with Rule 4320 requirements will satisfy requirements of Rule 4306.

Rule 4320 Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr

This rule limits NOx, CO, SO2 and PM10 emissions from boilers, steam generators and process heaters rated greater than 5 MMBtu/hr. The steam generators are rated at greater than 5 MMBtu/hr heat input. Therefore, this rule applies.

Existing boilers N-7488-16 through '-18 are operating in compliance with the rule and continued compliance is expected.

Section 5.1 NOx Emission Limits

Section 5.1 states that an operator of a unit(s) subject to this rule shall comply with all applicable requirements of the rule and one of the following, on a unit-by-unit basis:

- Operate the unit to comply with the emission limits specified in Sections 5.2 and 5.4; or
- Pay an annual emissions fee to the District as specified in Section 5.3 and comply with the control requirements specified in Section 5.4; or
- Comply with the applicable Low-use Unit requirements of Section 5.5.

Section 5.2.1 states that on and after the indicated Compliance Deadline units shall not be operated in a manner which exceeds the applicable NO_x limit specified in Table 1 of this rule.

The new boiler has a maximum heat input of 12.6 MMBtu/hr; therefore, the applicable emission limit category Section 5.2, Table 1, Category C.2 from District Rule 4320 applies as follows:

Rule 4320 Emissions Limits				
Category	**Operated on gaseous fuel**		**Operated on liquid fuel**	
	NO_X Limit	**CO Limit**	**NO_X Limit**	**CO Limit**
A. Units with a total rated heat input > 5.0 MMBtu/hr to < 20.0 MMBtu/hr, except for Categories C through G units	a) Standard Schedule 9 ppmv or 0.011 lb/MMBtu; or	400 ppmv	40 ppmv or 0.052 lb/MMBtu	400 ppmv
	b) Enhanced Schedule 6 ppmv or 0.007 lb/MMBtu			
	b) Enhanced Schedule 5 ppmv or 0.0062 lb/MMBtu			

Aemetis has proposed to comply with Rule 4320 by limiting the burners to 7 ppm-NO_X @ 3% O_2 (or 0.008 lb-NO_X/MMBtu). The following condition will be listed on the ATCs to ensure compliance:

Section 5.4 Particulate Matter Control Requirements

5.4.1 To limit particulate matter emissions, an operator shall comply with one of the following requirements:

5.4.1.1 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall fire units exclusively on PUC-quality natural gas, commercial propane, butane, or liquefied petroleum gas, or a combination of such gases;

5.4.1.2 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall limit fuel sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet; or

5.4.1.3 On and after the applicable NOx Compliance Deadline specified in Section 5.2 Table 1, operators shall install and properly operate an emission control system that reduces SO_2 emissions by at least 95% by weight; or limit exhaust SO_2 to less than or equal to 9 ppmv corrected to 3.0% O2.

5.4.1.4 Notwithstanding the compliance deadlines indicated in Sections 5.4.1.1 through 5.4.1.3, refinery units, which require modification of refinery equipment to reduce sulfur emissions, shall be in compliance with the applicable requirement in Section 5.4.1 no later than July 1, 2013.

Aemetis has addressed the particulate matter requirement by proposing to fire the unit on fuel with a sulfur content to no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet.

80 ft^3 $H_2S/10^6$ ft^3 gas x lbmol H_2S/379 ft^3 H_2S x 34 lb H_2S/lbmol H_2S x 32 lb S/34 lb H_2S x 7000 gr/lb x 100

= 4.72 gr S/100 scf

Compliance with Section 5.4 is expected.

Section 5.6 Startup and Shutdown Provisions

Section 5.6 states that on and after the full compliance deadline specified in Section 5.0, the applicable emission limits of Sections 5.2 Table 1 and 5.5.2 shall not apply during start-up or shutdown provided an operator complies with the requirements specified in Sections 5.6.1 through 5.6.5.

Emissions during start-up and shutdown are not be subject to the emission limits in Sections 5.2 and 5.2.2. Start-up and shutdown provisions are not proposed.

Section 5.7 Monitoring Provisions

Section 5.7.1 requires that permit units subject to District Rule 4320, Section 5.2 shall both install and maintain an operational APCO approved Continuous Emission Monitoring System (CEMS) for NO_X, CO and O_2, or implement an APCO-approved alternate monitoring.

Aemetis proposes to use Alternate Monitoring Scheme A (pursuant to District Policy SSP-1105), which requires that monitoring of NO_X, CO, and O_2 exhaust concentrations shall be conducted at least once per month (in which a source test is not performed) using a portable analyzer. The following conditions will be incorporated into the ATCs to ensure compliance with the requirements of the proposed alternate monitoring plan:

{4063} The permittee shall monitor and record the stack concentration of NOX, CO, and O2 at least once every month (in which a source test is not performed) using a portable analyzer that meets District specifications. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within 5 days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306, and 4320]

If the NOx or CO concentrations corrected to 3%, as measured by the portable analyzer, exceed the applicable emission limit, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than 1 hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after 1 hour of

operation after detection, the permittee shall notify the District within the following 1 hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of performing the notification and testing required by this condition. [District Rules 4102, 4305, 4306 and 4320] Y

All NOx, CO, and O2 emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The NOx, CO, and O2 analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute sample period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive minute period. [District Rules 4102, 4305, 4306 and 4320] Y

{4066} The permittee shall maintain records of: (1) the date and time of NOX, CO, and O2 measurements, (2) the O2 concentration in percent by volume and the measured NOX and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320]

All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the PTO, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4320. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306 and 4320] Y

Section 5.7.6 requires operators complying with Sections 5.4.1.1 or 5.4.1.2 to provide an annual fuel analysis to the District unless a more frequent sampling and reporting period is included in the Permits to Operate. Sulfur analysis shall be performed in accordance with the test methods in Section 6.2.

When complying with sulfur emission limits by fuel analysis or by a combination of source testing and fuel analysis, permittee shall demonstrate compliance at least annually. [District Rule 4320]

The following condition will be listed on the ATCs to ensure compliance with the reporting section of this requirement:

All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320]

Section 5.8 Compliance Determination

Section 5.8.1 requires that the operator of any unit shall have the option of complying with either the applicable heat input (lb/MMBtu), emission limits or the concentration (ppmv) emission limits specified in Section 5.2. The emission limits selected to demonstrate compliance shall be specified in the source test proposal pursuant to Rule 1081 (Source Sampling).
Therefore, the following condition will be listed on the ATCs as follows:

{2976} The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305, 4306, and 4320]

Section 5.8.2 requires that all emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0.

Therefore, the following permit condition will be listed on the ATCs as follows:

{2972} All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. Unless otherwise specified in the Permit to Operate, no determination of compliance shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0. For the purposes of permittee-performed alternate monitoring, emissions measurements may be performed at any time after the unit reaches conditions representative of normal operation. [District Rules 4305, 4306, and 4320]
Section 5.8.4 requires that for emissions monitoring pursuant to Sections 5.7.1 and 6.3.1 using a portable NO_X analyzer as part of an APCO approved Alternate Emissions Monitoring System, emission readings shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15-consecutive-minute sample reading or by taking at least five (5) readings evenly spaced out over the 15-consecutive-minute period.

Therefore, the following permit condition will be listed on the ATCs as follows:

{4065} All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the permit-to-operate. The analyzer shall be calibrated, maintained, and operated in accordance with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320]

Section 5.8.5 requires that for emissions source testing performed pursuant to Section 6.3.1 for the purpose of determining compliance with an applicable standard or numerical limitation of this rule, the arithmetic average of three (3) 30-consecutive-minute test runs shall apply. If two (2) of three (3) runs are above an applicable limit the test cannot be used to demonstrate compliance

with an applicable limit. Therefore, the following permit condition will be listed on the ATCs as follows:

{2980} For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Section 6.1 Recordkeeping

Section 6.1 requires that the records required by Sections 6.1.1 through 6.1.5 shall be maintained for five calendar years and shall be made available to the APCO and EPA upon request. Failure to maintain records or information contained in the records that demonstrate noncompliance with the applicable requirements of this rule shall constitute a violation of this rule.

A permit condition will be listed on the ATCs as follows:

All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320]

Section 6.2, Test Methods

Section 6.2 identifies the following test methods as District-approved source testing methods for the pollutants listed:

Pollutant	Units	Test Method Required
NO_X	ppmv	EPA Method 7E or ARB Method 100
NO_X	lb/MMBtu	EPA Method 19
CO	ppmv	EPA Method 10 or ARB Method 100
Stack Gas O_2	%	EPA Method 3 or 3A, or ARB Method 100
Stack Gas Velocities	ft/min	EPA Method 2
Stack Gas Moisture Content	%	EPA Method 4
Oxides of sulfur		EPA Method 6C, EPA Method 8, or ARB Method 100
Total Sulfur as Hydrogen Sulfide (H_2S) Content		EPA Method 11 or EPA Method 15, as appropriate.
Sulfur Content of Liquid Fuel		ASTM D 6920-03 or ASTM D 5453-99

The following permit condition will be listed on the ATCs as follows:

The following test methods shall be used: NOX (ppmv) - EPA Method 7E or ARB Method 100, NOx (lb/MMBtu) - EPA Method 19; CO (ppmv) - EPA Method 10 or ARB Method 100; Stack gas oxygen (O2) - EPA Method 3 or 3A or ARB Method 100; stack gas velocities - EPA Method 2;

Stack gas moisture content - EPA Method 4; SOx - EPA Method 6C or 8 or ARB Method 100; fuel gas sulfur as H2S content - EPA Method 11 or 15; and fuel hhv (MMBtu) - ASTM D 1826 or D 1945 in conjunction with ASTM D 3588. [District Rule 2201, 4305, 4306, 4320] N

Section 6.3, Compliance Testing

Section 6.3.1 requires that this unit be tested to determine compliance with the applicable requirements of section 5.1 and 5.2.3 not less than once every 12 months. Upon demonstrating compliance on two consecutive compliance source tests, the following source test may be deferred for up to thirty-six months.

The following permit conditions will be listed on the ATCs:

A source test to demonstrate compliance with NOx and CO emission limits shall be performed within 60 days of startup of this unit. [District Rules 220, 4305, 4306 and 4320]

Source testing to measure natural gas-combustion NOx and CO emissions from this unit shall be conducted at least once every twelve (12) months (no more than 30 days before or after the required annual source test date). After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months (no more than 30 days before or after the required 36-month source test date). If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320]

The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Section 7.0, Compliance Schedule

Section 7.0 identifies the dates by which the operator shall submit an application for an ATC and the date by which the owner shall demonstrate compliance with this rule.

The unit will be in compliance with the emissions limits listed in Table 1, Section 5.2 of this rule, and periodic monitoring and source testing as required by District Rule 4320. Therefore, requirements of the compliance schedule, as listed in Section 7.0 of District Rule 4320, are satisfied. No further discussion is required.

Conclusion

Conditions will be incorporated into the permit in order to ensure compliance with each section of this rule. Therefore, compliance with District Rule 4320 requirements is expected.

Rule 4801 Sulfur Compounds

A person shall not discharge into the atmosphere sulfur compounds, which would exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 % by volume calculated as SO_2, on a dry basis averaged over 15 consecutive minutes. As the combustion equipment associated with this project will be fired on PUC-regulated natural gas or

biogas containing a small amount of H_2S, compliance with the requirements of this rule is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- 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; and
- 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.

Greenhouse Gas (GHG) Significance Determination

<u>District is a Lead Agency and Project not Covered Under Cap-and-Trade</u>

It is determined that no other agency has or will prepare an environmental review document for the project. Thus the District is the Lead Agency for this project. The District's engineering evaluation (this document) demonstrates that the project would not result in an increase in project specific greenhouse gas emissions. The District therefore concludes that the project would have a less than cumulatively significant impact on global climate change.

District CEQA Findings

The District performed an Engineering Evaluation (this document) for the proposed project and determined that the project will occur at an existing facility and the project involves negligible or no expansion of the existing use. Furthermore, the District determined that the project will not have a significant effect on the environment. The District finds that the project is categorically exempt from the provisions of CEQA pursuant to CEQA Guideline §15301 (Existing Facilities), and finds that the project is exempt per the general rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment (CEQA Guidelines §15061(b)(3)).

Indemnification Agreement/Letter of Credit Determination

According to District Policy APR 2010 (CEQA Implementation Policy), when the District is the Lead or Responsible Agency for CEQA purposes, an indemnification agreement and/or a letter of credit may be required. The decision to require an indemnity agreement and/or a letter of credit is based on a case-by-case analysis of a particular project's potential for litigation risk, which in turn may be based on a project's potential to generate public concern, its potential for significant impacts, and the project proponent's ability to pay for the costs of litigation without a letter of credit, among other factors.

The criteria pollutant emissions and toxic air contaminant emissions associated with the proposed project are not significant, and there is minimal potential for public concern for this particular facility/operation. Therefore, an Indemnification Agreement and/or a Letter of Credit will not be required for this project in the absence of expressed public concern.

If not covered above, discuss and obtain the appropriate IA/LOC language from Technical Services which will address the reasons for requiring or not requiring an IA/LOC.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Issue ATCs N-7488-5-5, '-16-5, '-17-5, '-18-45, '-25-0, and '-26-0 subject to the permit conditions on the attached draft ATC in **Attachment VII.**

X. Billing Information

Annual Permit Fees			
Permit Number	**Fee Schedule**	**Fee Description**	**Annual Fee**
N-7488-5	**3020-01F**	**462.5 hp**	**$731**
N-7488-16	**3020-02H**	**99 MMBtu/hr**	**$1238**
N-7488-17	**3020-02H**	**99 MMBtu/hr**	**$1238**
N-7488-18	**3020-02H**	**99 MMBtu/hr**	**$1238**
N-7488-25	**3020-02G**	**12.6 MMBtu/hr**	**$980**
N-7488-26	3020-06	miscellaneous	$128

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September 6, 2019
Kleinfelder Project No.: 20200676

Mr. Richard Edgehill
San Joaquin Valley APCD
34946 Flyover Court
Bakersfield, California 93308

SUBJECT: Aemetis Advanced Fuels Keyes, Inc. Application for Authority to Construct Permit for a Biogas Cleanup Plant and an Additional Boiler at the Aemetis Fuel Ethanol Plant

Dear Mr. Edgehill:

This letter and attachments are submitted on behalf of Aemetis Advanced Fuels Keyes, Inc. (Aemetis) to request an Authority to Construct (ATC) for a new proposed Biogas Cleanup Plant to be located at the existing Aemetis Fuel Ethanol Plant site and an ATC for an additional new boiler at the Ethanol Plant.

There are four ATC applications included herein:

- New Biogas Cleanup Plant.
- New Boiler at the Ethanol Plant that will be fueled with either conditioned biogas, partially treated biogas, pipeline-quality renewable natural gas (RNG), or off-specification (off-spec) RNG.
- Modification to the Ethanol Plant Permit 7488-5-3, Regenerative Thermal Oxidizer (RTO), to allow the RTO to treat off-spec RNG and waste tail gas from the Biogas Cleanup Plant.
- Modification to the Ethanol Plant Boiler Permits 7488-16-4, 17-4, and 18-3 to allow the boilers to combust pipeline quality RNG generated by the Biogas Cleanup Plant.

Application forms for the ATC applications are attached herein.

Expedited processing of the permit application is requested. As is further illustrated below, there is a significant economic benefit to getting the Biogas Cleanup Plant operational because of offsetting purchase of commercial natural gas for the boilers. There is also a significant environmental benefit as the digester gas methane is currently being emitted to the atmosphere at the dairies but will be collected and combusted after the Biogas Cleanup Plant is operational, thus reducing greenhouse gas emissions. Aemetis recognizes that there will be additional permit processing costs associated with expedited processing and will pay those costs.

Furthermore, Aemetis requests that processing and issuance of the ATC for the new boiler take priority over the Biogas Cleanup Plant. As explained below, Aemetis could start receiving conditioned biogas and combusting it in the new boiler prior to the Biogas Cleanup Plant being available, thus prioritizing the new boiler will result in additional environmental benefit.

The Aemetis site is located at 4209 Jessup Road, Ceres, California 95307. Attachment 1 shows the general location of the Aemetis site and Attachment 2 shows the proposed location of the new

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Biogas Cleanup Plant (center of the Biogas Cleanup plant at UTM 684,047 E; 4,158,363 N). The nearest residence is located approximately 800 feet (center to center) northeast of the Biogas Cleanup Plant (684,225 E; 4,158,513 N) and the nearest business is located approximately 775 feet (center to center) southwest of the Biogas Cleanup Plant (683,932 E; 4,158,163 N).

1.0 BACKGROUND

Aemetis intends to collect digester gas from waste lagoons at several dairies in the vicinity of the proposed new Biogas Cleanup Plant. The dairies will remove most of the sulfur from the digester gas at the dairies and will then pipe that gas which has had most of the sulfur removed to the Aemetis Biogas Cleanup Plant. The gas coming from the dairies that has had most of the sulfur removed is termed herein as "conditioned biogas"). The Biogas Cleanup Plant will then remove additional sulfur compounds from the conditioned biogas in a "polishing step" at the Biogas Cleanup Plant to create "partially treated biogas". After polishing, carbon dioxide (CO_2) will then be removed from the partially treated biogas to create PUC-quality gas ("renewable natural gas" or RNG) that can be entered into the Pacific Gas & Electric (PG&E) natural gas transmission system. There may be occasions when the RNG does not quite meet PG&E specifications (primarily due to low heat content). This gas is termed "off-specification (off-spec) RNG".

As shown in Attachment 2, in the future there may be a compressed natural gas (CNG) plant installed, but currently, the RNG will either be sold to PG&E or used in the existing Ethanol Plant boilers. If a CNG plant is installed in the future, there will be essentially no emissions as the CNG Plant compressors and other equipment will be electrically driven. If an ATC is needed for the CNG Plant, it will be submitted in the future.

In summary, there are seven different types of fuel gas involved in this project, all with different qualities. The terms used for the different types of gas herein are as follows:

- Digester Gas: This is the initial biogas that is released during waste digestion in the lagoons at the dairies. It has not undergone any treatment and has a relatively high sulfur (3,500 to 5,000 ppmv) and CO_2 content. Digester gas exists only at the dairies.
- Conditioned Biogas: This is digester gas that has had most of the sulfur compounds removed at the dairies prior to piping to the Aemetis site. Conditioned biogas will have less than 80 parts per million by volume dry (ppmvd) hydrogen sulfide (H_2S) content, but relatively high CO_2 content. Conditioned biogas is what is piped to the Aemetis site.
- Partially Treated Biogas: This is conditioned biogas that has been polished at the Aemetis Biogas Cleanup Plant to remove some additional sulfur. Partially treated biogas will have less than 4 ppmvd H_2S, but the same CO_2 content as conditioned biogas.
- Waste Tail Gas: This is waste gas resulting from the CO_2 removal treatment system. Waste tail gas is further described below in Section 2, and it is not used for fuel at the Aemetis site.
- Renewable Natural Gas (RNG): This is partially treated biogas that has undergone another treatment step whereby most of the CO_2 is removed. RNG has very low CO_2 content and meets PG&E pipeline quality natural gas specifications. It is normally sold to PG&E and enters the PG&E transmission system.
- Off-spec RNG: This is RNG that does not quite meet PG&E specifications, primarily due to heat content.
- Commercial natural gas: This is PUC-regulated natural gas that the Aemetis Fuel Ethanol Plant currently purchases to fuel its boilers and other equipment at the Ethanol Plant.

In addition to constructing the new Biogas Cleanup Plant, Aemetis will install and operate the digester gas conditioning equipment (compressors and an iron sponge sulfur removal system) at the dairies.

Aemetis also plans to install a new 12.6 million Btu per hour (mmBtu/hr) boiler to provide additional process steam at the Ethanol Plant. The new boiler will be fueled with either conditioned biogas, partially treated biogas, off-spec RNG, pipeline quality RNG, commercial natural gas, or mixture of those gases. The new Boiler will be located adjacent to and east of the existing Ethanol Plant boilers at UTM 684,062 E, 4,158,316 N.

The Biogas Cleanup Plant will consist of the following main process devices:

- A dual bed carbon adsorption system to remove non-methane non-ethane volatile organic compounds (NMNEVOC) from the conditioned biogas. The same carbon adsorber system will also be used to remove sulfur compounds. This process is often termed “polishing”.
- A carbon dioxide membrane removal system to remove CO_2 from the partially treated biogas.
- A knock out pot to manage condensate from the treated biogas.
- Compressors and pumps.

The digester gas conditioning equipment at the dairies will consist of a chiller (gas dryer), compressor, and an iron sponge sulfur removal system. There are no routine emissions from the digester gas conditioning equipment at the dairies, and as discussed in Section 12 herein, no ATC is needed for the dairy digester gas conditioning equipment.

The output of the Biogas Cleanup Plant is pipeline quality RNG which has had both sulfur compounds and CO_2 removed. The pipeline quality RNG is sent to an adjacent meter set assembly (natural gas interconnection point) owned and operated by PG&E, where the pipeline quality RNG is entered into the PG&E transmission and distribution system.

2.0 PROCESS DESCRIPTION

Attachment 3 provides a simplified process flow diagram (PFD) for the Biogas Cleanup Plant. Conditioned biogas (i.e., digester gas that has had most of the sulfur removed) generated at nearby dairies will be piped to the proposed Aemetis Biogas Cleanup Plant. The Plant will receive up to 700 million standard cubic feet per year (mmscf/yr) of conditioned biogas. The maximum daily quantity of conditioned biogas received will be 2.952 mmscf/day or 2,050 standard cubic feet per minute (scfm).

The hydrogen sulfide (H_2S) content of the conditioned biogas entering the Biogas Cleanup Plant will be no more than 80 ppmvd. At the Biogas Cleanup Plant, the conditioned biogas will either enter a dual carbon bed adsorption system where more sulfur will be removed such that the H_2S content is no more than 4 ppmvd (termed “partially treated biogas”) or the conditioned biogas will be combusted in a new 12.6 mmBtu/hr boiler at the Ethanol Plant. The new boiler will provide additional process steam at the existing Fuel Ethanol Plant. The heat content of the conditioned biogas and the partially treated biogas is approximately 600 Btu/scf.

Partially treated biogas that is not combusted in the new boiler will be sent to a CO_2 membrane removal system where 97 percent of the CO_2 is removed. Up to 3 percent of the partially treated biogas entering the CO_2 membrane removal system is waste tail gas that will be routed to the existing Ethanol Plant regenerative thermal oxidizer (RTO) where it will be combusted. The gas

sent to the RTO is termed “waste tail gas” and the flow rate of waste tail gas to the RTO is a maximum of 815 scfm.

After passing through the CO_2 membrane removal system, the biogas is now of commercial pipeline quality (termed pipeline quality RNG) and it will be either sent to an entry point owned and operated by PG&E or combusted in the existing Ethanol Plant boilers. The preferred mode is to send the pipeline quality RNG to PG&E rather than combusting it in the Ethanol Plant boilers.

At times the RNG will not quite meet PG&E specifications for entry into their pipeline system. Gas that would not meet PG&E specifications is termed off-spec RNG. Typically, the gas would not meet PG&E specifications because of heat content. Off-spec RNG will have no more than 4 ppmvd H_2S content and will have a CO_2 content of no more than 1 percent. Off-spec RNG will either be routed to the Ethanol Plant RTO, combusted in the new boiler, combusted in the existing Ethanol Plant boilers, or vented to the atmosphere. The total flow rate of off-spec RNG is a maximum of 1,300 scfm. During normal operations, off-spec RNG venting would occur no more than 0.5 percent of the time, or 44 hours per year and no more than 2 hours in any given day. During startup and tuning of the Biogas Cleanup Plant, off-spec RNG venting could occur up to 25 percent of the time for 3 months, or a total of 540 hours and no more than 6 hours per day. For the remaining 9 months of the first year of operations, off-spec RNG could occur no more than 0.5% of the time, or another 11 hours and no more than 2 hours per day.

The only potential emissions at the Biogas Cleanup Plant are the vented CO_2 (and associated compounds) from the CO_2 removal system and possibly off-spec RNG that must be vented if the treated gas does not meet PG&E requirements. . A third party vendor will recharge the carbon adsorber system and will either dispose or regenerate the spent carbon. It is anticipated that the Biogas Cleanup Plant will generate on the order of 300 gallons of condensate per day. The condensate is essentially pure water vapor removed from the biogas by the knock out pot and the condensate will be disposed of in the existing Ethanol Plant wastewater drain system. The pumps, compressors, and associated equipment at the Biogas Cleanup Plant are all electrically driven. Although there are no new standby generators or fire pump engines required for the Biogas Cleanup Plant, the Aemetis Fuel Ethanol Plant has an extensive fire suppression system and a backup generator available for firefighting.

In order to capture digester gas at the dairies, additional structures and equipment will be needed at each dairy. The waste lagoons will be covered and an iron sponge sulfur removal system, chiller (gas dryer), and a compressor will be installed at the dairies. There are no routine emissions at the dairies from the digester gas conditioning equipment. The conditioned biogas will be piped through several miles of pipeline from the dairies to the Aemetis location. The conditioned biogas arrives at the Biogas Cleanup Plant under a pressure of about 65 pounds per square inch. If the Biogas Cleanup Plant is not operational, the conditioned biogas will either be “stored” in the covers at the dairies (for up to 4 days) or vented at the individual dairies. There are no backup flares or other devices required either at the dairies or at the Biogas Cleanup Plant. (Note there is a flare at the Ethanol Plant, but it is not used by the Biogas Cleanup Plant.)

If the Biogas Cleanup Plant must be shut down, there will be a small amount of biogas vented at the Aemetis site, but only to depressurize the piping at the Plant. This amount of gas will be de minimis.

Stanislaus County is the lead agency providing California Environmental Quality Act (CEQA) review for the entire project: activities at the dairies, the pipeline system, and the Aemetis Biogas

Cleanup Plant. The County has provided a CEQA review and a Notice of Determination is attached herein.

3.0 PRODUCT THROUGHPUT

The Biogas Cleanup Plant will be designed to handle up to 700,000,000 standard cubic feet per year (700 mmscf/yr) of conditioned biogas. On a short-term basis, the conditioned biogas input to the plant will be up to 2,952,000 scf per day (2.952 mmscf/day). The maximum flow rate of conditioned biogas into the plant is 2,050 scfm. Operation of the Plant is anticipated to be 24 hours per day, 365 days per year.

The conditioned biogas composition is estimated to be:

- Methane (CH_4): 60 to 69 percent, nominal 60.4 percent
- Oxygen: 0 to 2 percent, nominal 0.7 percent
- Total Nitrogen (as N_2): 0 to 8 percent, nominal 3.1 percent
- Carbon dioxide (CO_2): 21 to 40 percent, nominal 35.5 percent
- H_2S (as H_2S): 80 parts per million by volume, ppmvd. (Untreated digester gas at the dairies can have a H_2S content in the range of 0 to 0.4 percent, 0 to 4,000 ppmv. However, the digester gas generated at the dairies will be conditioned at the dairies such that the H_2S content of the conditioned biogas arriving at the Aemetis Biogas Cleanup Plant will not have more than 80 ppmvd H_2S content.
- Ammonia (NH_3): nominal 1.74 pounds per million standard cubic feet (lb/mmscf)
- NMNEVOC: nominal 0.296 lb/mmscf

The nominal gas composition values came from Table 15 of the Gas Technology Institute Guidance Document for Introduction of Dairy Waste Biomethane dated September 30, 2009. The nominal NH_3 and NMNEVOC values came from the SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017.

The waste tail gas flow rate will be no more than 3 percent of the total inlet conditioned biogas to the Biogas Cleanup Plant, or 21 mmscf/yr, 88,560 scf/day, and 61.5 scfm. For worst case emission calculations, it is assumed that the RTO is capable of handling the total flow of waste tail gas.

The off-spec RNG venting rate is no more than 1,300 scfm or 78,000 scf/hr. During normal operations, off-spec RNG will be vented a maximum of 2 hours per day, or no more than 156,000 scf/day. During normal operations, venting will occur no more than 44 hours per year, or 3,432,000 scf/yr. During the first year of operations, venting could occur up to 6 hours per day, or 468,000 scf/day and a total of 551 hours for the first year, or 42,978,000 scf/yr.

The maximum amount of conditioned biogas, partially treated biogas, or off-spec RNG going to the new boiler is limited by the heat rating of the boiler, or 12.6 mmBtu/hr. At a heat content of 600 Btu/scf, this amounts to 21,000 scf/hr, 504,000 scf/day, and 183,960,000 scf/yr.

The maximum amount of pipeline quality RNG going to the existing 99 mmBtu/hr boilers at the Ethanol Plant is limited by the heat rating of the boilers. Only two boilers can operate at the same time per the existing permits, so a maximum of 198 mmBtu/hr of pipeline quality RNG could go to the existing boilers.

The maximum amount of off-spec RNG that could be combusted in the existing 99 mmBtu/hr boilers at the Ethanol Plant is limited by the amount of off-spec RNG generated, or 78,000 scf/hr. During normal operations, venting will occur no more than 2 hours per day, or and 156,000 scf/day and 44 hours per year, or 3,432,000 scf/yr. During the first year of operations, venting could occur up to 6 hours per day, or 468,000 scf/day and a total of 551 hours for the first year, or 42,978,000 scf/yr.

4.0 NEW 12.6 MMBTU/HR BOILER

A new 12.6 mmBtu/hr boiler will be installed at the Ethanol Plant just east and adjacent to the existing three 99 mmBtu/hr boilers.

Worst case emissions at the new boiler would occur when conditioned biogas is the sole fuel source because (a) partially treated biogas has had the sulfur removed, (b) off-spec RNG has had sulfur and other constituents removed by the Biogas Cleanup Plant, and (c) pipeline quality RNG meets commercial pipeline quality specifications. Thus, emissions from the Boiler were calculated with conditioned biogas as the sole fuel source as shown in Attachment 4 and summarized in Table 1. The emissions from the new boiler shown in Table 1 and Attachment 4 are based on the following:

- NOx: 7 ppmvd at 15% O2
- CO: 400 ppmvd at 15% O2
- PM10 and PM2.5: 0.0075 lb/mmBtu
- VOC: 0.0054 lb/mmBtu
- SO2: 5 grains H_2S per 100 scf (80 ppmvd)

Table 1
Emissions from New Boiler When Fired on Conditioned Biogas

	Hourly (lb/hr)	Daily (lb/day)	Annual (lb/yr)	Annual (ton/yr)
NO_x	0.11	2.56	934.88	0.47
CO	3.73	89.51	32,671	16.34
PM_{10}	0.09	2.25	822.41	0.41
SO_2	0.30	7.19	2,625.21	1.31
VOC	0.07	1.64	597.89	0.30
HAPs	0.02	0.56	203.55	0.10

5.0 BIOGAS CLEANUP PLANT SULFUR AND NMNEVOC REMOVAL SYSTEMS

Conditioned biogas entering the Plant will have sulfur removed in the carbon adsorber. The carbon adsorber system does not have emissions. After the carbon adsorber, the H_2S content of the gas will be less than 4 ppmvd (i.e., it becomes partially treated biogas).

The carbon adsorber system will also remove 95 percent of the NMNEVOC. All conditioned biogas entering the CO_2 membrane removal system will first pass through the carbon adsorber system.

The carbon adsorption bed will be a dual chamber bed in series with breakthrough monitoring between the first and second bed. Each bed will be sized sufficiently to handle the entire

conditioned biogas flow alone. Thus, when breakthrough from the first bed is detected, the gas flow will be routed to the second bed and the first bed refreshed. A commercial carbon vendor will remove the spent carbon and replace it with fresh carbon. The replenished carbon bed then serves as the backup bed. In this manner there is no bypass and there are no emissions from the carbon adsorber system.

6.0 BIOGAS CLEANUP PLANT DEVICES TO BE PERMITTED

The Biogas Cleanup Plant results in a net decrease of emissions because it captures and cleans digester gas that would otherwise be emitted at the individual dairies. The cleaned biogas (pipeline quality RNG) is then ultimately sold commercially and displaces the need for petroleum-based natural gas. The Biogas Cleanup Plant does not create any additional emissions or substances that are not already present in the digester gas.

At the Biogas Cleanup Plant, there are no potential emissions of any air contaminant from the carbon adsorption beds. The compressors and pumps are electrically driven. The compressors do not need to be depressurized so there are no blowdown emissions (the inlet and outlet line are pressure balanced before startup of the compressors). Therefore, the only device at the Biogas Cleanup Plant that requires an ATC permit is the CO_2 membrane removal system and associated off-spec RNG venting.

There are no flares at the Biogas Cleanup Plant (although there is an existing flare at the Ethanol Plant). CO_2 extracted by the CO_2 membrane system can be safely vented. If the Plant must be shutdown, only the piping at the Plant will need to be vented, the digester gas and conditioned biogas generated at the dairies will be vented or stored at the individual dairies.

There are essentially no fugitive emissions at the Plant as the lines and connections must all be tested and confirmed tight in accordance with Fire Department requirements and best management practices for safety when handling flammable gas.

No new fire pump engines or standby electrical generator engines are required or installed at the Biogas Cleanup Plant (although the Fuel Ethanol Plant has an extensive fire suppression system and backup generator).

7.0 BIOGAS CLEANUP PLANT CO_2 MEMBRANE REMOVAL SYSTEM EMISSIONS

As stated, one of the potential emission sources at the Biogas Cleanup Plant is the CO_2 membrane removal system. Emissions from the system will include CO_2, small amounts of methane and trace amounts of H_2S, NMNEVOC, and NH_3 that could be present in the waste tail gas that is sent to the RTO. The CO_2 membrane removal system is designed to remove 97 percent of the inlet CO_2 content so that the pipeline quality RNG sent to the PG&E interconnection contains no more than 3 percent CO_2. Along with the removed CO_2, up to approximately 3 percent of the inlet methane may also be inadvertently captured along with the removed CO_2 and will be sent to the RTO as waste tail gas. The CO_2 membrane does not affect H_2S, NMNEVOC, or NH_3. Thus, it is assumed that up to 3 percent of the inlet H_2S, NMNEVOC, and NH_3 may also be vented with the CO_2.

Attachment 5 shows the calculation method and potential emission calculations for the CO_2 membrane removal system. The emissions in Attachment 5 are shown as “additional emissions” that would be caused by the waste tail gas entering the RTO, not the RTO emissions from other processes at the Ethanol Plant. Note that the composition of conditioned biogas varies

considerably, thus the emission calculations shown in Attachment 5 are based on nominal gas composition and cannot be considered emission limits.

The potential additional annual emissions of non-greenhouse gas (GHG) constituents from the RTO caused by the waste tail gas treated in the RTO are shown in Attachment 5 and summarized in Table 2.

Table 2
Additional Emissions of non-GHG Constituents from the RTO

	Hourly (lb/hr)	Daily (lb/day)	Annual (lb/yr)	Annual (ton/yr)
SO_2 from H_2S entering the RTO (as SO_2)	0.0026	0.063	14.98	0.0075
NMNEVOC	0.0000011	0.000026	0.0062	0.0000031
Ammonia	0.0064	0.15	36.54	0.018

8.0 OFF-SPEC RNG EMISSIONS

It is possible that the treated RNG (after treatment by the carbon adsorber and CO_2 removal systems) may not meet PG&E pipeline specifications. In this case, the off-spec RNG will either be vented at the Plant, sent to the RTO, sent to the new boiler, or sent to the existing 99 mmBtu/hr Ethanol Plant boilers.

Aemetis has estimated that during normal operations, off-spec RNG would occur no more than 0.5 percent of the time, or 44 hours per year and no more than 2 hours in any given day. During startup and tuning of the Biogas Cleanup Plant, off-spec RNG could occur up to 25 percent of the time for 3 months, or a total of 540 hours and no more than 6 hours per day. For the remaining 9 months of the first year of operations, off-spec RNG could occur no more than 0.5% of the time, or another 11 hours and no more than 2 hours per day, or a total of 551 hours during the first year of operation. The maximum flow rate during venting would be 1,300 scfm.

As stated above, if off-spec RNG is used in the new boiler, emissions will be less than would occur with conditioned biogas as the sole fuel source. Thus, no emission calculation was made for using off-spec RNG in the new boiler. Likewise, if off-spec RNG were combusted in the existing 99 mmBtu/hr boilers, emissions from those boilers would be the same as if commercial natural gas were combusted because the off-spec RNG is the same as commercial natural gas except for heat content.

If the off-spec RNG were vented, emissions would be as shown in Table 3, with the calculations shown in Attachments 6 and 7 for the first year and subsequent years, respectively.

Table 3
Non-GHG Emissions from Venting Off-Spec RNG

	First Year			Second Year		
	Annual (lb/yr)	Daily (lb/day)	Hourly (lb/hr)	Annual (lb/yr)	Daily (lb/day)	Hourly (lb/hr)
H_2S (as H_2S)	16.29	0.177	0.030	1.30	0.059	0.030
NMNEVOC	0.64	0.0069	0.0012	0.051	0.0023	0.0012
Ammonia	74.78	0.81	0.136	5.97	0.27	0.14

If the off-spec RNG is combusted in the new boiler or the existing boilers, emissions from the boilers will be less than shown in Table 3 because the boilers will destroy some of the NMNEVOC. Furthermore, if off-spec RNG is treated in the RTO the off-spec RNG will be of better quality than the waste tail gas from the CO_2 membrane removal system. Thus, only venting emissions for off-spec RNG are calculated.

9.0 EMISSIONS FROM EXISTING ETHANOL PLANT BOILERS

The existing boilers will be fueled either with commercial natural gas, pipeline quality RNG, off-spec RNG, or a mixture of those gases. There will be no change in emissions from the existing Ethanol Plant boilers because if pipeline quality RNG or off-spec RNG is combusted in the boilers, the RNG will have met PG&E specifications for pipeline quality gas except possibly for heat content. Thus, combustion of RNG will result in emissions the same or lower than emissions from combustion of PUC-regulated commercial natural gas.

10.0 FUTURE SITE-WIDE EMISSION TOTALS

Attachment 8 shows the permitted emissions from the existing Ethanol Plant. Attachment 8 also shows the site-wide emissions that could occur after addition of the Biogas Cleanup Plant and the new 12.6 mmBtu/hr boiler. The worst-case emissions for the new equipment are shown in Attachment 8, as discussed above: only conditioned biogas fuel in the new boiler, waste tail gas combusted in the RTO in addition to Ethanol Plant processes, and first-year venting of off-spec RNG.

The future emission totals are all less than major source thresholds.

11.0 STACK PARAMETERS

There is only one new stack associated with the Biogas Plant: the off-spec RNG vent. There is one new stack associated with the new 12.6 mmBtu.hr boiler.

The off-spec RNG vent stack parameters are as follows:

- Location: Southwest corner of the Biogas Cleanup Plant (shown on Attachment A2) (684,045 E, 4,158,334 N)
- Stack Height: 24 feet above grade
- Stack Inside Diameter: 4 inches
- Rain cap: A T-pipe at the top of the stack so that the gas exits horizontally in two directions, one for each side of the T.
- Exhaust Gas Exit Direction: Horizontal
- Exhaust Gas Temperature: 50 degrees F
- Exhaust Gas Exit Velocity: 124 feet per second from each side of the T (total of 248 ft/sec, 1,300 scfm)

The new boiler stack parameters are as follows:

- Location: Adjacent to and east of the existing Ethanol Plant Boilers (684,062 E, 4,158,316 N)
- Stack Height: 15 feet above grade
- Stack Diameter: 23.5 inches
- Rain cap: None

- Exhaust Gas Exit Direction: Vertical
- Exhaust Gas Temperature: 488 degrees F
- Exhaust Gas Exit Velocity: 19.1 feet per second (3.450 acfm)

The remaining emissions sources are the existing Ethanol Plant RTO and boiler stacks. There are no changes to those stacks.

12.0 APPLICABLE REGULATIONS ANALYSIS

Biogas Cleanup Plant:

There are no device specific rules that apply to the Biogas Cleanup Plant equipment. Thus, the main regulatory requirement that could apply to the Biogas Cleanup Plant is Rule 2201.4.1, which requires Best Available Control Technology (BACT). However, per Rule 2201.2.0, Rule 2201 applies only to affected pollutants and Rule 2201.4.1 applies only to devices that emit more than 2 pounds per day (lb/day) of an affected pollutant.

As shown above, emissions of all pollutants from the Biogas Cleanup Plant other than GHG are much less than 2 pounds per day (730 lb/yr). GHGs are not an affected pollutant for the Biogas Cleanup Plant because the emissions of non-GHG pollutants are all less than major source thresholds. Thus, per 40 CFR 51.166(b)(48)(i), GHGs are not regulated pollutants for the Biogas Cleanup Plant. Per Rule 1020.3.1, non-regulated pollutants are not affected pollutants. Thus, there is no BACT requirement for the CO_2 membrane removal system or caustic scrubber.

New Boiler:

The new boiler is possibly affected by 40 CFR Subpart Dc, SJVAPCD Rule 4320, and Rule 2201.4.1 (BACT). However, Subpart Dc has emission limits only for boilers fueled by other than gaseous fuel alone, thus Subpart Dc does not apply other than the requirement of 40 CFR 60.48c(a) that requires a notice of construction and startup.

Rule 4320 could potentially apply, however, Section 4320.4.2 Rule exempts boilers from the emission limits when burning other than PUC quality natural gas during a PUC quality gas curtailment as long as NO_x emissions are less than 150 ppmv. Therefore, when the new boiler burns non-PUC quality gas and the NO_x emissions are less than 150 ppmv, the emission limits of Rule 4320 do not apply.

Rule 2201.4.1 requires BACT for emissions over 2 lb/day, except Rule 2201.4.2 exempts BACT for CO if emissions are less than 200,000 lb/yr, which is the case for the new boiler. The boiler emissions are greater than 2 lb/day each for NO_x, PM_{10}, and SO_2. For the quality gas being combusted in the boiler, the emissions proposed are the lowest achievable per the boiler vendor, thus BACT is met.

Gas Conditioning Equipment at the Dairies:

Aemetis will normally own and operate the gas conditioning equipment at the individual dairies that will be supplying biogas to Aemetis. Although two of the several dairies that will supply biogas have already received ATCs (Ackerman, Permit No. N-7412-3-3, and Double D, Permit No. N-7577-3-3), ATC permits are not required for the gas conditioning equipment. The gas conditioning equipment at the dairies (iron sponge sulfur removal system, chiller, and compressor) do not have routine emissions, only emergency venting of the compressor if needed. As indicated, if the

Biogas Cleanup Plant malfunctions, the digester gas will be "stored" in the lagoon covers at the dairies. Therefore, Aemetis does not plan to file ATC applications for other dairies in their project cluster.

Rule 2020.6.19 exempts "low emissions units" (units with emissions less than 75 pounds per year) from requiring a permit. The digester conditioning equipment at the dairies meet the definition of low emissions units, and thus no ATC is required.

13.0 NET EMISSIONS REDUCTION

As stated, the Biogas Cleanup Plant does not create any emissions that are not already occurring at the individual dairies. In fact, the proposed Biogas Cleanup Plant will result in a significant reduction of potential GHG emissions to the environment. As shown in Attachment 5, if there were no project, there would be global warming potential (GWP) emissions of approximately 228,377 metric tons per year (Mt/yr) of CO_2e. The new Boiler will emit approximately 3,851 MT/yr (Attachment 4), there will be about 13,501 MT/yr emitted of CO_2e associated with the Biogas Cleanup Plant from the RTO (Attachment 5), and during the first year off-spec RNG venting will release another about 24 MT/yr (Attachment 6). Thus, a net of 211,001 MT/yr CO_2e will be avoided, and the proposed Biogas Cleanup Plant will reduce potential GHG emissions by more than 90 percent.

14.0 PERMIT MODIFICATIONS FOR THE EXISTING ETHANOL PLANT RTO AND BOILERS

There are two requested modifications to existing permits at the Ethanol Plant. The modifications are to allow the waste tail gas from the Biogas Cleanup Plant to be treated in the RTO and to allow RNG to be combusted in the three existing Ethanol Plant boilers.

Specifically, the requested modifications are as follows:

<u>Permit 7488-5-3:</u>

1. The Equipment Description should be amended to add that the RTO also serves the Biogas Cleanup Plant.
2. Condition 10 should be amended as follows (added language underlined):
   - 10. VOC emissions from the RTO stack shall not exceed 0.072 lb/1,000 gallons of ethanol produced <u>plus 0.000026 lb/day from the Biogas Cleanup Plant</u>. [District Rules 2201 and 4623]

<u>Permits 7488-16-4, 17-4, and 18-3.</u>

1. Condition 5 for each of the three boiler permits should be amended as follows (added language underlined):
   - 5. The unit shall be primarily fired on PUC-regulated natural gas <u>or renewable natural gas with a hydrogen sulfide content no greater than 4 parts per million by volume (0.25 grains per 100 dry standard cubic feet)</u>.

15.0 ATC PERMIT APPLICATION PACKAGE

The following information is enclosed with this ATC permit application package:

- Attachment 1: General Facility Location
- Attachment 2: Biogas Cleanup Plant Location
- Attachment 3: Simplified Biogas Cleanup Plant Process Flow Diagram
- Attachment 4: New Boiler Emissions
- Attachment 5: Waste Tail Gas to RTO Emissions
- Attachment 6: First Year Off-Spec RNG Venting Emissions
- Attachment 7: Second Year Off-Spec RNG Venting Emissions
- Attachment 8: Future Site-Wide Emissions
- Attachment 9: ATC Application Form for New Boiler
- Attachment 10: Boiler Supplemental Form
- Attachment 11: ATC Application for the Biogas Cleanup Plant
- Attachment 12: ATC Application for Modifying the Ethanol Plant RTO Permit
- Attachment 13: ATC Application for Modifying the Ethanol Plant Boiler Permits
- Attachment 14: CEQA Form for the Biogas Cleanup Plant and Ethanol Plant Modifications
- Attachment 15: Notice of Determination

16.0 CLOSING

Expedited permit processing is requested and thus no application fee is enclosed. As mentioned, Aemetis requests that the District processes the ATC application and issues the ATC for the new boiler prior to the Biogas Cleanup Plant. If you have additional questions or concerns, please feel free to contact the undersigned at rerbes@kleinfelder.com or by phone at 303.748.7190. In the alternative you may contact Mr. Dustin Collins at dcollins@kleinfelder.com or by phone at 303.237.6601.

Sincerely,

KLEINFELDER

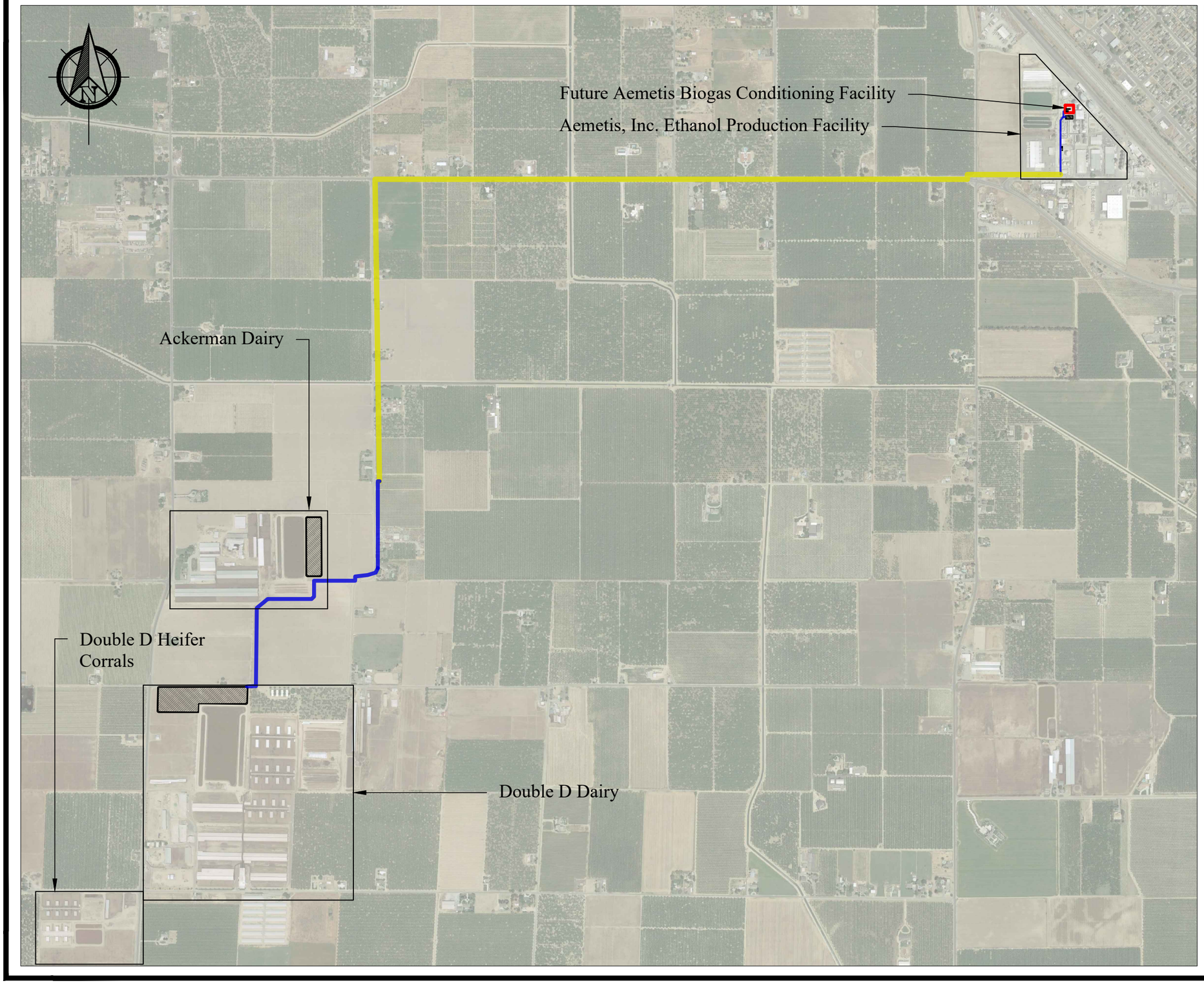
Russell E. Erbes, CCM
Senior Principal Air Quality Scientist

cc: Mr. Nathan Nisly, Maas Energy, LLC
Mr. Robbie Macias, Aemetis Biogas LLC
Mr. Dustin Collins, Kleinfelder

Attachments 1 through 15

ATTACHMENT 1
GENERAL FACILITY LOCATION

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602



General Notes

Not for Construction

Proposed Biogas Lines in Private Land

Proposed Biogas Lines in County Right of Way

Proposed Digester

Proposed Biogas Conditioning Facility

MAAS ENERGY WORKS

Firm Address
3711 Meadow View Dr.
Redding, CA, 96002

Project Name and Address

Aemetis Biogas Cleanup Facility
4209 Jessup Road, Ceres
California 95307

Date
3/25/19

Version
1.1

Drawn By
Byron Oja

ATTACHMENT 2
BIOGAS CLEANUP PLANT LOCATION

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

General Notes

CONFIDENTIAL

Biogas Lines in Private Land

Biogas Lines in
County Right of Way

Existing PG&E Pipeline

MAAS ENERGY WORKS

Firm Address
3711 Meadowview Dr.
Redding, CA, 96002

Project Name and Address
Aemetis Advanced Fuels
CNG and Biogas Cleanup

Date
3/26/19

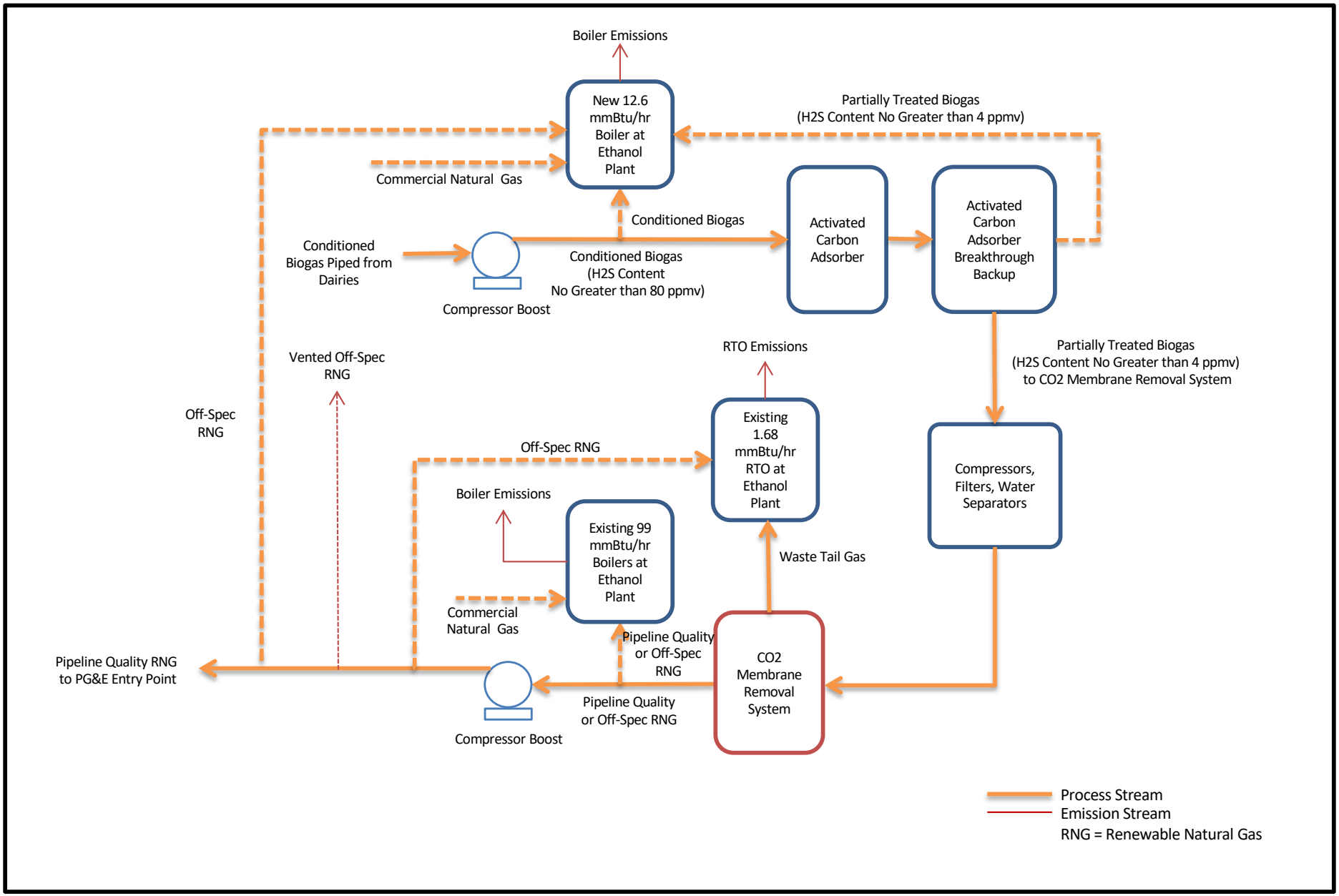
Drawn By
Byron Oja

Version
1.5

ATTACHMENT 3
SIMPLIFIED BIOGAS CLEANUP PLANT PROCESS FLOW DIAGRAM

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Aemetis Advanced Fuels Keyes, Inc.
Typical High Level Process Flow Diagram for Biogas Cleanup Plant



08/28/19

ATTACHMENT 4
NEW BOILER EMISSIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Emissions from Conditioned Biogas Combusted in Aemetis new Boiler

Rev. 1 August 28, 2019

Proposed Project Emissions:

Item No.	Parameter	Value	Units	Source
Conditioned Biogas Combusted in new Boiler:				
1	Maximum Hourly Conditioned Biogas to new Boiler	12.6	mmBtu/hr	Boiler Rating
2	Heat Content of Conditioned Biogas	600	Btu/scf	Estimate by Aemetis for conditioned biogas combusted in new Boiler
3	Maximum Hourly Conditioned Biogas to new Boiler	21,000	scf/hr	Item 1 / Item 2
4	Maximum Daily Conditioned Biogas to new Boiler	504,000	scf/day	Assumed 24 hrs/day
5	Maximum Annual Conditioned Biogas to new Boiler	183,960,000	scf/yr	Assumed 365 days per year
6	Ratio of Max Daily to Annual Average Daily	1.00		
7	Nominal Percent H2S in Conditioned Biogas	< 80	ppmv	Most sulfur removed at Dairies. Arrives at Plant <80 ppmv. Nominal gas without pretreatment has 0.3% S.
8	Nominal H2S in Digester Gas	268	lb/mmscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017
9	Nominal NH3 in Digester Gas	1.74	lb/mmscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017
10	Nominal NMNEVOC in Digester Gas	0.296	lb/mmscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017, sum of all non-exempt VOC compounds
11	Maximum H2S Content in Conditioned Biogas Coumbusted in new Boiler	80	ppmv	Maximum sulfur content entering the Boilers after treatment at daries
12	Maximum H2S Content in Conditioned Biogas Coumbusted in new Boiler	121.35691	mg/m3	Convert ppmv to mg/m3: ppmv x 12.187 x MW/273.15 at 0C
13	Maximum H2S Content in Conditioned Biogas Coumbusted in new Boiler	7.58E-06	lb/scf conditioned biogas	Convert mg/m3 to lb/scf: mg/m3 x 10^-3 g/mg x 1 lb/453.6 g x 1 m3/ 35.29 ft3
	Maximum H2S Content in Conditioned Biogas Coumbusted in new Boiler	5	grains/100 scf	Convert lb to grains
14	Additional Percent of NMNEVOC removed by Sulfur Removal System at Biogas Plant	0%		Conditioned gas going to the new Boiler does not pass through the sulfur removal system at the Biogas Plant.
15	Minimum Percent of NMNEVOC destroyed by Combustion in new Boiler	95%		Assumed for normal combustion ... not specialized RTO combustion
16	Maximum Hourly Cubic feet of methane gas combusted in new Boiler	12,353	scf/hr natural gas	Item 3 x (Item 2 / 1020 Btu/scf natural gas)
17	Maximum Daily Cubic feet of methane gas combusted in new Boiler	296,471	scf/day natural gas	Item 4 x (Item 2 / 1020 Btu/scf natural gas)
18	Maximum Annual Cubic feet of methane gas combusted in new Boiler	108,211,765	scf/yr natural gas	Item 5 x (Item 2 / 1020 Btu/scf natural gas)
	NOx Emissions from new Boiler	7	ppmv at 3% O2	Boiler vendor specification
19	NOx Emissions from new Boiler	0.0085	lb/mmBtu	Convert ppmv NOx to lb/mmBtu: 100 ppmv NOx at 3% O2 = 0.121 lb/mmBtu NOx
	CO Emissions from new Boiler	400	ppmv at 3% O2	Boiler vendor specification
20	CO Emissions from new Boiler	0.2960	lb/mmBtu	Convert ppmv CO to lb/mmBtu: 100 ppmv CO at 3% O2 = 0.074 lb/mmBtu CO
21	PM10 Emissions from new Boiler	7.6	lb/mmscf natural gas	USEPA AP-42 Table 1.4-2 (dated 7/908)
	PM10 Emissions from new Boiler	0.0075	lb/mmBtu	Convert lb/mmscf to lb/mmBtu with 1020 Btu/scf
22	VOC Emissions from new Boiler if burning PUC quality natural gas	5.5	lb/mmscf natural gas	USEPA AP-42 Table 1.4-2 (dated 7/908)
	VOC Emissions from new Boiler if burning PUC quality natural gas	0.0054	lb/mmBtu	Convert lb/mmscf to lb/mmBtu with 1020 Btu/scf
23	HAP Emissions form new Boiler if burning PUC quality natural gas	1.881	lb/mmscf natural gas	USEPA AP-42 Table 1.4-3 (dated 7/908) for sum of benzene, dichlorobenzene, formaldehyde, hexane, toluene. Other HAP species de minimis.
Emissions from new Boiler:				
24	Maximum Hourly NOx Emissions from Boiler	0.11	lb/hr	Item 1 x Item 19
25	Maximum Daily NOx Emissions from Boiler	2.56	lb/day	Item 1 x Item 19 x 24 hr/day
26	Maximum Annual NOx Emissions from Boiler	934.88	lb/yr	Item 1 x Item 19 x 8760 hr/yr
27	Maximum Annual NOx Emissions from Boiler	0.47	tons/yr	Item 27 / 2000
28	Maximum Hourly CO Emissions from Boiler	3.73	lb/hr	Item 1 x Item 20
29	Maximum Daily CO Emissions from Boiler	89.51	lb/day	Item 1 x Item 20 x 24 hr/day
30	Maximum Annual CO Emissions from Boiler	32,671	lb/yr	Item 1 x Item 20 x 8760 hr/yr
31	Maximum Annual CO Emissions from Boiler	16.34	tons/yr	Item 30 / 2000
32	Maximum Hourly PM10 Emissions from Boiler	0.09	lb/hr	Item 16 x Item 21
33	Maximum Daily PM10 Emissions from Boiler	2.25	lb/day	Item 17 x Item 21
34	Maximum Annual PM10 Emissions from Boiler	822.41	lb/yr	Item 18 x Item 21
35	Maximum Annual PM10 Emissions from Boiler	0.41	tons/yr	Item 35 / 2000
36	Maximum Hourly SO2 Emissions from Boiler (as SO2)	0.30	lb/hr	Item 3 x Item 13 x 64/34 conversion of H2S to SO2
37	Maximum Daily SO2 Emissions from Boiler (as SO2)	7.19	lb/day	Item 4 x Item 13 x 64/34 conversion of H2S to SO2
38	Maximum Annual SO2 Emissions from Boiler (as SO2)	2,625.21	lb/yr	Item 5 x Item 13 x 64/34 conversion of H2S to SO2
39	Maximum Annual SO2 Emissions from Boiler (as SO2)	1.31	tons/yr	Item 39 / 2000
40	Nominal Hourly NMNEVOC from combustion of methane in Boiler	0.068	lb/hr	Item 16 x Item 22 / 1,000,000
41	Nominal Daily NMNEVOC from combustion of methane in Boiler	1.63	lb/day	Item 17 x Item 22 / 1,000,000
42	Nominal Annual NMNEVOC from combustion of methane in Boiler	595.16	lb/yr	Item 18 x Item 22 / 1,000,000
43	Nominal Annual NMNEVOC from combustion of methane in Boiler	0.30	tons/yr	Item 42 / 2000
44	Nominal Hourly NMNEVOC from uncombusted VOC in Conditioned biogas	0.00031	lb/hr	Item 3 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
45	Nominal Daily NMNEVOC from uncombusted VOC in Conditioned biogas	0.0075	lb/day	Item 4 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
46	Nominal Annual NMNEVOC from uncombusted VOC in Conditioned biogas	2.72	lb/yr	Item 5 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
47	Nominal Annual NMNEVOC from uncombusted VOC in Conditioned biogas	0.0014	tons/yr	Item 47 / 2000
48	Total Nominal Hourly NMNEVOC from Boiler	0.07	lb/hr	Item 40 + Item 44
49	Total Nominal Daily NMNEVOC from Boiler	1.64	lb/day	Item 41 + Item 45
50	Total NMNEVOC from Boiler	597.89	lb/yr	Item 42 + Item 46
51	Total Nominal Annual NMNEVOC from Boiler	0.30	tons/yr	Item 43 + Item 47
52	Nominal Hourly NH3 from Boiler	0.04	lb/hr	Item 3 x Item 9 / 1,000,000
53	Nominal Daily NH3 from Boiler	0.88	lb/day	Item 4 x Item 9 / 1,000,000
54	Nominal Annual NH3 from Boiler	320.09	lb/yr	Item 5 x Item 9 / 1,000,000
55	Nominal Annual NH3 from Boiler	0.16	tons/yr	Item 52 / 2000
54	Nominal Hourly non-NH3 HAPs from combustion of methane in Boiler	0.023	lb/hr	Item 16 x Item 23 / 1,000,000
55	Nominal Daily non-NH3 HAPs from combustion of methane in Boiler	0.56	lb/day	Item 17 x Item 23 / 1,000,000
56	Nominal Annual non-NH3 HAPs from combustion of methane in Boiler	203.55	lb/yr	Item 18 x Item 23 / 1,000,000
57	Nominal Annual non-NH3 HAPs from combustion of methane in Boiler	0.10	tons/yr	Item 56 / 2000
Additional CO2 Emissions from Biogas Combusted in new Boiler				
28	CO2 content of Conditioned Biogas	37.4%	percent	[1 - Conditioned Biogas Btu/scf (Item 2) / 1020 Btu/scf] - 3.1% N2 - 0.7% O2
29	CO2 emitted per year	68,757,755	scf/yr	Item 5 x Item 28
30	CO2 Density STP	0.1234	lb/scf	
31	Mass of CO2 emitted per year	8,484,707	lb/yr	Item 29 x Item 30
32	GWP of CO2 emitted per year	3,851	MT/yr	Item 31 / 2000 converted to metric tons

ATTACHMENT 5
WASTE TAIL GAS RTO EMISSIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Nominal Potential Additional Emissions from the CO2 removal membrane system Waste Tail Gas at the Proposed Aemetis Biogas Cleanup Plant
Rev. 1 August 28, 2019

Proposed Project Emissions:

Item No.	Parameter	Value	Units	Source		
1	Annual Nominal Conditioned BioGas to the Cleanup Plant	700,000,000	scf/yr	Estimate by Aemetis		
2	Nominal Percent CH4 in Conditioned Biogas	60.4%		Guidance Document for Introduction of Dairy Waste Biomethane, Gas Technology Institute, September 30, 2009 Table 15		
3	Nominal Percent CO2 in Conditioned Biogas	35.5%		Guidance Document for Introduction of Dairy Waste Biomethane, Gas Technology Institute, September 30, 2009 Table 15		
4	Nominal Percent N2O in Conditioned Biogas	0.0%		Assumed		
5	Nominal Percent O2 in Conditioned Biogas	0.7%		Guidance Document for Introduction of Dairy Waste Biomethane, Gas Technology Institute, September 30, 2009 Table 15		
6	Nominal Percent N2 in Conditioned Biogas	3.1%		Guidance Document for Introduction of Dairy Waste Biomethane, Gas Technology Institute, September 30, 2009 Table 15		
7	Nominal Percent H2S in Conditioned Biogas	< 80	ppmv	Most sulfur removed at Dairies. Arrives at Plant <80 ppmv H2S. Nominal gas without pretreatment has 0.3% S.		
8	Nominal H2S in Digester Gas	268	lb/MMscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017		
9	Nominal NH3 in Digester Gas	1.74	lb/MMscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017		
10	Nominal NMNEVOC in Digester Gas	0.296	lb/MMscf digester gas	SJVAPCD Dairy Biogas-Fired External Combustion Spreadsheet dated July 27, 2017, sum of all non-exempt VOC compounds		
11	Maximum H2S Content in Treated Biogas after Carbon Beds	4	ppmv	Maximum H2S content entering the CO2 membrane system		
12	Maximum H2S Content in Treated Biogas after Carbon Beds	6.06785	mg/m3	Convert ppmv to mg/m3: ppmv x 12.187 x MW/273.15 at 0C		
13	Maximum H2S Content in Treated Biogas after Carbon Beds	3.79E-07	lb/scf	Convert mg/m3 to lb/scf: mg/m3 x 10^-3 g/mg x 1 lb/453.6 g x 1 m3/ 35.29 ft3		
14	Minimum Percent of NMNEVOC removed by carbon beds	95%		Minimum carbon adsorption efficiency		
14a	Minimum Percent of NMNEVOC destroyed by RTO	98%		Typical RTO		
15	Percent of CO2 removed by CO2 System and then from RTO	97%		Estimate by Aemetis, removed CO2 is from RTO		
16	Percent of Inlet CH4, N2O, NH3, NMNEVOC, and S emitted from RTO caused by Waste Tail Gas entering the RTO	3%		Estimate by Aemetis, removed Constituents are from RTO		
	Maximum heat content of waste tail gas	600	Btu/scf	Assumed equal to conditioned biogas estimated by Aemetis		
	Annual Heat Rate of Waste Tail Gas to RTO	1.44	mmBtu/hr	RTO is rated at 1.68 mmBtu/hr, thus RTO can handle the total Waste Tail Gas on an Annual basis.		
17	Maximum Daily Conditioned BioGas to the Cleanup Plant	2,952,000	scf/day	Estimate by Aemetis		
18	Ratio of Max Daily to Average Daily	1.539				
	Daily Heat Rate of Waste Tail Gas to RTO	2.21	mmBtu/hr	RTO is rated at 1.68 mmBtu/hr, thus heat content of Waste Tail Gas to the RTO is limited to 1.68 mmBtu/hr. Assume heat content will be less than 600 Btu/scf for worst case emissions calculation, thus full flow to RTO is assumed.		
19	Maximum Hourly Conditioned BioGas to the Cleanup Plant	123,000	scf/hr	Item 17 / 24 hr/day		
	CH4 Density STP	0.0447	lb/scf			
	CO2 Density STP	0.1234	lb/scf			
	N2O Density	0.1140	lb/scf			
	NH3 Density STP	0.0476	lb/scf			
	CH4 GWP	25		40 CFR 98 Subpart A, Table A-1		
	CO2 GWP	1		40 CFR 98 Subpart A, Table A-1		
	N2O GWP	298		40 CFR 98 Subpart A, Table A-1		
	Metric Ton/Short Ton	0.9078				
	grains/lb	7,000				
	Nominal S Emissions from RTO (as SO2)	14.98	lb/yr	Item 1 x Item 13 x Item 16 x (64/34) Assume H2S entering the RTO converted to SO2	0.0075	tons/yr
	Nominal NMNEVOC from RTO	0.0062	lb/yr	Item 1 x Item 10 x Item 16 x (1 - Item 14) x (1- Item 14a)	0.0000031	tons/yr
	Nominal NH3 from RTO	36.54	lb/yr	Item 1 x Item 9 x Item 16	0.018	tons/yr
	Nominal S Emissions from RTO (as SO2)	0.063	lb/day	Item 17 x Item 13 x Item 16 x (64/34) Assume H2S entering the RTO converted to SO2		
	Nominal NMNEVOC from RTO	0.000026	lb/day	Item 17 x Item 10 x Item 16 x (1 - Item 14) x (1- Item 14a)		
	Nominal NH3 from RTO	0.15	lb/day	Item 17 x Item 9 x Item 16		
	Nominal S Emissions from RTO (as SO2)	0.0026	lb/hr	Item 19 x Item 13 x Item 16 x (64/34) Assume H2S entering the RTO converted to SO2		
	Nominal NMNEVOC from RTO	0.0000011	lb/hr	Item 19 x Item 10 x Item 16 x (1 - Item 14) x (1- Item 14a)		
	Nominal NH3 from RTO	0.0064	lb/hr	Item 19 x Item 9 x Item 16		
	Nominal CO2 from RTO	241,045,000	scf/yr	Item 1 x Item 3 x Item 15		
	Nominal CH4 from RTO	-	scf/yr	Assume all CH4 combusted in RTO		
	Nominal N2O from RTO	-	scf/yr	Item 1 x Item 4 x Item 16		
	Nominal CO2 from RTO	14,872	short tons/yr	(scf/yr x lb/scf) x ton/lb		
	Nominal CH4 from RTO	-	short tons/yr	Assume all CH4 combusted in RTO		
	Nominal N2O from RTO	-	short tons/yr	(scf/yr x lb/scf) x ton/lb		
	Nominal Total GHG Mass from RTO	14,872	short tons/yr	Sum of CO2, CH4, N2O		
	Nominal GWP from RTO	13,501	metric tons/yr	CO2 x GWP + CH4 x GWP + N2O x GWP		

Calculate GWP Emissions if there were no capture of conditioned biogas (Business as Usual):

Nominal CO2 Vented	248,500,000	scf/yr	Item 1 x Item 3
Nominal CH4 Vented	422,800,000	scf/yr	Item 1 x Item 2
Nominal N2O Vented	-	scf/yr	Item 1 x Item 4
Nominal CO2 Vented	15,332	short tons/yr	(scf/yr x lb/scf) x ton/lb
Nominal CH4 Vented	9,450	short tons/yr	(scf/yr x lb/scf) x ton/lb
Nominal N2O Vented	-	short tons/yr	(scf/yr x lb/scf) x ton/lb
Nominal Total GHG Mass Vented	24,782	short tons/yr	Sum of CO2, CH4, N2O
Nominal GWP Vented	228,377	metric tons/yr	CO2 x GWP + CH4 x GWP + N2O x GWP

Notes:
GWP - global warming potential
NMNEVOC - Non-methane, non-ethane volatile organic compounds

ATTACHMENT 6
FIRST YEAR OFF-SPEC RNG VENTING EMISSIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Additional H2S, VOC, and NH3 Emissions from Vented Off-Spec RNG -- First Year Aemetis BioRNG Cleanup Plant

Rev. 1 -- August 28, 2019

Proposed Project Emissions:

Item No.	Parameter	Value	Units	Source
Off-Spec RNG Vented -- First Year:				
1	Off-spec RNG Venting Rate	1,300	scfm	Estimate by Aemetis
2	Reserved			
3	Maximum Hourly Off-Spec RNG to new 10 mmBtu/hr Boiler	78,000	scf/hr	Item 1 x 60
3a	Reserved			
4	Maximum Daily Off-Spec RNG to new 10 mmBtu/hr Boiler	468,000	scf/day	Maximum 6 hours per day
5	Maximum Annual Off-Spec RNG to new 10 mmBtu/hr Boiler	42,978,000	scf/yr	Maximum 540 hrs first 3 months, another 11 hrs next 9 months = 551 hrs
6	Reserved			
7	Nominal H2S Content in Off-Spec RNG	< 4	ppmv	Off-spec RNG has passed through carbon sulfur removal system
8	Nominal H2S in Raw Biogas	268	lb/MMscf Raw Biogas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017
9	Nominal NH3 in Raw Biogas	1.74	lb/MMscf Raw Biogas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017
10	Nominal NMNEVOC in Raw Biogas	0.296	lb/MMscf Raw Biogas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017, sum of all non-exempt VOC compounds
11	Maximum H2S Content in Off-Spec RNG	4	ppmv	Maximum H2S content of Off-Spec RNG
12	Maximum H2S Content in Off-Spec RNG	6.06785	mg/m3	Convert ppmv to mg/m3: ppmv x 12.187 x MW/273.15 at 0C
13	Maximum H2S Content in Off-Spec RNG	3.79E-07	lb/scf	Convert mg/m3 to lb/scf: mg/m3 x 10^-3 g/mg x 1 lb/453.6 g x 1 m3/ 35.29 ft3
14	Minimum Percent of NMNEVOC removed by Sulfur Removal System	95%		Assumed minimal effectiveness of carbon in removing NMNEVOC.
15	Minimum Percent of NMNEVOC destroyed by Combustion in Boiler or RTO	0%		Vented emissions do not go to the boiler or RTO
Additional Emissions from Off-Spec RNG Vented -- First Year:				
16	Maximum Hourly H2S Emissions from Venting Off-Spec RNG (as H2S)	0.030	lb/hr	Item 3 x Item 13
17	Maximum Daily H2S Emissions from Venting Off-Spec RNG (as H2S)	0.177	lb/day	Item 4 x Item 13
18	Maximum Annual H2S Emissions from Venting Off-Spec RNG (as H2S)	16.29	lb/yr	Item 5 x Item 13
19	Maximum Annual H2S Emissions from Venting Off-Spec RNG (as H2S)	0.0081	tons/yr	Item 19/2000
20	Nominal Hourly NMNEVOC from Venting Off-Spec RNG	0.0012	lb/hr	Item 3 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
21	Nominal Daily NMNEVOC from Venting Off-Spec RNG	0.0069	lb/day	Item 4 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
22	Nominal Annual NMNEVOC from Venting Off-Spec RNG	0.64	lb/yr	Item 5 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
23	Nominal Annual NMNEVOC from Venting Off-Spec RNG	0.00032	tons/yr	Item 22/2000
24	Nominal Hourly NH3 from Venting Off-Spec RNG	0.136	lb/hr	Item 3 x Item 9 /1,000,000
25	Nominal Daily NH3 from Venting Off-Spec RNG	0.81	lb/day	Item 4 x Item 9 /1,000,000
26	Nominal Annual NH3 from Venting Off-Spec RNG	74.78	lb/yr	Item 5 x Item 9 /1,000,000
27	Nominal Annual NH3 from Venting Off-Spec RNG	0.0374	tons/yr	Item 26/2000
Additional CO2 Emissions from Off-Spec RNG Vented -- First Year:				
28	CO2 content of Off-Spec RNG	1.0%	percent	Amount of CO2 expected in Off-Spec RNG Estimated by Aemetis
29	CO2 emitted per year	429,780	scf/yr	Item 5 x Item 28
30	CO2 Density STP	0.1234	lb/scf	
31	Mass of CO2 emitted per year	53,035	lb/yr	Item 29 x Item 30
32	GWP of CO2 emitted per year	24	MT/yr	Item 31 / 2000 converted to metric tons

ATTACHMENT 7
SECOND YEAR OFF-SPEC RNG VENTING EMISSIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Additional H2S, VOC, and NH3 Emissions from Vented Off-Spec RNG -- Second and Subsequent Year Aemetis BioRNG Cleanup Plant

Rev. 1 August 28, 2019

Proposed Project Emissions:

Item No.	Parameter	Value	Units	Source
Off-Spec RNG Vented -- Second and Subsequent Year:				
1	Off-spec RNG Venting Rate	1,300	scfm	Estimate by Aemetis
2	Reserved			
3	Maximum Hourly Off-Spec RNG to new 10 mmBtu/hr Boiler	78,000	scf/hr	Item 3a / Item 2
3a	Reserved			
4	Maximum Daily Off-Spec RNG to new 10 mmBtu/hr Boiler	156,000	scf/day	Maximum 2 hours per day
5	Maximum Annual Off-Spec RNG to new 10 mmBtu/hr Boiler	3,432,000	scf/yr	Maximum 0.5% of time, or 44 hours per year
6	Reserved			
7	Nominal Percent H2S in Off-Spec RNG	< 4	ppmv	Off-spec RNG has passed through carbon sulfur removal system
8	Nominal H2S in Digester Gas	268	lb/MMscf Digester Gas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017
9	Nominal NH3 in Digester Gas	1.74	lb/MMscf Digester Gas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017
10	Nominal NMNEVOC in Digester Gas	0.296	lb/MMscf Digester Gas	SJVAPCD Dairy Gas-Fired External Combustion Spreadsheet dated July 27, 2017, sum of all non-exempt VOC compounds
11	Maximum H2S Content in Off-Spec RNG	4	ppmv	Maximum H2S content of Off-Spec RNG
12	Maximum H2S Content in Off-Spec RNG	6.06785	mg/m3	Convert ppmv to mg/m3: ppmv x 12.187 x MW/273.15 at 0C
13	Maximum H2S Content in Off-Spec RNG	3.79E-07	lb/scf	Convert mg/m3 to lb/scf: mg/m3 x 10^-3 g/mg x 1 lb/453.6 g x 1 m3/ 35.29 ft3
14	Minimum Percent of NMNEVOC removed by Sulfur Removal System	95%		Assumed minimal effectiveness of carbon in removing NMNEVOC.
15	Minimum Percent of NMNEVOC destroyed by Combustion in Boiler or RTO	0%		Vented emissions do not go to the boiler or RTO
Additional Emissions from Off-Spec RNG Vented -- Second and Subsequent Year:				
16	Maximum Hourly H2S Emissions from Venting Off-Spec RNG (as H2S)	0.030	lb/hr	Item 3 x Item 13
17	Maximum Daily H2S Emissions from Venting Off-Spec RNG (as H2S)	0.059	lb/day	Item 4 x Item 13
18	Maximum Annual H2S Emissions from Venting Off-Spec RNG (as H2S)	1.30	lb/yr	Item 5 x Item 13
19	Maximum Annual H2S Emissions from Venting Off-Spec RNG (as H2S)	0.0007	tons/yr	Item 19/2000
20	Nominal Hourly NMNEVOC from Venting Off-Spec RNG	0.0012	lb/hr	Item 3 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
21	Nominal Daily NMNEVOC from Venting Off-Spec RNG	0.0023	lb/day	Item 4 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
22	Nominal Annual NMNEVOC from Venting Off-Spec RNG	0.051	lb/yr	Item 5 x Item 10 x (1 - Item 14) x (1-Item 15) /1,000,000
23	Nominal Annual NMNEVOC from Venting Off-SpecRNG	0.000025	tons/yr	Item 22/2000
24	Nominal Hourly NH3 from Venting Off-Spec RNG	0.14	lb/hr	Item 3 x Item 9 /1,000,000
25	Nominal Daily NH3 from Venting Off-Spec RNG	0.27	lb/day	Item 4 x Item 9 /1,000,000
26	Nominal Annual NH3 from Venting Off-Spec RNG	5.97	lb/yr	Item 5 x Item 9 /1,000,000
27	Nominal Annual NH3 from Venting Off-Spec RNG	0.0030	tons/yr	Item 26/2000
Additional CO2 Emissions from Off-Spec RNG Vented -- Second and Subsequent Year:				
28	CO2 content of Off-Spec RNG	1.0%	percent	Amount of CO2 expected in Off-Spec RNG Estimated by Aemetis
29	CO2 emitted per year	34,320	scf/yr	Item 5 x Item 28
30	CO2 Density STP	0.1234	lb/scf	
31	Mass of CO2 emitted per year	4,235	lb/yr	Item 29 x Item 30
32	GWP of CO2 emitted per year	2	MT/yr	Item 31 / 2000 converted to metric tons

ATTACHMENT 8
FUTURE SITE-WIDE EMISSIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Estimated Aemetis Site-Wide Worst Case Existing (Ethanol Plant) and Future (Biogas Cleanup Plant and New Boiler) Emissions

Rev 0 August 7, 2019

Permit Unit	Description	Daily Throughput		Annual Througput		NOx EF	NOx (lb/day)	NOx (ton/yr)	CO EF	CO (lb/day)	CO (ton/yr)	VOC EF	VOC (lb/day)	VOC (ton/yr)	PM10 EF	PM10 (lb/day)	PM10 (ton/yr)	SOx EF	SOx (lb/day)	SOx (ton/yr)	
7488-1-3	Grain Rcvg/Handling	7200	tons/day	700000	tons/yr										0.000431	3.103	0.151				
7488-2-2	Grain Grinding #1	2400	tons/day	700000	tons/yr										0.0011	2.640	0.385				
7488-3-2	Grain Grinding #2	2400	tons/day	In 2-2											0.0011	2.640					
7488-4-2	Grain Grinding #3	2400	tons/day	In 2-2											0.0011	2.640					
7488-5-3	Liquefaction to RTO	210000	gal/day	70000000	gal/yr							0.072	15.12	2.52							
7488-5-3	RTO Fuel	1.68	mmBtu/hr	365	days/yr	0.0182	0.734	0.134	0.011	0.444	0.081	0.0055	0.222	0.040	0.0076	0.306	0.056	0.00285	0.115	0.021	
7488-6-3	Fermentation to RTO	In 5-3		In 5-3																	
7488-7-3	Distillation to RTO	In 5-3		In 5-3																	
7488-8-5	Decantation to RTO	In 5-3		In 5-3																	
7488-9-3	210000 gal Ethanol Tank Fugitives	Working/Breathing to Boiler										8.7	8.7	1.588							Fugitive
7488-10-3	210000 gal Ethanol Tank Fugitives	Working/Breathing to Boiler										0.5	0.5	0.091							Fugitive
7488-11-3	63000 gal 190 Proof Ethanol Tank Fugitives	Working/Breathing to Boiler										0.7	0.7	0.128							Fugitive
7488-12-3	1,050,000 gal Denatured Ethanol Tank Fugitives	Working/Breathing to Boiler										0.5	0.5	0.091							Fugitive
7488-13-3	30000 gal Gasoline Tank w Unloading Rack	18	disconnect/day	904	disconnect/yr							0.017	0.306	0.008							Fugitive
7488-14-3	30000 gal Gasoline Tank w Unloading Rack	In 13-3		In 13-3																	Fugitive
7488-15-3	Ethanol Loading Rack	160	disconnect/day	32500	disconnect/yr							0.017	2.72	0.276							Fugitive
7488-16-4	99 mmBtu/hr Boiler	99	mmBtu/hr	365	days/yr	0.00850	20.196	3.686	0.0111	26.278	4.796	0.004	9.504	1.734	0.0044	10.454	1.908	0.00285	6.772	1.236	
7488-17-4	99 mmBtu/hr Boiler	99	mmBtu/hr	365	days/yr	0.00850	20.196	3.686	0.0111	26.278	4.796	0.004	9.504	1.734	0.0044	10.454	1.908	0.00285	6.772	1.236	
7488-18-3	99 mmBtu/hr Boiler	Only Two Boilers can Operate at Once																			
7488-19-3	Flare Waste Gas (Assume 1020 Btu/scf)	280000	scf/day	500	hr/yr	0.068	19.421	0.202	0.37	105.672	1.101	0.063	17.993	0.187	0.008	2.285	0.024	0.00285	0.814	0.008	
7488-19-3	Flare Pilot (Assume 1020 Btu/scf)	2400	scf/day	365	days/yr	0.068	0.166	0.030	0.37	0.906	0.165	0.063	0.154	0.028	0.008	0.020	0.004	0.00285	0.007	0.001	
7488-20-1	25000 gpm Cooling Tower	Emissions Calculated in Permit														19.1	3.486				Fugitive
7488-21-3	WDG Storage	1600	tons/day	550000	tons/yr							0.0088	14.08	2.42							Fugitive
7488-22-2	400 bhp Fire Pump Engine	0.5	hr/day	6	hr/yr	3.68	0.00081	0.010	0.746	0.00016	0.002	0.16	0.00004	0.00042	0.091	0.00002	0.00024	0.00205	0.410	0.0025	
7488-23-1	11,211 gal Hydrated Lime Rcvg/Handling	No longer Used																			
					Totals WITH Fugitives		**60.71**	**7.75**		**159.58**	**10.94**		**80.00**	**10.85**		**53.64**	**7.92**		**14.89**	**2.50**	
					Total WITHOUT Fugitives			**7.75**			**10.94**			**6.25**			**4.44**			**2.50**	
TBD	New 12.6 mmBtu/hr Boiler						**2.56**	**0.47**		**89.51**	**16.34**		**1.64**	**0.30**		**2.25**	**0.41**		**7.19**	**1.31**	
7488-5-3	Waste Tail Gas Coumbusted in RTO						0.00	0.00		0.00	0.00		0.000026	0.0000031		0.00	0.00		0.063	0.0075	
TBD	Off-Spec Gas Venting (First Year)						0.00	0.00		0.00	0.00		0.0069	0.00032		0.00	0.00		0.00	0.00	
	Subtotal Additional Emissions						**2.56**	**0.47**		**89.51**	**16.34**		**1.646926**	**0.3003231**		**2.25**	**0.41**		**7.253**	**1.3175**	
					Totals WITH Fugitives			**8.22**			**27.28**			**11.15**			**8.33**			**3.82**	
					Total WITHOUT Fugitives			**8.22**			**27.28**			**6.55**			**4.85**			**3.82**	
					SJVAPCD Major Source Thresholds (Rule 2201.3.24.1)			10			100			10			70			70	
					SJVAPCD Offset Thresholds (Rule 2201.4.5.3)			10			100			10			14.6			27.375	

Future Emissions for New Boiler and Biogas Cleanup PLant based on Worst Case Conditions, as Explained in the Text

Notes: Existing Ethanol Plant

7488-1-3 PM 10 EF in terms of lb/ton
7488-2-2 PM 10 EF in terms of lb/ton
7488-3-2 PM 10 EF in terms of lb/ton
7488-4-2 PM 10 EF in terms of lb/ton
7488-5-3 VOC EF in terms of lb/1000 gal
7488-5-3 All EF in terms of lb/mmBtu
7488-9-3 VOC EF in terms of lb/day
7488-10-3 VOC EF in terms of lb/day
7488-11-3 VOC EF in terms of lb/day
7488-12-3 VOC EF in terms of lb/day
7488-13-3 VOC EF in terms of lb/disconnect. Working and breathing losses to boiler.
7488-15-3 VOC EF in terms of lb/disconnect
7488-16-4 VOC, PM10, SOx EF in terms of lb/mmBtu. NOx and CO EF converted from permit limit of 7 and 15 ppmvd, respectively, into lb/mmBtu.
7488-17-4 VOC, PM10, SOx EF in terms of lb/mmBtu. NOx and CO EF converted from permit limit of 7 and 15 ppmvd, respectively, into lb/mmBtu.
7488-19-3 All EF in terms of lb/mmBtu
7488-19-3 All EF in terms of lb/mmBtu
7488-20-1 Permit emission limits 19.1 lb/day, 6,971 lb/yr.
7488-21-3 VOC EF in terms of lb/ton
7488-22-2 400 hb engine operates (non-emergency) maximum of 30 minutes per day, one day per month, 12 months per year, or 0.5 hr/day and 6 hr/yr. SO2 emission factor from AP-42 Table 3.3-1 (October 1996) 0.00205 lb/bhp-hr. Other emission factors from permit (g/bhp-hr).

ATTACHMENT 9
ATC APPLICATION FORM FOR NEW BOILER

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District

www.valleyair.org

HEALTHY AIR LIVING

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate application.

[✓]	**Include a signed Authority to Construct/Permit to Operate Application**
[X]	1. Include a vicinity map, and identify the location(s) where the new/modified units will operate.
[X]	2. Equipment listing (including a list of electric motors with hp rating)
[X]	3. Include a short project description, including a process flow schematic identifying emission points.
[X]	4. Process parameters (describe throughout, operating schedule, fuel rate, raw material usage, etc.).
[X]	5. Identify control equipment/technology.
[X]	6. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
[X]	7. Any additional information required to calculate emissions.
[X]	8. $75 filing fee for each permit unit

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the following locations. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E. Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels, Inc.

2. MAILING ADDRESS:
STREET or P O BOX: P.O. Box 879
CITY: Keyes STATE: CA ZIP CODE (9-digit): 95328

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 4209 Jessup Road CITY: Ceres
If a physical address is not available:
TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL?
☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Fuel Ethanol Plant

6. S.I.C. CODE OF FACILITY:
2869

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☐ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #'s if known, a Supplemental Application Form if available, and use additional sheets if necessary*)

New 12.6 mmBtu/hour Boiler to provide steam for the existing fuel ethanol plant.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification: 2019*

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☒ YES *If "Yes", please complete the CEQA Information form.*
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)?
☐ YES *If yes, NOV/NTC #:* _____
☒ NO

13. APPLICANT NAME: Andy Foster
TITLE: President
DATE: 8/29/19
SIGNATURE: [signature]

14. APPLICANT CONTACT INFORMATION:
PHONE #:
CELL PHONE #: (650) 799-6358
E-MAIL: Andy.Foster@aemetis.com

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"HEALTHY AIR LIVING (HAL) BUSINESS PARTNER"* ☐ *"INSPECT"*

FOR APCD USE ONLY:

DATE STAMP:	FILING FEE RECEIVED:	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID:	

ATTACHMENT 10
BOILER SUPPLEMENTAL FORM

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

Boilers, Steam Generators, Dryers, and Process Heaters

Please complete one form for each different piece of equipment. For streamlining, make note if one form covers identical equipment.

This form must be accompanied by a completed Authority to Construct/Permit to Operate Application form

PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels Keyes, Inc.

LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 4209 Jessup Road, Ceres, California 95307

EQUIPMENT DESCRIPTION

Equipment Details

☒ Boiler ☐ Steam Generator ☐ Dryer ☐ Process Heater ☐ Other: _____

Number of Identical Units This Application Covers (if applicable): 1

Check all that apply: ☐ Oilfield Steam Generator ☐ Refinery Unit ☐ Wastewater Treatment Facility
☒ Fired on < 50%, by volume, PUC quality gas

Manufacturer: Trane

Model: FTBB-316F-4A-S200-GP | Serial Number: File No. 2079

☐ Indirect-Fired ☒ Direct-Fired

Flue Gas Recirculation: ☐ Forced FGR ☐ Induced FGR ☒ None

Is an O_2 Controller present? ☐ No ☒ Yes, Manufacturer: Yokogawa

Rule 4320 Type of Use and Emissions Monitoring Provisions

☒ Full Time

☐ Low Use - for units installed prior to January 1, 2009 and limited to less than 1.8 billion Btu/year, must have fuel use meter
- ☐ Tune the unit at least twice per calendar year in accordance with District Rule 4304
- ☐ Operate the unit in a manner that maintains exhaust O_2 concentration ≤ 3.00% by volume on a dry basis

☐ Pay Annual Fee - in lieu of complying with NO_x and CO emission limits of the Rule, pay annual fee per §5.1.2

Note: Low Use units must identify operational characteristics recommended by the manufacturer, which can be monitored on a monthly basis (please provide details in additional documentation).

Note: Full Time units must have either a Continuous Emission Monitoring System (CEMS) or one of the following alternate emissions monitoring plans
- ☐ CEMS, please specify all pollutants monitored: ☐ NO_x ☐ CO ☐ O_2 ☐ Other: _____
- ☐ Monitoring of NO_x, CO, and O_2 concentrations
- ☐ Periodic determination of flue gas recirculation rate by temperature measurement
- ☐ Periodic determination of flue gas recirculation rate by O_2 measurement
- ☒ Monitoring of burner mechanical adjustments and O_2 concentration
- ☐ Monitoring of the flue gas recirculation valve(s) setting
- ☐ Other Alternate Monitoring Plan (approved on a case by case basis), attach details

Note: See District policy (SSP-1105) for additional details of pre-approved alternate emissions monitoring plans, at: http://www.valleyair.org/policies_per/Policies/SSP 1105.pdf

Fuel Use Meter

☐ Gaseous Fuel Meter ☐ Liquid Fuel Meter ☒ None

Primary Burner

Manufacturer: Powerflame | Type: ☐ Standard ☒ Low NO_x ☐ Ultra Low NO_x

Model: NVAC7-GO-30 | Serial Number: 040829308

Maximum Heat Input Rating: 12.6 MMBtu/hr | Annual Heat Input: 110.376 billion

Secondary Burner

Manufacturer: None | Type: ☐ Standard ☐ Low NO_x ☐ Ultra Low NO_x

Model: | Serial Number:

(if more than one burner is present)	Maximum Heat Input Rating: _____ MMBtu/hr	Annual Heat Input: _____ billion Btu/year

EMISSIONS DATA

Note: See District BACT and District Rule 4320 requirements for applicability to proposed unit at http://www.valleyair.org/busind/pto/bact/chapter1.pdf, and http://www.valleyair.org/rules/currntrules/r4320.pdf,

Primary Fuel

Fuel Type: ☐ Natural Gas ☐ LPG/Propane ☐ Diesel ☒ Other: Conditioned Biogas from dairies

Higher Heating Value: _____ Btu/gal or 600 Btu/scf | Sulfur Content: _____ % by weight or 0.05 gr/scf

Primary Fuel Emissions Data

Operational Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
Nitrogen Oxides	7	0.0085	7	0.11	7	0.11
Carbon Monoxide	400	0.296	400	3.73	400	3.73
Volatile Organic Compounds	NA	0.0054	NA	0.07	NA	0.07
Duration (please provide justification)			NA hr/day	NA hr/yr	NA hr/day	NA hr/yr

% O_2, dry basis, if corrected to other than 3%: _____ %

Secondary Fuel

Fuel Type: ☒ Natural Gas ☐ LPG/Propane ☐ Diesel ☒ Other: Partially treated biogas with H2S < 4 ppmv

Higher Heating Value: _____ Btu/gal or 1020 Btu/scf | Sulfur Content: _____ % by weight or 0.0025 gr/scf

How will the secondary fuel be used?
☐ Secondary full-time fuel ☒ Backup for primary fuel ☐ Other: _____

Secondary Fuel Emissions Data

Operational Mode	Steady State (ppmv)	Steady State (lb/MMBtu)	Start-up (ppmv)	Start-up (lb/hr)	Shutdown (ppmv)	Shutdown (lb/hr)
Nitrogen Oxides	7	0.0085	7	0.11	7	0.11
Carbon Monoxide	400	0.296	400	3.73	400	3.73
Volatile Organic Compounds	NA	0.0054	NA	0.07	NA	0.07
Duration (please provide justification)			NA hr/day	NA hr/yr	NA hr/day	NA hr/yr

% O_2, dry basis, if corrected to other than 3%: _____ %

Source of Data

☒ Manufacturer's Specifications ☐ Emission Source Test ☐ Other _____ (please provide copies)

Additional Emissions Control Equipment

☐ Selective Catalytic Reduction - Manufacturer: _____ Model: _____
☐ Ammonia (NH_3) ☐ Urea ☐ Other: _____

☐ Non-Selective Catalytic Reduction - Manufacturer: _____ Model: _____

Control Efficiencies: NO_x _____ %, SO_x _____ %, PM_{10} _____ %, CO _____ %, VOC _____ %

☒ Other (please specify):None

HEALTH RISK ASSESSMENT DATA

Note: See Manufacturer's Specifications for Stack Parameters and Exhaust Data. All information is required.

Operating Hours

Maximum Operating Schedule: 24 hours per day, and 8760 hours per year

Receptor Data

Distance to nearest Residence	800 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest apartment, house, dormitory, etc.
Direction to nearest Residence	Northeast	Direction from the stack to the receptor, i.e. Northeast or South.
Distance to nearest Business	325 feet	Distance is measured from the proposed stack location to the nearest boundary of the nearest office building, factory, store, etc.
Direction to nearest Business	South southwest	Direction from the stack to the receptor, i.e. North or Southwest.

Stack Parameters

Release Height	15 feet above grade
Stack Diameter	23.5 inches at point of release
Rain Cap	☐ Flapper-type ☐ Fixed-type ☒ None ☐ Other: _____
Direction of Flow	☒ Vertically Upward ☐ Horizontal ☐ Other: _____° from vert. or _____° from horiz.

Exhaust Data

Flowrate: 3,450 acfm | Temperature: 488 °F

Facility Location

☐ Urban (area of dense population) ☒ Rural (area of sparse population)

Include a facility plot plan showing the location of the stack. Please indicate North on the plot plan. For public notice projects, indicate on plot plan the facility boundaries or fence line and distance(s) from stack to boundaries.

ATTACHMENT 11
ATC APPLICATION FOR THE BIOGAS CLEANUP PLANT

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District

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[X]	4. Process parameters (describe throughout, operating schedule, fuel rate, raw material usage, etc.).
[X]	5. Identify control equipment/technology.
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[X]	7. Any additional information required to calculate emissions.
[X]	8. $75 filing fee for each permit unit

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SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels, Inc.

2. MAILING ADDRESS:
STREET or P O BOX: P.O. Box 879
CITY: Keyes STATE: CA ZIP CODE (9-digit): 95328

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 4209 Jessup Road CITY: Ceres
If a physical address is not available:
TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL?
☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Fuel Ethanol and Biogas Cleanup Plant

6. S.I.C. CODE OF FACILITY:
9999

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☐ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #'s if known, a Supplemental Application Form if available, and use additional sheets if necessary*)

New Biogas Cleanup Plant

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification: 2019*

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☒ YES *If "Yes", please complete the CEQA Information form.*
☐ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☐ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)?
☐ YES *If yes, NOV/NTC #:* _____
☒ NO

13. APPLICANT NAME: Andy Foster
TITLE: President
DATE: 08/29/19
SIGNATURE:

14. APPLICANT CONTACT INFORMATION:
PHONE #:
CELL PHONE #: (650) 799-6358
E-MAIL: Andy.Foster@aemetis.com

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"**H**EALTHY **A**IR **L**IVING (**HAL**) BUSINESS PARTNER"* ☐ *"**I**NSPECT"*

FOR APCD USE ONLY:

DATE STAMP:	FILING FEE RECEIVED:	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID:	

ATTACHMENT 12
ATC APPLICATION FOR MODIFYING THE ETHANOL PLANT RTO PERMIT

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District

www.valleyair.org

HEALTHY AIR LIVING

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate application.

[✓]	**Include a signed Authority to Construct/Permit to Operate Application**
[X]	1. Include a vicinity map, and identify the location(s) where the new/modified units will operate.
[X]	2. Equipment listing (including a list of electric motors with hp rating)
[X]	3. Include a short project description, including a process flow schematic identifying emission points.
[X]	4. Process parameters (describe throughout, operating schedule, fuel rate, raw material usage, etc.).
[X]	5. Identify control equipment/technology.
[X]	6. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
[X]	7. Any additional information required to calculate emissions.
[X]	8. $75 filing fee for each permit unit

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the following locations. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E. Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels, Inc.

2. MAILING ADDRESS:
STREET or P O BOX: P.O. Box 879
CITY: Keyes STATE: CA ZIP CODE (9-digit): 95328

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 4209 Jessup Road CITY: Ceres
If a physical address is not available:
TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL?
☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Fuel Ethanol Plant

6. S.I.C. CODE OF FACILITY:
2869

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☐ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #'s if known, a Supplemental Application Form if available, and use additional sheets if necessary*)

Modify Existing RTO Permit 7488-5-3 to Allow Treatment of Waste Tail Gas from the new Biogas Cleanup Plant.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification: 2019*

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☐ YES *If "Yes", please complete the CEQA Information form.*
☒ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☒ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)?
☐ YES *If yes, NOV/NTC #:* _____
☒ NO

13. APPLICANT NAME: Andy Foster
TITLE: President
DATE: 08/29/19
SIGNATURE:

14. APPLICANT CONTACT INFORMATION:
PHONE #:
CELL PHONE #: (650) 799-6358
E-MAIL: Andy.Foster@aemetis.com

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"**H**EALTHY **A**IR **L**IVING (**HAL**) BUSINESS PARTNER"* ☐ *"**I**NSPECT"*

FOR APCD USE ONLY:

DATE STAMP:	FILING FEE RECEIVED:	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID:	

ATTACHMENT 13
ATC APPLICATION FOR MODIFYING THE ETHANOL PLANT BOILER PERMITS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District

www.valleyair.org

Checklist for Permit Applications:

To avoid unnecessary delays, please review the following checklist before submitting your Authority to Construct/Permit to Operate application.

[✓]	**Include a signed Authority to Construct/Permit to Operate Application**
[X]	1. Include a vicinity map, and identify the location(s) where the new/modified units will operate.
[X]	2. Equipment listing (including a list of electric motors with hp rating)
[X]	3. Include a short project description, including a process flow schematic identifying emission points.
[X]	4. Process parameters (describe throughout, operating schedule, fuel rate, raw material usage, etc.).
[X]	5. Identify control equipment/technology.
[X]	6. Any applicable supplemental application forms. Supplemental application forms can be found here: http://www.valleyair.org/busind/pto/ptoforms/1ptoformidx.htm
[X]	7. Any additional information required to calculate emissions.
[X]	8. $75 filing fee for each permit unit

Detailed Authority to Construct (ATC) and Permit to Operate (PTO) Application Instructions can be found here:

PDF Format: http://www.valleyair.org/busind/pto/ptoforms/atcappinstruct.pdf
Word Format: http://www.valleyair.org/busind/pto/ptoforms/WordDocs/atcappinstruct.doc

Applications may be submitted either by mail or in person at any of the following locations. The District is pleased to provide businesses with assistance in all aspects of the permitting process. Any business is welcome to call the **Small Business Assistance (SBA) Hotline** or to visit the SBA Office located in each of the regional offices. No appointment is necessary. For more information, please call the SBA Hotline serving the county in which your business is located.

Northern Region Office
(Serving San Joaquin, Stanislaus, and Merced Counties):

4800 Enterprise Way
Modesto, California 95356-8718
(209) 557-6400
FAX: (209) 557-6475
SBA Hotline: (209) 557-6446

Central Region Office
(Serving Madera, Fresno, and Kings Counties):

1990 E. Gettysburg Avenue
Fresno, California 93726-0244
(559) 230-5900
FAX: (559) 230-6061
SBA Hotline: (559) 230-5888

Southern Region Office
(Serving Tulare and Kern Counties):

34946 Flyover Court
Bakersfield, California 93308
(661) 392-5500
FAX: (661) 392-5585
SBA Hotline: (661) 392-5665

San Joaquin Valley Air Pollution Control District
Authority to Construct/Permit to Operate Application Form

HEALTHY AIR LIVING

www.valleyair.org

1. PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels, Inc.

2. MAILING ADDRESS:
STREET or P O BOX: P.O. Box 879
CITY: Keyes STATE: CA ZIP CODE (9-digit): 95328

3. LOCATION WHERE THE EQUIPMENT WILL BE OPERATED:
☐ *Check box if same as mailing address and skip to next section.*
STREET: 4209 Jessup Road CITY: Ceres
If a physical address is not available:
TOWNSHIP: RANGE:

4. IS EQUIPMENT WITHIN 1,000 FT OF A SCHOOL?
☐ YES ☒ NO

5. GENERAL NATURE OF BUSINESS:
Fuel Ethanol Plant

6. S.I.C. CODE OF FACILITY:
2869

7. TITLE V PERMIT HOLDERS ONLY: Do you request a COC (EPA Review) prior to receiving your ATC?
☐ YES *If yes, please complete and attach a Compliance Certification form (TVFORM-009)*
☐ NO

8. DESCRIPTION OF EQUIPMENT OR MODIFICATION FOR WHICH APPLICATION IS MADE:
(*Please include permit #'s if known, a Supplemental Application Form if available, and use additional sheets if necessary*)

Modify Existing Boiler Permits 7488-16-4, 17-4, and 18-3 to allow combustion of Renewable Natural Gas.

9. IS THE EQUIPMENT OR MODIFICATION ALREADY INSTALLED OR COMPLETED?
☐ YES *Please provide date of installation:*
☒ NO *Please provide expected date of installation or modification: 2019*

10. DO YOU REQUEST A PERIOD TO REVIEW THE DRAFT AUTHORITY TO CONSTRUCT (ATC) PERMIT PRIOR TO ATC ISSUANCE?
Please note that requesting a review period will delay issuance of your final permit by a corresponding number of working days. See instructions for more information on this review
☐ 3-day review
☒ 10-day review
☐ No review requested

11. IS THIS APPLICATION FOR THE CONSTRUCTION OF A NEW FACILITY?
☐ YES *If "Yes", please complete the CEQA Information form.*
☒ NO *If "No", is the proposed equipment or project allowed by either:*
- the Conditional Use Permit or other Land Use Permit? ☒ YES ☐ NO
- or by Right? ☐ YES ☐ NO

12. IS THIS APPLICATION SUBMITTED AS THE RESULT OF EITHER A NOTICE OF VIOLATION (NOV) OR A NOTICE TO COMPLY (NTC)?
☐ YES *If yes, NOV/NTC #:* _____
☒ NO

13. APPLICANT NAME: Andy Foster
TITLE: President
DATE: 8/29/19
SIGNATURE: [signature]

14. APPLICANT CONTACT INFORMATION:
PHONE #:
CELL PHONE #: (650) 799-6358
E-MAIL: Andy.Foster@aemetis.com

15. ***Optional Section:*** *DO YOU WANT TO RECEIVE INFORMATION ABOUT EITHER OF THE FOLLOWING VOLUNTARY PROGRAMS?*
☐ *"**HEALTHY AIR LIVING (HAL)** BUSINESS PARTNER"* ☐ *"**INSPECT**"*

FOR APCD USE ONLY:

DATE STAMP:	FILING FEE RECEIVED:	CHECK #:	DATE PAID:
	PROJECT #:	FACILITY ID:	

ATTACHMENT 14
CEQA FORM FOR THE BIOGAS CLEANUP PLANT AND ETHANOL PLANT MODIFICATIONS

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

San Joaquin Valley Air Pollution Control District
Supplemental Application Form

CEQA Information

The San Joaquin Valley Air Pollution Control District (District) is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the District in clarifying whether or not the project has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document (CEQA Guidelines §15060(a).

PERMIT TO BE ISSUED TO: Aemetis Advanced Fuels Keyes, Inc.
LOCATION WHERE THE EQUIPMENT WILL BE OPERATED: 4209 Jessup Road, Ceres, California 95307

Section 1: Agency Approvals

	Check "Yes" or "No" as applicable.	**Yes**	**No**
1.	Has a Lead Agency prepared an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☐ *Note 1*	☒
2.	Is a Lead Agency in the process of preparing an environmental review document (Environmental Impact Review, Mitigated Negative Declaration, Negative Declaration, or Notice of Exemption) for this project?	☒ *Note 1*	☐
	*If "**Yes**" is checked for <u>either</u> question 1 or 2, please provide the following information:* - *Lead Agency name:* Stanislaus County - *Name of Lead Agency contact person:* Rachel Wyse, Senior Planner - *Type of CEQA document prepared:* Notice of Decision to Not Determine - *Project reference number:* NA_____ - *If a CEQA Environmental Review document has been prepared for this project, **please attach a <u>copy of the Notice of Determination or the Notice of Exemption</u>*** *If "**No**" is checked for <u>both</u> questions 1 and 2, please attach an explanation*:		

<u>Note 1</u>: If you answered YES to question 1 OR 2 do not complete Section 2 of this form, and please return the completed form to the Air Pollution Control District.

Section 2: Project Information

	Note: If you answered YES to question 1 OR 2 of Section 1 do not complete this section, and please return the completed form to the Air Pollution Control District.	**Yes**	**No**
1.	Would this project result in more than 47 heavy-duty truck (HD) one-way trips per day to and from the facility? (23 heavy-duty truck (HD) round trips per day).	☐	☐
2.	Would this project result in a need for more than 350 new employees?	☐	☐
3.	Would this project result in more than 700 customer trips per day to and from the facility?	☐	☐
4.	Would this project increase the demand for water at the facility by more than 5,000,000 gallons per day?	☐	☐
5.	Would this project require construction of new water conveyance infrastructure *Post-project facility water demand exceeding the capacity of local water purveyor.*	☐	☐
6.	Would this project create a permanent need for new or additional public services for Solid Waste Disposal or Hazardous Waste Disposal? *Post-project waste discharge exceeding the capacity of the local Solid Waste Disposal or Hazardous Waste Disposal.*	☐	☐
7.	Would this project result in noticeable off-site odors that have the potential to generate nuisance complaints?	☐	☐
8.	Would this project include equipment with a noise specification greater than 90 decibels (db)?	☐	☐
9.	Has this project generated any known public concern regarding potential adverse impacts? *Public concern may be interpreted as concerns by local groups at public meetings, adverse media attention such as negative newspapers or other periodical publications, local news programs, environmental justice issues, etc.*	☐	☐
10.	Would this project result in any demolition, excavation, and/or grading/construction activities outside the perimeter of the existing facility?	☐	☐
11.	Would this project result in any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 Square feet (inside or outside the perimeter of the existing facility)?	☐	☐
12.	Is this project part of a larger development activity at the facility that collectively would result in answering YES to any of the questions listed above?	☐	☐

FOR DISTRICT USE ONLY – CEQA ANALYSIS REQUEST

PERMIT	**TECHNICAL SERVICES**
AQE Name:	AQS Name:
Facility Name:	PAS #: CEQA #:
Facility #: Project #:	Project with potential public concern? ☐ Yes ☐ No
Is this an RO project? ☐ Yes ☐ No	Detailed CEQA analysis required? ☐ Yes ☐ No
Project subject to Public Notice? ☐ Yes ☐ No	Indemnification Agreement (IA) required? ☐ Yes ☐ No ☐ N/A Letter of Credit (LOC) required? ☐ Yes ☐ No ☐ N/A
Please summarize or attach the following: - ☐ Copy of application form - ☐ CEQA Analysis Request form - ☐ GHG Determination (>230MT-CO_2e/yr? BPS?) - ☐ Expected date of ATC(s) issuance: _____	- ☐ IA/LOC received - ☐ CEQA paragraph sent to permit engineer - ☐ NOD prepared - ☐ County filing fees District check prepared - ☐ Game and Fish fees District check or proof of payment *(District check prepared after receiving applicant check)* - ☐ CEQA Ready and ok to issue ATC
Date form is forwarded to Tech. Services SVr:	Date form is forwarded back to permit engineer:

ATTACHMENT 15
NOTICE OF DETERMINATION

KLEINFELDER 1801 California Street, Suite 1100, Denver, CO 80202 **p** | 303.237.6601 **f** | 303.237.6602

Stanislaus County

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

May 20, 2019

TO: Nathan Nisely, Director of Development, Maas Energy Works, Inc.

FROM: Rachel Wyse, Senior Planner, Planning and Community Development Department

SUBJECT: **AEMETIS DAIRY DIGESTOR CLUSTER PROJECT**

Mr. Nisely,

Aemetis Advanced Fuels, LLC together with Maas Energy Works, Inc. is proposing to construct methane digestors over exisiting and/or proposed lagoons; install pipes which will convey methane gas to a primary biogas pipeline to be installed within County road right-of-ways (Moffett and Keyes Roads); and piped to the Aemetis Biofuels Refinary which will upgrade the methane (moisture removal, H_2S scrubbing, CO_2 stripping, biomethane compressors); store the biogas in an existing boiler at the Refinary; and pipe it into a Compressed Natural Gas (CNG) fill station to provide fuel to vehicles operated by the Refinary.

The dairy facilities located are located within the A-2 (General Agriculture) zoning district. A methane digestor is typically constructed over a lagoon (wastewater pond for the storage of animal wastes). As per the Stanislaus County Zoning Ordinance §21.20.020(K), lagoons are an accessory use to dairies and only subject to a use permit where required setbacks cannot be met. If required setbacks are met then the lagoon and all appurtenant structures and/or equipment (ie pipes, methane digestors, screens, etc.) is a permitted use and subject to a building permit only. Building permits are considered to be ministerial projects exempt from the California Environmental Quality Act (CEQA) as per Public Resources Code (PRC) 21080(b)(1).

Pipelines within the County road right-of-way are processed by the Stanislaus County Public Works Department via an encroachment permit and a franchise agreement. Please contact the Public Works Department to begin this process.

The exisiting Aemetis Biofuels Refinary is located in the M (Industrial) zoning district. Any upgrades to the facility will require a building permit. Fueling stations, such as the proposed CNG fill station, are a permitted use within the the M (Industrial) zoning district as per Stanislaus County Zoning Ordinance §21.60.020(B) and, as such, sujbect to a building permit only.

Please feel free to contact me at wyser@stancounty.com or (209) 525-6330 should you have any questions or need additional information.

DEPARTMENT OF PLANNING AND COMMUNITY DEVELOPMENT
1010 10TH Street, Suite 3400, Modesto, CA 95354
Planning Phone: (209) 525-6330 Fax: (209) 525-5911
Building Phone: (209) 525-6557 Fax: (209) 525-7759

March 25, 2020

Aemetis, Inc.
Atten: Robbie Macias
4209 Jessup Road
Ceres, CA 95307

SUBJECT: DIGESTOR USES AT EXISTING DAIRY FACILITIES

Dear Mr. Macias:

As presented to County staff, Aemetis Advanced Fuels LLC, is proposing to construct seven (7) methane digestors in conjunction with existing dairy facilities. Methane produced on the dairy sites will be transported via pipelines, to be located within the public right-of-way to Aemetis's existing refinery located at 4209 Jessup Road, in the Community of Keyes. The dairy facilities are located within the A-2 (General Agriculture) zoning district (See Exhibit 1 – *Requested Dairies and their locations within the County*).

Per the Stanislaus County Zoning Ordinance dairies and related infrastructure are permitted uses in the A-2 zoning district, provided the Regional Water Quality Control Board (RWQCB) does not require new or modified permit, waiver, order, or waste discharge requirements (WDR) requiring compliance with the California Environmental Quality Act (CEQA). Provided that the proposed methane digesters will not increase the number of existing mature dairy cows, will not result in a change in the volume of waste (balance mass) generated by the facility, will not result in a change of waste generated by the facility, no action by the RWQCB subject to CEQA is required.

The proposed methane digestors are considered accessory to the existing permitted dairies and subject only to building permits. Building permits are considered to be ministerial projects exempt from the CEQA as per Public Resources Code (PRC) 21080(b)(1).

The installation of pipelines within the public right-of-way are subject to review and approval by the Stanislaus County Public Works Department and may be subject to CEQA. Please contact the Public Works Department to begin this process.

Please feel free to contact me at ballardj@stancounty.com or (209) 525-6330 should you have any questions or need additional information.

Sincerely,

Jeremy Ballard

Jeremy Ballard
Associate Planner

Exhibit 1 - Requested Dairies and their locations within the County

March 23, 2020
Enclosure

Dairy Name	Dairy Address	City	State	Zip	County	APN
Ahlem Farms Jerseys	825 Ruble Road	Crows Landing	CA	95313	Stanislaus	0058-004-015-000; 058-003-007; 058-003-008
Alamo Dairy	5000 West Keyes Road	Modesto	CA	95358	Stanislaus	017-061-009
Albert Mendes Dairy	1100 Ruble Road	Crows Landing	CA	95313	Stanislaus	058-003-014; 058-003-016
Bar Vee Dairy Inc.	3031 N Washington Road	Turlock	CA	95380	Stanislaus	023-056-005; 023-056-006
K & R Blount Dairy	724 Ruble Road	Crows Landing	CA	95313	Stanislaus	058-005-014
S&S Dairy	348 E Monte Vista Rd	Ceres	CA	95307	Stanislaus	022-026-014
Trinkler Dairy	7251 Crows Landing Rd	Ceres	CA	95307	Stanislaus	022-007-013

MERCED COUNTY

COMMUNITY AND ECONOMIC DEVELOPMENT DEPARTMENT

Mark J. Hendrickson
Director

Steve Maxey
Deputy Director

2222 "M" Street
Merced, CA 95340
(209) 385-7654
(209) 726-1710 Fax
www.co.merced.ca.us

Equal Opportunity Employer

April 15, 2020

Aemetis, Inc.
Attn: Robbie Macias
4209 Jessup Road
Ceres, CA 95307

SUBJECT: DIGESTER USES AT EXISTING DAIRIES

Dear Mr. Macias,

As presented to County Staff, Aemetis Advanced Fuels LLC is proposing to construct several methane digesters within the footprint of existing operating dairy facilities within Merced County. Methane produced on these dairies will be transported via pipelines or trucks to an existing collection facility located within Stanislaus County.

Per Merced County Zoning Code, dairies and associated activities are allowed uses in the Agricultural Zones (A-1, A-2) subject to an Administrative Application or Conditional Use Permit, and subject to compliance with the County's Animal Confinement Ordinance. County Staff may allow minor modifications to permits for existing dairies under discretionary review.

Staff has determined that methane digesters are considered accessory to existing permitted dairies and may be permitted with a minor modification application. Methane digester applications have been determined to be categorically exempt from CEQA under Section 15301 – Existing Facilities of the CEQA Guidelines.

Should you have any questions, please feel free to contact me at (209) 385-7654 x4578 or brian.guerrero@countyofmerced.com.

Sincerely

Brian Guerrero

Brian Guerrero
Development Services Coordinator

Appendix B:
CNDDB, USFWS, and CNPS Special Status Species Database Results

Selected Elements by Common Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Brush Lake (3712151) OR Ceres (3712058) OR Stevinson (3712037) OR Hatch (3712048) OR Crows Landing (3712141) OR Gustine (3712038) OR Turlock (3712047))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
alkali milk-vetch *Astragalus tener var. tener*	PDFAB0F8R1	None	None	G2T1	S1	1B.2
alkali-sink goldfields *Lasthenia chrysantha*	PDAST5L030	None	None	G2	S2	1B.1
American badger *Taxidea taxus*	AMAJF04010	None	None	G5	S3	SSC
brittlescale *Atriplex depressa*	PDCHE042L0	None	None	G2	S2	1B.2
cackling (=Aleutian Canada) goose *Branta hutchinsii leucopareia*	ABNJB05035	Delisted	None	G5T3	S3	WL
California alkali grass *Puccinellia simplex*	PMPOA53110	None	None	G3	S2	1B.2
California linderiella *Linderiella occidentalis*	ICBRA06010	None	None	G2G3	S2S3	
California tiger salamander *Ambystoma californiense*	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
Cismontane Alkali Marsh *Cismontane Alkali Marsh*	CTT52310CA	None	None	G1	S1.1	
Coastal and Valley Freshwater Marsh *Coastal and Valley Freshwater Marsh*	CTT52410CA	None	None	G3	S2.1	
Conservancy fairy shrimp *Branchinecta conservatio*	ICBRA03010	Endangered	None	G2	S2	
Coulter's goldfields *Lasthenia glabrata ssp. coulteri*	PDAST5L0A1	None	None	G4T2	S2	1B.1
Crotch bumble bee *Bombus crotchii*	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Delta button-celery *Eryngium racemosum*	PDAPI0Z0S0	None	Endangered	G1	S1	1B.1
giant gartersnake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2	S2	
great blue heron *Ardea herodias*	ABNGA04010	None	None	G5	S4	
great egret *Ardea alba*	ABNGA04040	None	None	G5	S4	
hardhead *Mylopharodon conocephalus*	AFCJB25010	None	None	G3	S3	SSC
heartscale *Atriplex cordulata var. cordulata*	PDCHE040B0	None	None	G3T2	S2	1B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
hispid salty bird's-beak *Chloropyron molle ssp. hispidum*	PDSCR0J0D1	None	None	G2T1	S1	1B.1
hoary bat *Lasiurus cinereus*	AMACC05030	None	None	G5	S4	
least Bell's vireo *Vireo bellii pusillus*	ABPBW01114	Endangered	Endangered	G5T2	S2	
lesser saltscale *Atriplex minuscula*	PDCHE042M0	None	None	G2	S2	1B.1
loggerhead shrike *Lanius ludovicianus*	ABPBR01030	None	None	G4	S4	SSC
longhorn fairy shrimp *Branchinecta longiantenna*	ICBRA03020	Endangered	None	G1	S1S2	
Merced kangaroo rat *Dipodomys heermanni dixoni*	AMAFD03062	None	None	G3G4T2T3	S2S3	
Merced monardella *Monardella leucocephala*	PDLAM180C0	None	None	GX	SX	1A
moestan blister beetle *Lytta moesta*	IICOL4C020	None	None	G2	S2	
Northern California legless lizard *Anniella pulchra*	ARACC01020	None	None	G3	S3	SSC
obscure bumble bee *Bombus caliginosus*	IIHYM24380	None	None	G4?	S1S2	
pallid bat *Antrozous pallidus*	AMACC10010	None	None	G5	S3	SSC
prairie wedge grass *Sphenopholis obtusata*	PMPOA5T030	None	None	G5	S2	2B.2
prostrate vernal pool navarretia *Navarretia prostrata*	PDPLM0C0Q0	None	None	G2	S2	1B.2
Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020	None	None	GNR	S3	SSC
San Joaquin kit fox *Vulpes macrotis mutica*	AMAJA03041	Endangered	Threatened	G4T2	S2	
San Joaquin spearscale *Extriplex joaquinana*	PDCHE041F3	None	None	G2	S2	1B.2
Sanford's arrowhead *Sagittaria sanfordii*	PMALI040Q0	None	None	G3	S3	1B.2
snowy egret *Egretta thula*	ABNGA06030	None	None	G5	S4	
spiny-sepaled button-celery *Eryngium spinosepalum*	PDAPI0Z0Y0	None	None	G2	S2	1B.2
steelhead - Central Valley DPS *Oncorhynchus mykiss irideus pop. 11*	AFCHA0209K	Threatened	None	G5T2Q	S2	

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
subtle orache *Atriplex subtilis*	PDCHE042T0	None	None	G1	S1	1B.2
Swainson's hawk *Buteo swainsoni*	ABNKC19070	None	Threatened	G5	S3	
Townsend's big-eared bat *Corynorhinus townsendii*	AMACC08010	None	None	G3G4	S2	SSC
tricolored blackbird *Agelaius tricolor*	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened	None	G3T2	S2	
Valley Sacaton Grassland *Valley Sacaton Grassland*	CTT42120CA	None	None	G1	S1.1	
Valley Sink Scrub *Valley Sink Scrub*	CTT36210CA	None	None	G1	S1.1	
vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened	None	G3	S3	
vernal pool smallscale *Atriplex persistens*	PDCHE042P0	None	None	G2	S2	1B.2
vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered	None	G4	S3S4	
western pond turtle *Emys marmorata*	ARAAD02030	None	None	G3G4	S3	SSC
western red bat *Lasiurus blossevillii*	AMACC05060	None	None	G5	S3	SSC
western spadefoot *Spea hammondii*	AAABF02020	None	None	G3	S3	SSC
Yuma myotis *Myotis yumanensis*	AMACC01020	None	None	G5	S4	

Record Count: 54

United States Department of the Interior

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

In Reply Refer To: August 19, 2020
Consultation Code: 08ESMF00-2020-SLI-2664
Event Code: 08ESMF00-2020-E-08173
Project Name: Aemetis Biogas Pipeline

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

To Whom It May Concern:

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

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

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

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

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

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

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

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

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

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

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

Attachment(s):

- Official Species List

Official Species List

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

This species list is provided by:

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

Project Summary

Consultation Code: 08ESMF00-2020-SLI-2664

Event Code: 08ESMF00-2020-E-08173

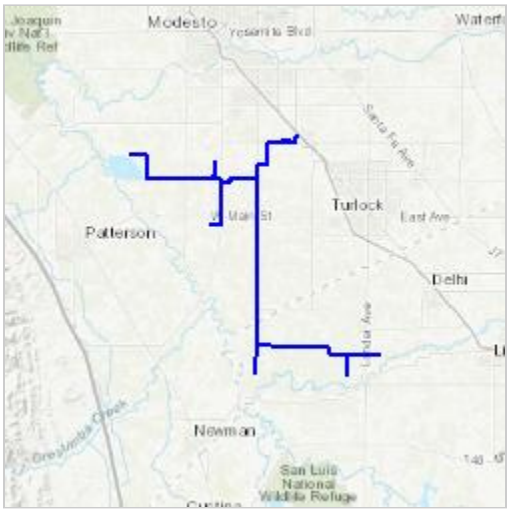
Project Name: Aemetis Biogas Pipeline

Project Type: ** OTHER **

Project Description: Biogas pipeline

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/37.53159926072891N120.9580054285385W



Counties: Merced, CA | Stanislaus, CA

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

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

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

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

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

Mammals

NAME	STATUS
Fresno Kangaroo Rat *Dipodomys nitratoides exilis* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5150 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/37/office/11420.pdf	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

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

CNPS California Native Plant Society **Inventory of Rare and Endangered Plants**

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

20 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712151, 3712058, 3712141, 3712048, 3712047 3712037 and 3712038;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	1B.1	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	1B.2	S2	G2
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	Jun,Aug,Sep(Oct)	1B.2	S1	G1
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Eryngium racemosum	Delta button-celery	Apiaceae	annual / perennial herb	Jun-Oct	1B.1	S1	G1
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.2	S2	G2
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Monardella leucocephala	Merced monardella	Lamiaceae	annual herb	May-Aug	1A	SH	GH
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
Sphenopholis obtusata	prairie wedge grass	Poaceae	perennial herb	Apr-Jul	2B.2	S2	G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 18 August 2020].

Federal Designations (Fed): (FESA, USFWS) **E:** Federally listed, endangered **T:** Federally listed, threatened **D:** Delisted	**State Designations (State):** (CESA, CDFW) **E:** State-listed, endangered **T:** State-listed, threatened **D:** Delisted

Other Designations:

CDFW_SSC: CDFW Species of Special Concern
CDFW_FP: CDFW Fully Protected

California Native Plant Society (CNPS) Designations:

Note: according to CNPS (Skinner and Pavlik 1994), plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.

1A: Plants presumed extinct in California.
1B: Plants rare and endangered in California and throughout their range.
2: Plants rare, threatened, or endangered in California but more common elsewhere in their range.
3: Plants about which need more information; a review list.

Plants 1B, 2, and 4 extension meanings:

_**.1** Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)
_**.2** Fairly endangered in California (20-80% occurrences threatened)
_**.3** Not very endangered in California (<20% of occurrences threatened, or no current threats known)

Habitat Potential

Absent [A]	- No habitat present and no further work needed.
Habitat Present [HP]	- Habitat is or may be present. The species may be present.
Critical Habitat [CH]	- Critical Habitat is present.

Potential for Occurrence Criteria:

High: Habitat (including soils and elevation factors) for the species occurs on site and a known occurrence has been recorded within 5 miles of the site.
Low-Moderate: Either low quality habitat (including soils and elevation factors) for the species occurs on site and a known occurrence exists within 5 miles of the site; or suitable habitat strongly associated with the species occurs on site, but no records were found within the database search.
Presumed Absent: Focused surveys were conducted and the species was not found, or species was found within the database search but habitat (including soils and elevation factors) do not exist on site, or the known geographic range of the species does not include the survey area.

Sources: Cal-Flora 2019, Cal-Herps 2019, CDFG 1994, CDFG 2010, CDFW 2019, CBD 2012, CNDDB 2019, CNPS 2019, Gruver 2006, Jepson 2019, Mayer 1988, Moyle et al. 1995, Shuford 2008, Sullivan 1996, Tesky 1994, UC Davis 2010, UC Davis 2012, USFS 2007, Zeiner et al. 1990.

Appendix C:
Mitigation Monitoring and Reporting Program

MITIGATION MONITORING AND REPORTING PROGRAM FOR THE AEMETIS BIOGAS PIPELINE PROJECT

Mitigation Measure	Reporting Milestone	Reporting / Responsible Party	VERIFICATION OF COMPLIANCE	
			Initials	Date
AIR QUALITY **AQ-1:** The construction contractor shall comply with the San Joaquin Valley Air Pollution Control District Rule VIII as it pertains to fugitive dust (PM10).	During Construction	Aemetis Construction Contractor		
AQ-2: Wind Erosion Control best management practices will be implemented as follows: • Water shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution. • All distribution equipment shall be equipped with a positive means of shutoff. • Unless water is applied by means of pipelines, at least one mobile unit shall be available at all times to apply water or dust palliative to the Project. • If reclaimed water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements. Non-potable water shall not be conveyed in tanks or drain pipes that will be used to convey potable water and there shall be no connection between potable and non-potable supplies. Non-potable tanks, pipes and other conveyances shall be marked “NON-POTABLE WATER – DO NOT DRINK.” • Materials applied as temporary soil stabilizers and soil binders will also provide wind erosion control benefits.	During Construction	Aemetis Construction Contractor		

BIOLOGICAL RESOURCES **BIO-1:** Construction specifications will include the following BMPs, where applicable, to reduce erosion during construction: • Implementation of the Project shall require approval of a site-specific SWPPP or Water Pollution Control Program (WPCP) that would implement effective measures to protect water quality, which may include a hazardous spill prevention plan and additional erosion prevention techniques; • Existing vegetation shall be protected in place where feasible to provide an effective form of erosion and sediment control; • Stabilizing materials shall be applied to the soil surface to prevent the movement of dust from exposed soil surfaces on construction sites as a result of wind, traffic, and grading activities; • Roughening and/or terracing shall be implemented to create unevenness on bare soil through the construction of furrows running across a slope, creation of stair steps, or by utilization of construction equipment to track the soil surface. Surface roughening or terracing reduces erosion potential by decreasing runoff velocities, trapping sediment, and increasing infiltration of water into the soil, and aiding in the establishment of vegetative cover from seed. • Soil exposure shall be minimized through the use of temporary BMPs, groundcover, and stabilization measures; • The contractor shall conduct periodic maintenance of erosion- and sediment-control measures.	During Construction	Aemetis Construction Contractor		
BIO-2: To conform to water quality requirements, the Project must implement the following: • Vehicle maintenance, staging and storing equipment, materials, fuels, lubricants, solvents, and other possible contaminants shall be a minimum of 100 feet from irrigation and drainage canals within the BSA. Any necessary equipment washing shall occur where the water cannot flow into surface waters. The Project specifications shall require the contractor to operate under an approved spill prevention and clean-up plan; • Construction equipment shall not be operated in flowing water; if necessary, equipment buckets and arms may be used within flowing water. • Construction work shall be conducted according to site-specific construction plans that minimize the potential for sediment input to WoUS and WoS; • Raw cement, concrete or concrete washings, asphalt, paint or other coating material, oil or other petroleum products, or any other substances that could be hazardous to aquatic life shall be prevented from contaminating the soil or entering surface waters; • Equipment used in and around surface waters shall be in good working order and free of dripping or leaking contaminants; and, • Any surplus concrete rubble, asphalt, or other debris from construction shall be taken to an approved disposal site.	During Construction	Aemetis Construction Contractor		

BIO-3:	Construction personnel must receive environmental awareness training. Awareness training shall be given by the Project biologist(s) who have experience in the natural history of species that may occur within the Project area. The training will cover protocol for, identification of, and natural history of the special status species that have the potential to occur within the Project area (such as Swainson's hawk, tricolored blackbird, and western red bat).	During Construction	Aemetis		
BIO-4:	If vegetation removal is necessary for Project activities, removal of large diameter trees will be avoided to the greatest extent practicable. Any large diameter trees that cannot be protected within the Project impact area shall be removed outside of the Swainson's hawk nesting season (February 1st – August 31st), one year prior to construction.	During Construction	Aemetis Construction Contractor		
BIO-5:	If vegetation removal is necessary for Project activities and Swainson's hawk nests are discovered within ¼ mile of the Project area, a 300-foot no-work buffer will be installed around the nest using ESA fencing and the Project biologist will monitor the nest until it is determined that the young have fledged. Additional appropriate protective measures may be developed in coordination with CDFW.	During Construction	Aemetis Construction Contractor		
BIO-6:	If tree removal is required, prior to tree removal the Project biologist will conduct surveys to determine if the trees designated for removal are potentially suitable bat habitat. Potential "bat habitat trees" typically are mature trees with features such as open cavities, crevices, or loose bark.	Prior to Construction	Aemetis		
BIO-7:	If tree removal is required, removal of trees determined to be potentially suitable for bats must be removed between September 1st and March 31st, outside of the bat maternity season (April 1st –August 31st). Additional specific tree removal procedures (including potential exclusions, two step tree removal, removal of bark etc.) will be determined on a case by case basis by the Project biologist. Potential bat habitat trees not requiring removal will be protected in place with ESA fencing. If surveys for "bat habitat trees" reveal large establish maternity colonies and impacts to these colonies cannot be avoided, coordination will occur with CDFW to determine the best possible course of action.	During Construction	Aemetis		
BIO-8:	If removal of trees that are potentially suitable bat habitat is required, a biologist will monitor the removal of all potentially suitable bat habitat trees. Additionally, a biologist will inspect downed trees, identified as potentially suitable, for signs of bats prior to the trees being removed offsite. If a bat is discovered in downed vegetation, the bat(s) will be taken to a wildlife rehabilitation center.	During Construction	Aemetis		

BIO-9:	Vegetation removal or earthwork shall be minimized during the nesting season (February 1st – August 31st). If vegetation removal is required during the nesting season (February 1st – August 31st), a pre-construction nesting bird survey must be conducted within 7 days prior to vegetation removal. Within 2 weeks of the nesting bird survey, all vegetation cleared by the biologist will be removed by the contractor. A minimum 100-foot no-disturbance buffer will be established around any active nest of migratory birds and a minimum 300-foot no-disturbance buffer will be established around any nesting raptor species. The contractor must immediately stop work in the buffer area until the appropriate buffer is established and is prohibited from conducting work that could disturb the birds (as determined by the Project biologist and in consultation with wildlife agencies) in the buffer area until a qualified biologist determines the young have fledged. A reduced buffer can be established if determined appropriate by the Project biologist and approved by CDFW.	During Construction	Aemetis		
CULTURAL RESOURCES					
CR-1:	Conduct archaeological monitoring in areas of high sensitivity for buried archaeological resources following areas designated in the Figure 5 of the Initial Study. Monitoring efforts can be reduced at the discretion of the archaeologist.	During Construction	Aemetis		
CR-2:	If previously unidentified cultural materials are unearthed during construction, work shall be halted in that area until a qualified archaeologist can assess the significance of the find and develop a plan for documentation and removal of resources if necessary. The final disposition of archaeological, historical, and paleontological resources recovered on state lands under the jurisdiction of the California State Lands Commission must first be approved by the Commission. An additional archaeological survey will be needed if Project limits are extended beyond the present survey limits.	During Construction	Aemetis Construction Contractor Stanislaus County		
CR-3:	Section 5097.94 of the Public Resources Code and Section 7050.5 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. If human remains are encountered, work should halt in that vicinity and the county coroner should be notified immediately. At the same time, an archaeologist should be contacted to evaluate the situation. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within twenty-four hours of such identification. CEQA details steps to be taken if human burials are of Native American origin.	Prior to and During Construction	Aemetis Construction Contractor Stanislaus County		

GREENHOUSE GASES **GGE-1:** The contractor must comply with air pollution control rules, regulations, ordinances, and statutes that apply to work performed under the Contract, including air pollution control rules, regulations, ordinances, and statutes provided in Govt Code § 11017 (Pub Cont Code § 10231).	During Construction	Aemetis Construction Contractor		
HAZARDS AND HAZARDOUS WASTE **HAZ-1:** The following best practices shall be implemented during construction of the pipeline to ensure the facility does not present a new significant risk of exposure to hazardous material in the form of biogas. • The pipeline shall be airtight and must be tested to demonstrate as such prior to operation for the transport of biogas. • The pipeline shall be fluid, pressure, and corrosion resistant. • The pipeline shall be designed to include security valves placed upstream of the installations intended for production, storage treatment and use of biogas. • Systems that could trigger security valves shall be installed in easy to access locations.	Prior to During Construction	Aemetis Construction Contractor		
HAZ-2: Prepare a Health and Safety Plan prior to the start of construction which will include plans for addressing gas leaks, fires, or other failures of the pipeline. The Plan shall identify sensitive receptors and protective measures to ensure risk it minimized to the greatest extent feasible.	Prior to During Construction	Aemetis Construction Contractor		
HAZ-3: The contractor shall prepare a Spill Prevention, Control, and Countermeasure Program (SPCCP) prior to the commencement of construction activities. The SPCCP shall include information on the nature of all hazardous materials that shall be used on-site. The SPCCP shall also include information regarding proper handling of hazardous materials, and clean-up procedures in the event of an accidental release. The phone number of the agency overseeing hazardous materials and toxic clean-up shall be provided in the SPCCP.	Prior to During Construction	Aemetis Construction Contractor		
HAZ-4: As is the case for any project that proposes excavation, the potential exists for unknown hazardous contamination to be revealed during Project construction. The construction contractor shall prepare an Unknown Hazard Procedures Manual to provide a plan for how previously unknown hazardous waste/material encountered during construction would be handled to maintain public and worker health and safety.	During Construction	Aemetis Construction Contractor		

NOISE **NOI-1:** To minimize the construction-generated noise, the following construction noise best management practices shall be followed: • Do not operate construction equipment or run the equipment engines from 7:00 p.m. to 7:00 a.m. or on Sundays, with the exception that you may operate equipment within the Project limits during these hours to: o Service traffic control facilities o Service construction equipment • Equip an internal combustion engine with the manufacturer recommended muffler. • Do not operate an internal combustion engine on the job site without the appropriate muffler. A variance from these requirements may be provided by request at the discretion of Stanislaus County.	During Construction	Aemetis Construction Contractor		

Appendix D:
Distribution List

A Notice of Availability was distributed to the following agencies and interested parties (unless IS hardcopies specified).

State Government

California State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044
(IS hardcopy)

California Air Resources Board
1001 I Street
Sacramento, CA 95814

California Department of Conservation
Land Resource Protection
801 K Street, MS 14-15
Sacramento, CA 95814

California Department of Fish and Wildlife Region 4
1234 E. Shaw Avenue
Fresno, CA 93710

Caltrans
District 10
1976 E Chart Way
Stockton, CA 95205

Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670

Local Agencies and Organizations

Ceres Unified School District
PO Box 307
Ceres, CA 95307

Chatom Union School District
7201 Clayton Ave
Turlock, CA 95380

City of Ceres Planning
2220 Magnolia Street
Ceres, CA 95307

City of Modesto
Attn: Steve Mitchell, William Wong, Brad Wall, Monte Hamilton
1010 10th Street
Modesto, CA 95354

County of Merced
Department of Public Works
Attn: Brian Guerrero
345 W 7th Street
Merced, CA 95341

Keyes Community Services District
Attn: Michelle Harris
PO Box 699
Keyes, CA 95328

Keyes Fire Protection District
5629 7th Street
Keyes, CA 95328

Keyes Municipal Advisory Council
PO Box 1112
Keyes, CA 95328

Keyes School District
Attn: Tom Changnon
4001 Lucinda Ave
Keyes, CA 95328

Modesto Fire Department
409 12th Street
Modesto, CA 95354

Modesto Irrigation District
1231 11th Street
Modesto, CA 95354

PG&E
1524 N Carpenter Road
Modesto, CA 95351

San Joaquin Valley Air Pollution Control District
4800 Enterprise Way
Modesto, CA 95356

Stanislaus Consolidated Fire Protection District
3324 Topeka Street
Riverbank, CA 95367

Stanislaus County Board of Supervisors District 2
Attn: Supervisor Chiesa
1010 10th Street, Suite 6500
Modesto, CA 95354

Stanislaus County Board of Supervisors District 5
Attn: Supervisor DeMartini
1010 10th Street, Suite 6500
Modesto, CA 95354

Stanislaus County Building Permits Division
1010 10th Street, Suite 3400
Modesto, CA 95354

Stanislaus County Clerk-Recorder
1021 I Street, Suite 101
Modesto, California 95358

Stanislaus County Counsel
1010 10th Street, #6400
Modesto, CA 95354

Stanislaus County Environmental Review Committee
1010 10th Street, Suite 3400
Modesto, CA 95354

Stanislaus County Environmental Services
Groundwater Resources
3800 Cornucopia Way, Suite C
Modesto, CA 95358

Stanislaus County Farm Bureau
1201 L Street
Modesto, CA 95353

Stanislaus County Hazardous Material
Attn: Emily Grimes
3800 Cornucopia Way, Suite C
Modesto, CA 95358

Stanislaus County Office of Emergency Services
Attn: Randy Crook
3705 Oakdale Road
Modesto, CA 95357

Stanislaus County Sheriff
250 E. Hackett Road
Modesto, CA 95358

Turlock Irrigation District
333 E Canal Drive
Turlock, CA 95380

Turlock School District
PO Box 819013
Turlock, CA 95381

West Turlock Subbasin GSA
333 E Canal Drive
Turlock, CA 95381

Union Pacific Railroad
Attn: Real Estate Department
1400 Douglas Street, Stop 1690
Omaha, NE 68179