

**Department of  
Conservation and  
Development**

30 Muir Road  
Martinez, CA 94553

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Costa  
County**



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**October 7, 2020**

**NOTICE OF PUBLIC REVIEW AND INTENT TO ADOPT A  
PROPOSED MITIGATED NEGATIVE DECLARATION**

Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970" as amended to date, this is to advise you that the Contra Costa County Department of Conservation and Development, Community Development Division, has prepared an initial study evaluating the potential environmental impacts of the following project:

- 1. Project Title:** Ameresco Keller Canyon RNG LLC – Proposed Renewable Natural Gas Processing Facility and Pipeline Project (Ameresco RNGPFP)
- 2. County File Number:** Land Use Permit LP18-2022, amending LP89-2020
- 3. Lead Agency:** Contra Costa County, Department of Conservation and Development
- 4. Lead Agency Contact Person and Phone Number:** Stan Muraoka, AICP  
(925) 674-7781
- 5. Project Location:** Keller Canyon Landfill, 901 Bailey Road, Pittsburg, CA 94565 in the Pittsburg area in unincorporated Contra Costa County (Assessor's Parcel Numbers 094-360-008, -019, -020, -022; 094-080-012; 094-090-002; 094-160-004, -005, -006)
- 6. Applicant's Name, Address, and Phone Number:** Ameresco Keller Canyon RNG LLC  
111 Speen Street, Suite 410  
Framingham, MA 01701  
(508) 661-2200  
Attn: Alan Siegarth

- 7. Description of Project:** Ameresco Keller Canyon RNG LLC (Ameresco) owns and operates an existing landfill gas-to-energy power plant (LFGTE plant) with a peak capacity of 3.8 megawatts at Keller Canyon Landfill (KCL), located at 901 Bailey Road in the Pittsburg area in unincorporated Contra Costa County. KCL is a Class II waste disposal site operating in accordance with applicable local, State, and federal regulations. KCL is required by permit and regulation to collect and control landfill gas (LFG) to minimize impacts to the community and environment. The gas collection and control system are expanded regularly as KCL continues to dispose of waste, and the volume of LFG generated increases.

LFG or “natural gas” consists of nearly 100 percent methane, and therefore is a valuable source of fuel. Ameresco has contracted with the Keller Canyon Landfill Company for the right to utilize the LFG for energy production or other beneficial uses as allowed by regulations. Since 2009, Ameresco has operated a LFGTE power plant that processes the LFG by filtration and drying to create fuel used to fire internal combustion generators to produce electricity. The LFGTE plant occupies approximately 13,000 square feet of an 803-acre parcel on the KCL property. At present, the volume of LFG generated at KCL exceeds the fuel demands of the LFGTE plant, and the excess LFG is consumed in an enclosed flare facility located adjacent to the LFGTE plant.

Ameresco is proposing a renewable natural gas processing facility and pipeline (RNGPFP) that includes construction and operation of a new RNG processing facility and an underground transmission pipeline. The RNGPFP would significantly reduce LFG flows to the enclosed flare facility. The new RNG processing facility would operate independently of the operation of the existing LFGTE plant and would significantly increase the utilization of LFG for energy, by processing the landfill gas to sufficient quality to allow it to be placed into the regional natural gas network. The footprint of the new RNG processing equipment would cover an area of approximately 48,000 square feet (1.1 acres) on a new level pad of approximately 84,000 square feet (1.9 acres). The new RNG processing facility would operate 24 hours per day/7 days per week and would be manned by two operators for 40 hours per week. The proposed processing equipment includes compressors, filters, direct fuel recuperative thermal oxidizer, enclosed flare, thermal and pressure swing adsorption units, and media beds to treat LFG to meet PG&E’s Rule 21 standards. Most of the equipment would be less than 10 feet in height and, except for the proposed enclosed flare, a few larger pieces of equipment would vary in height from 25 to 35 feet. The proposed enclosed flare would be approximately 50 feet in height, the same height as the existing KCL enclosed flare facility.

The RNG pipeline would carry the RNG from the new processing facility to a connection with the PG&E natural gas transmission pipeline network northeast of the site. The design of the pipeline would meet and/or exceed all regulatory requirements and/or industry standards. The pipeline would start at the RNG processing facility on a portion of the KCL Primary Project Area, traverse through the KCL-owned property known as the Special Buffer Area (SBA), and into the contiguous PG&E-owned utility corridor. Within this utility corridor, the pipeline would go under the Contra Costa Canal. The pipeline would terminate in a metering station to be owned and operated by Ameresco. The metering station would then connect with the existing PG&E STANPAC 3 gas transmission pipeline at a PG&E-owned STANPAC 3 valve lot. The estimated total pipeline length is approximately 3.4 miles. The pipeline would be buried underground with 48 inches of minimum cover and would be a four-inch diameter steel-wrapped pipe designed for operation at an estimated pressure of 680 pounds per square inch.



Construction of the Ameresco RNGPFP would take 12 to 14 months. During this time, the level pad area adjacent to the existing RNG processing facility would be constructed using approximately 89,000 cubic yards of imported earth fill, covering a total area of 189,000 square feet (4.3 acres) of land, followed by installation of new RNG processing equipment. Concurrently, the RNG transmission pipeline would be installed. The installation of the pipeline would involve creating a trench, placing the pipeline within the trench, and backfilling after placement. The pipeline would be placed at a depth of four feet in most locations. For the pipeline segment in PG&E property, the pipeline would be constructed at a minimum depth of four feet, to a depth of up to 50 feet to meet minimum clearance specifications for the Contra Costa Canal.

- 8. Surrounding Land Uses and Setting:** The Ameresco RNGPFP is located almost entirely on KCL property. The LCL property is approximately 2,345 acres, which consists of a Primary Project Area of approximately 1,596 acres and an SBA of approximately 750 acres. Along with open space, active landfill operations occur within the Primary Project Area, which includes landfill infrastructure, administration, operations, and waste disposal. Within the Primary Project Area, landfill activities encompass 375 acres, and the landfill disposal footprint covers 244 acres. The SBA is conserved open space located directly east of, and contiguous to, the Primary Project Area. The SBA serves to “buffer” or isolate the landfill from surrounding land uses and is reserved for uses consistent with open space, agriculture, and non-waste disposal landfill infrastructure as determined by Contra Costa County. The Ameresco RNGPFP would be located on the following KCL-owned parcels.

Location	APN
Primary Project Area	094-360-008
	094-360-019
Special Buffer Area	094-360-020
	094-360-022

A portion of the RNG transmission pipeline would be in PG&E property east of, and contiguous to, the SBA. The PG&E property consists of five parcels that total approximately 212 acres, including four parcels in the City of Pittsburg that total approximately 52 acres and one parcel of approximately 160 acres in unincorporated Contra Costa County. The PG&E property is open space land that serves as a north-south utility corridor and contains large electrical transmission lattice towers, overhead high-voltage electrical transmission lines, and an underground gas transmission pipeline. The northernmost PG&E parcel includes the STANPAC 3 valve lot. A portion of the Ameresco RNGPFP pipeline would be located on the following PG&E-owned parcels.

Location	APN
County	094-080-012
Pittsburg	094-090-002
	094-160-004
	095-160-005
	095-160-006

Land immediately surrounding the Ameresco RNGPFP includes the above described KCL Primary Project Area and SBA and the adjoining PG&E utility corridor. The Concord Hills open space is adjacent to KCL to the south and southeast. The nearest developed non-landfill land uses are single-family residences located off the KCL property approximately 0.33 mile north-northwest of the proposed project site; single-family residences located about 0.40 mile west of the proposed project

site west of Bailey Road; and single-family residences and the City of Pittsburg Water Treatment Plant located east of the project site and adjacent to the PG&E utility corridor.

- 9. Determination:** The County has determined that without mitigation the project may result in significant impacts to the environment. Therefore, pursuant to California Code of Regulations Section 15070, a Mitigated Negative Declaration/Initial Study has been prepared which identifies mitigation measures to be incorporated into the project that will reduce the impacts to less than significant levels. Prior to adoption of the Mitigated Negative Declaration, the County will be accepting comments on the Mitigated Negative Declaration/initial study during a 28-day public comment period.

A copy of the Mitigated Negative Declaration/Initial Study and all documents referenced therein may be reviewed by contacting the offices of the Department of Conservation & Development during normal business hours, located at 30 Muir Road in Martinez.

**Public Comment Period** – The period for accepting comments on the adequacy of the environmental document will extend to **4:00 P.M., Friday, November 13, 2020**. Any comments should be submitted in writing to the following address:

Contra Costa County  
Department of Conservation & Development  
**Attn: Stan Muraoka, AICP**  
30 Muir Road  
Martinez, CA 94553

The proposed Mitigated Negative Declaration and the proposed project will be considered at a meeting of the County Planning Commission for recommendation to the County Board of Supervisors. The **tentative** hearing date before the County Planning Commission for consideration of the project and the Mitigated Negative Declaration is ***Wednesday, December 9, 2020***. Hearing notices will be sent out prior to the finalized hearing date.

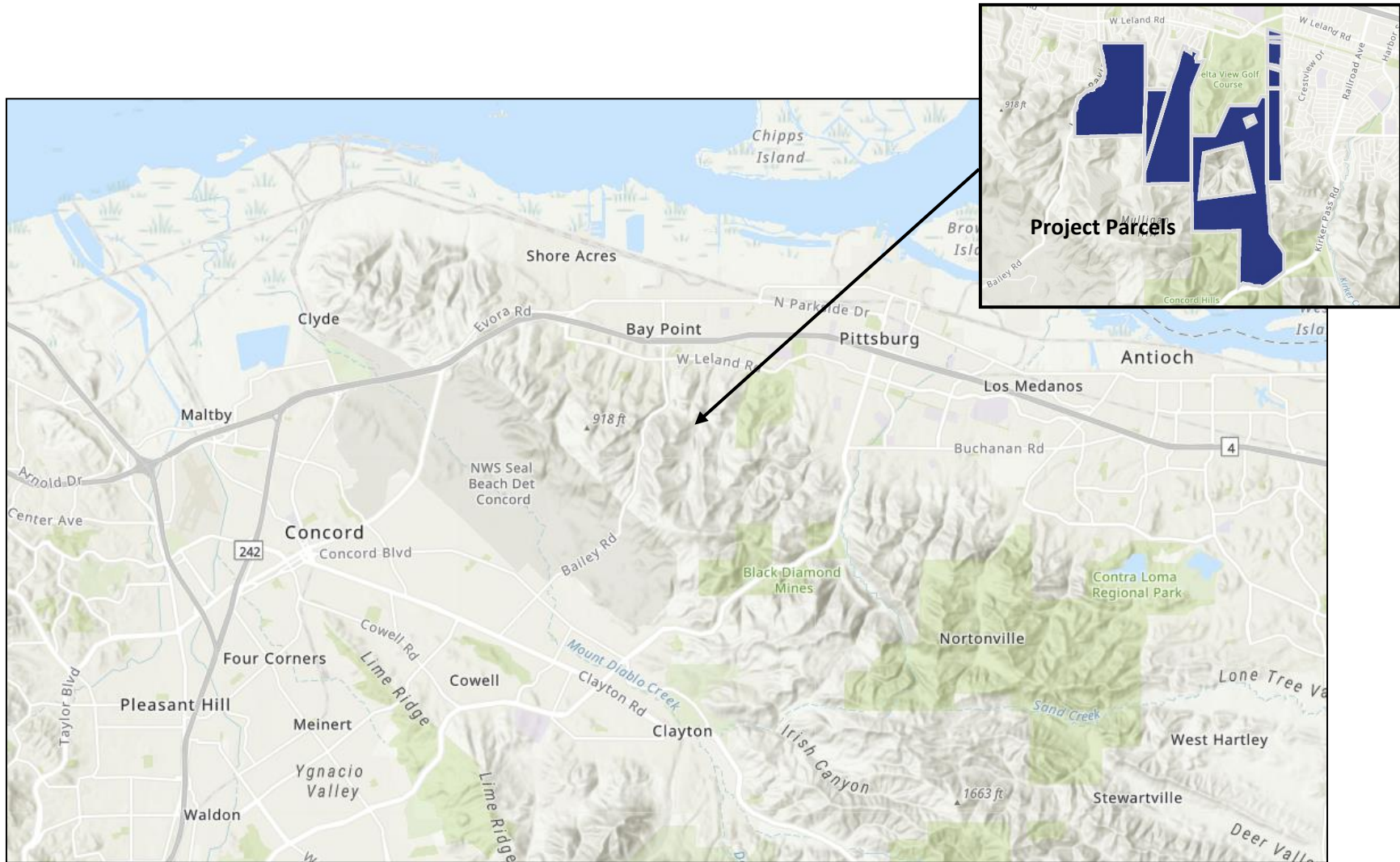
**Additional Information** – For additional information on the Mitigated Negative Declaration and the proposed project, you can contact Stan Muraoka, AICP by telephone at (925) 674-7781, or email at [stanley.muraoka@dcd.cccounty.us](mailto:stanley.muraoka@dcd.cccounty.us)

Sincerely,



Stan Muraoka, AICP  
Principal Planner  
Department of Conservation & Development

cc: County Clerk's Office (2 copies)  
attachments: Project Vicinity  
Project Area

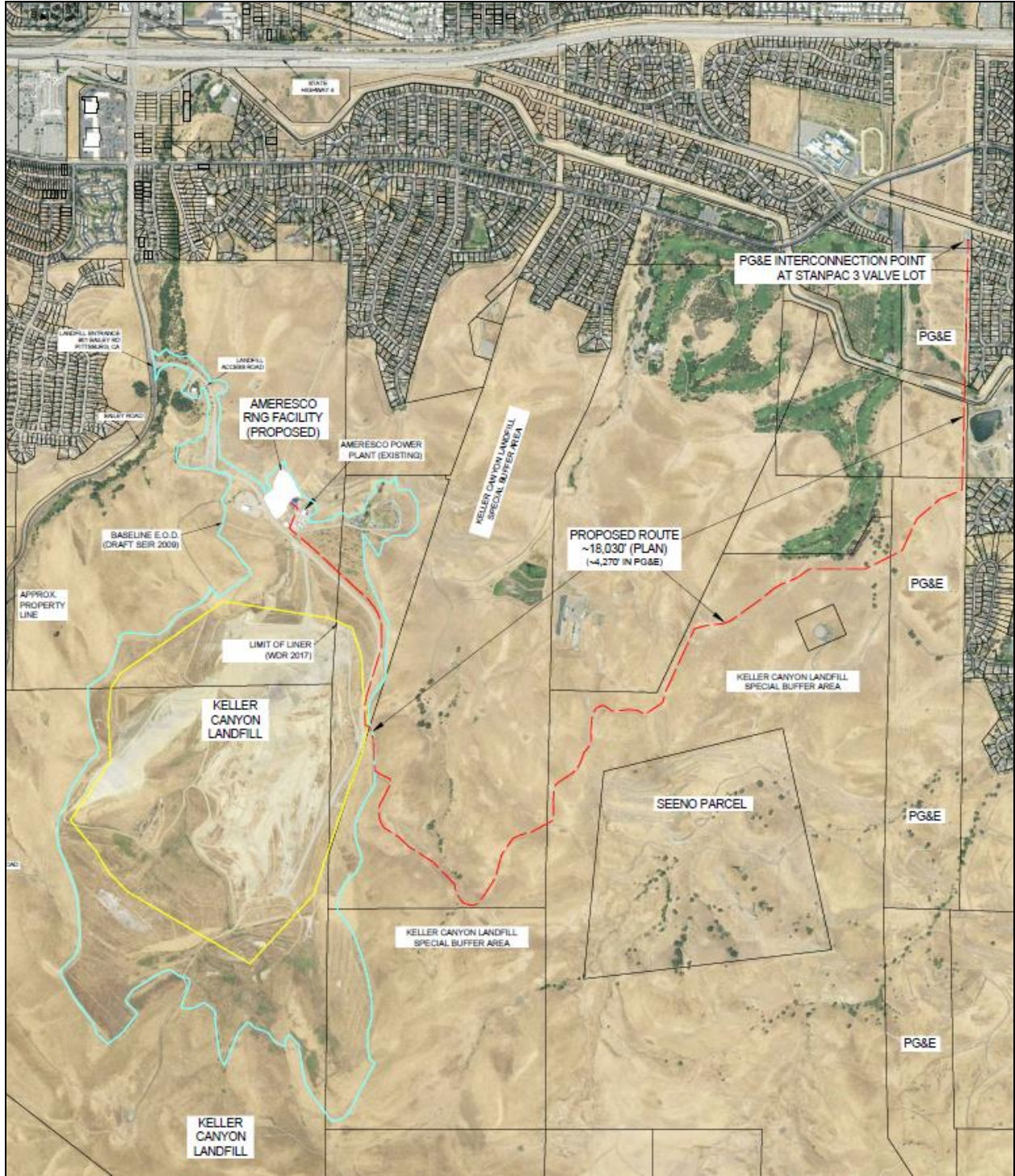


**Project Vicinity**

**Ameresco Gas Processing and Pipeline Project**

Source: Accela, 2020.





**Project Area**

**Ameresco Gas Processing and Pipeline Project**

Source: Ameresco Keller Canyon (Bryan A. Stirrat & Associates), 2020.

**CEQA ENVIRONMENTAL CHECKLIST FORM (REVISED JANUARY 7, 2019)**

- 1. Project Title:** Ameresco Keller Canyon RNG LLC – Proposed Renewable Natural Gas Processing Facility and Pipeline Project (Ameresco RINGPFP)
- County File Number – Land Use Permit LP18-2022 (amending LP89-2020)
- 2. Lead Agency Name and Address:** Contra Costa County  
Department of Conservation and Development  
30 Muir Rd.  
Martinez, CA 94553
- 3. Contact Person and Phone Number:** Stan Muraoka, AICP  
(925) 674-7781
- 4. Project Location:** Keller Canyon Landfill, 901 Bailey Road, Pittsburg, CA 94565 in the Pittsburg area in unincorporated Contra Costa County (Assessor’s Parcel Numbers 094-360-008, -019, -020, -022; 094-080-012; 094-090-002; 094-160-004, -005, -006)
- 5. Project Sponsor's Name and Address:** Ameresco Keller Canyon RNG LLC  
111 Speen Street, Suite 410  
Framingham, MA 01701  
Attn: Alan Siegwarth
- 6. General Plan Designation:** LF, Landfill; OS, Open Space
- 7. Zoning:** A-3, Heavy Agricultural; A-4 Agricultural Preserve
- 8. Description of Project:** Ameresco Keller Canyon RNG LLC (Ameresco) owns and operates an existing landfill gas-to-energy power plant (LFGTE plant) with a peak capacity of 3.8 megawatts at Keller Canyon Landfill (KCL), located at 901 Bailey Road in the Pittsburg area in unincorporated Contra Costa County. Figure 1 shows the project location. KCL is a Class II waste disposal site operating in accordance with applicable local, State, and federal regulations. KCL is required by permit and regulation to collect and control landfill gas (LFG) to minimize impacts to the community and environment. The gas collection and control system are expanded regularly as KCL continues to dispose of waste, and the volume of LFG generated increases. As required by Keller Canyon Landfill Land Use Permit LP89-2020 Condition of Approval 31.7 (Methane Recovery), KCL is required to explore use of the LFG as a fuel commodity.

LFG is a valuable source of fuel. Consistent with LP89-2020 Condition of Approval 31.7, Ameresco has contracted with the Keller Canyon Landfill Company for the right to utilize the LFG for energy production or other beneficial uses as allowed by regulations. Since 2009, Ameresco has operated a

LFGTE power plant that processes the LFG by filtration and drying to create fuel used to fire internal combustion generators to produce electricity. The LFGTE plant is shown on Figure 2. The LFGTE plant occupies approximately 13,000 square feet of an 803-acre parcel on the KCL property. At present, the volume of LFG generated at KCL exceeds the fuel demands of the LFGTE plant, and the excess LFG is consumed in an enclosed flare facility located adjacent to the LFGTE plant.

Ameresco is proposing a renewable natural gas processing facility and pipeline (RNGPFP) that includes construction and operation of a new RNG processing facility and an underground transmission pipeline. As shown on Figure 3, the proposed RNG processing facility would be constructed in the landfill area north of the LFGTE plant. The RNGPFP would significantly reduce LFG flows to the existing KCL enclosed flare facility. The new RNG processing facility would operate independently of the operation of the existing LFGTE plant and would significantly increase the utilization of LFG for energy, by processing the landfill gas to sufficient quality to allow it to be placed into the regional natural gas network. The footprint of the new RNG processing equipment would cover an area of approximately 48,000 square feet (1.1 acres) on a new level pad of approximately 84,000 square feet (1.9 acres). The new RNG processing facility would operate 24 hours per day/7 days per week and its operation would be overseen by two operators for 40 hours per week. Most of the equipment would be less than 10 feet in height and, except for the proposed enclosed flare, a few larger pieces of equipment would vary in height from 25 to 35 feet. The proposed enclosed flare would be approximately 50 feet in height, the same height as the existing KCL enclosed flare facility.

The RNG pipeline would carry the RNG from the new processing facility to a proposed PG&E metering station for connection with the PG&E natural gas transmission pipeline network northeast of the site. The design of the pipeline would meet and/or exceed all regulatory requirements and/or industry standards. The pipeline would start at the RNG processing facility located on a portion of the KCL Primary Project Area, traverse through the KCL-owned property known as the Special Buffer Area (SBA), and into the contiguous PG&E-owned utility corridor. Within this utility corridor, the pipeline would go under the Contra Costa Canal. The pipeline would terminate in an interconnect station to be owned and operated by Ameresco. The interconnect station would then connect with the existing PG&E STANPAC 3 gas transmission pipeline at a PG&E-owned STANPAC 3 valve lot. The estimated total pipeline length is approximately 3.4 miles. The pipeline would be buried underground with 48 inches of minimum cover and would be a four-inch diameter steel-wrapped pipe designed for operation at an estimated pressure of 680 pounds per square inch.

Construction of the Ameresco RNGPFP would take 12 to 14 months. During this time, the level pad area adjacent to the existing RNG processing facility would be constructed using approximately 89,000 cubic yards of imported earth fill, covering a total area of 189,000 square feet (4.3 acres) of land, followed by installation of new RNG processing equipment. Concurrently, the RNG transmission pipeline would be installed. The installation of the pipeline would involve creating a trench, placing the pipeline within the trench, and backfilling after placement. The pipeline would be placed at a depth of four feet in most locations. For the pipeline segment in PG&E property, the pipeline would be constructed at a minimum depth of four feet, to a depth of up to 44 feet to meet minimum clearance specifications for the Contra Costa Canal.

A summary of the proposed project is presented in Table 1. A detailed description of the proposed project follows the table.

**Table 1. Project Overview**

Responsible Parties	Ameresco Keller Canyon RNG, LLC (Applicant); Keller Canyon Landfill Company, Republic Services, (Property Owner)
Proposed Project	Processing of existing landfill gas with export to a pipeline and inter-connection with existing PG&E valve lot. Proposed project would be a new facility that would not be connected to the operation of the existing power plant
Project Goals and Objectives	Reliably and safely process landfill gas and export RNG without creation of adverse public safety or environmental impacts, or adversely affecting existing landfill gas operations, staffing, and worker safety
Purpose and Need	Increased utilization of existing landfill gas for productive energy in accordance with Keller Canyon Land Use Permit LP89-2020. RNG created will be introduced into the local natural gas system grid
Permitting Actions Required	Amendment of County Land Use Permit LP01-2115 and Section 36. Landfill Gas Power Plant of Keller Canyon Land Use Permit LP89-2020; BAAQMD Authority to Construct and Permit to Operate; potential HCP/NCCP with East Contra Costa County Habitat Conservancy; Building Permits from County and City of Pittsburg, other permits as required by law
Project Area	Unincorporated County area in City of Pittsburg Sphere of Influence; pipeline construction to occur within KCL property and contiguous PG&E property located in the City of Pittsburg city limit
Facility Location	Keller Canyon Landfill, 901 Bailey Road, Pittsburg, CA 94565
Recovery Process	Collection and processing of existing landfill gas to meet State utility standards for RNG
Proposed New Process Equipment and Pipeline Infrastructure	Skid-mounted compressors, chillers, direct fired recuperative thermal oxidizer, filter membrane(s), pressure and thermal swing adsorption vessels, enclosed flare, motor control center; and high BTU pipeline [4" steel-wrapped pipe, buried to a minimum depth of 48" (4 feet)]
Staffing Requirements	Two onsite operations staff upon Project operation
Prior Related CEQA Review	Initial Study/Mitigated Negative Declaration for KCL LFGTE power plant approved by the County Board of Supervisors in 2001; Environmental Impact Report for KCL in 1990

## Project Goal and Objectives

The proposed RNGPFP would provide a significant increase in the utilization of LFG, for energy, an existing renewable resource. Ameresco's project goal is to construct and operate a state-of-the-art RNG processing facility and underground pipeline. The system would be equipped with extensive control measures designed to minimize potential impacts at the project site, and to the natural environment and the surrounding community. Specific objectives of the Project include:

- Implement a state-of-the-art RNG processing facility to meet or exceed applicable industry, federal, and California standards to produce reliable commercial quality RNG, using the applicant's extensive experience with safely operating pipelines that carry RNG in many locations across the country.
- Design the RNG processing facility and pipeline to the highest available design standards for the protection of public health and safety and the natural environment. This will require designing the pipeline to the most stringent requirements of Class 4, burying the pipeline deeper than required, and performance of extensive testing and inspection of 100 percent of welds during construction.
- Locate the system exclusively on existing landfill property and existing electric and gas utility property to avoid intrusion into surrounding residential and commercial uses.
- Reduce air emissions from the Keller Canyon Landfill flares while creating a beneficial fuel source of clean/green RNG.
- Decrease California's reliance on fossil fuels by off-setting natural gas use with locally generated RNG.

## Properties of RNG

RNG or biomethane is defined as methane produced from biomass converted to a pipeline-quality gas that is fully interchangeable with conventional natural gas. Natural gas is a naturally occurring hydrocarbon gas found in porous formations beneath the earth's surface. RNG is essentially biogas (the gaseous product of the decomposition of organic matter) that has been processed to above the purity standards of natural gas. The process requires the biogas to be cleaned and conditioned to remove the non-methane elements. Like conventional natural gas, the resulting RNG can be used as a replacement for natural gas to generate power, provide heat for homes or in a transportation fuel in the form of compressed natural gas (CNG) or liquefied natural gas (LNG). RNG qualifies as an advanced biofuel for vehicles under the United States Environmental Protection Agency's (EPA) Renewable Fuel Standard.

Combustion of natural gas is the chemical reaction of oxygen with a combustible material which produces heat. There are three requirements for combustion, fuel (natural gas), oxygen and a source of ignition. If one of these three components are missing, combustion cannot occur. Natural gas will



not burn unless the mixture is within a flammable range of roughly 5 to 15 percent gas per volume of air. Above and below these amounts it will not burn. A combustible mixture of natural gas with air also has a very high ignition temperature of about 1150° F, which is almost twice the ignition temperature for gasoline.

Natural gas is lighter than air, so it can dissipate into the air rapidly, making accidental combustion difficult. It is also colorless, non-toxic, and had no taste in its natural state. When taken from the ground, natural gas is odorless, but as it is processed for transportation in a pipeline a non-toxic chemical odorant called mercaptan is added to make leaks easy to smell. The mercaptan has a “rotten-egg” smell that is a warning of a gas leak.

### Beneficial Use

Operation of the existing LFGTE plant greatly reduces GHG emissions at KCL while generating energy. Preliminary estimates by the applicant indicate a substantial reduction in GHG emissions compared to the existing baseline condition due to the LFGTE plant.

In addition, it is anticipated that the RNG produced by the proposed RNG processing facility will be utilized by vehicles fueled by natural gas. Based on data prepared by the U.S. EPA and U.S. Department of Energy, the proposed project has the additional potential to substantially reduce overall GHG emissions of heavy-duty vehicles such as trucks and buses. Operating trucks on RNG rather than diesel fuel typically resulted in a 93 percent reduction in carbon monoxide emissions; a 45 percent reduction in oxides of nitrogen emissions; and more than a 90 percent reduction in total particulate matter. From the U.S. EPA Methane Outreach website, the RNG by the proposed Project when used to fuel heavy duty trucks would offset approximately 64,483 tons of CO<sub>2</sub> per year from fossil fuels or equivalent to the reduction of 6.5 million gallons of gasoline consumption in automobiles.

### Overview of System Components

#### *Existing LFGTE Plant*

The existing LFGTE plant consists of an enclosed building and other equipment located within a fenced compound located adjacent to KCL’s blower and flare station. LFG is first filtered and dried, then it is used to fire two internal combustion engine driven generators to produce up to 3.8 megawatts of electricity. The existing landfill gas power plant operates a small enclosed flare as part of its fuel pre-processing system. This area also includes other environmental management facilities for KCL, including storage tanks for leachate, condensate, and water. The Ameresco existing power plant occupies an area of approximately 13,000 square feet.

#### *Landfill Gas Collection System*

LFG is generated through degradation by microorganisms of municipal solid waste and other biodegradable waste. Aerobic conditions in the presence of oxygen leads to predominantly carbon dioxide emissions. In anaerobic conditions (i.e. in the absence of oxygen) typical of landfills, methane

and carbon dioxide are produced. The landfill gas collection and control system (GCCS) is operated by KCL to control subsurface gas migration around the landfill perimeter, and to control direct emissions of LFG to the atmosphere. The system operates by applying vacuum to a system of horizontal and vertical extraction wells. The vacuum draws LFG out of the waste mass and conveys it to a blower/flare station for destruction of the methane and non-methane organic compounds. Combustion currently occurs in either the internal combustion engines at the LFGTE plant or the flare station.

#### *Proposed RNG System*

The proposed RNGPPF would be located west of the existing LFGTE plant and blower/flare station. The project includes RNG processing equipment to separate methane from the balance of the LFG. The proposed RNG processing facility would not be connected to the operation of the existing LFGTE plant. In addition to the new processing facility, a new pipeline is proposed to connect the RNG processing equipment with the existing PG&E STANPAC 3 gas pipeline. The proposed RNG pipeline will be buried underground with a minimum 48 inches of cover and will be a four-inch steel-wrapped pipe designed for operation at an estimated pressure of 680 pounds per square inch gauge (psig). The proposed location of the RNG processing facility and transmission pipeline are shown on Figure 4.

#### *RNG Processing Facility*

The RNG processing facility will operate 24 hours per day/7 days per week and its operation would be overseen by two employees for 40 hours per week. The processing equipment includes compressors, filters, direct fuel recuperative thermal oxidizer, enclosed flare, thermal and pressure swing adsorption units, and media beds to treat LFG to meet PG&E's Rule 21 standards. The first portion of the treatment process will remove any entrained water vapor and non-methane organic compounds from the LFG. The gas will then be compressed to around 250 psig and processed to remove carbon dioxide (CO<sub>2</sub>), nitrogen (N<sub>2</sub>), oxygen (O<sub>2</sub>) and other trace constituents. The process will increase the calorific value (heat content) of the LFG from approximately 480 BTU/standard cubic foot (BTU/scf) to approximately 980 BTU/scf. A polishing unit at the end of the treatment process may be used to ensure that none of the trace constituents (including the carcinogenic, non-carcinogenic and pipeline integrity constituents) exceed Rule 21 or other pipeline requirements. The RNG will then be compressed up to pipeline pressure and piped to a nearby PG&E natural gas transmission main.

A site plan of the RNG processing facility area is shown on Figure 5. A detail of the proposed general arrangement of the equipment and list of major components are shown on Figure 6. The footprint of the RNG processing equipment would cover an area of approximately 48,000 square feet (1.1 acres) on a new level pad of approximately 84,000 square feet (1.9 acres). Construction of the final grade for RNG processing equipment would require approximately 89,000 cubic yards of imported earth fill covering a total of approximately 189,000 square feet (4.3 acres) of land. Reinforced soil slopes at gradients of up to 1.5(h) to 1(v) or flatter, and up to 58 feet in height along the western and northern boundaries of the pad. A mechanically stabilized earth wall up to about 20 feet would be constructed along the southern boundary of the pad. Parking and access for maintenance vehicles would be provided on the eastern boundary at-grade with the existing asphalt turnaround. The RNG processing

equipment would be housed in a secure fenced compound. The RNG processing equipment reflect industry standards that would be applied to the proposed Project.

### *Control Measures Incorporated into Project Design, Construction, and Operation*

Control measures have been incorporated by the applicant into the design, construction, and operation of the RNGPFP. These control measures are proposed prior to any determination of impact significance as presented in the following Environmental Checklist. Control measures are designed to minimize the potential for significant impacts associated with the proposed RNGPFP. The control measures include, but are not limited to, compliance with design, operations, and maintenance requirements specified in the LP89-2020 Conditions of Approval and discretionary improvements or best practices consistent with County regulations and industry standards. These control measures are discussed in applicable sections of the Environmental Checklist.

### Description of RNG Processing

The RNG processing facility is designed to process LFG, produced at KCL into RNG. The processing facility will be designed to process up to 4,700 standard cubic feet per minute (scfm) of LFG to produce a nominal maximum volume output of approximately 2,041 scfm of RNG. The process operation for the proposed facility is described generally below. The process flow diagram shown on Figure 7 illustrates the process from initial in-feed of LFG, through various processing equipment, and ultimately to delivery into an underground pipeline. Photos of some of the major processing equipment at an existing Ameresco-owned RNG processing facility comprise Figure 8.

#### *Step 1. LFG Conditioning*

RNG feed blowers take suction from the existing LFG blowers at approximately one psig and raise the pressure to approximately 10 psig. From the feed blowers, the LFG will be dehydrated and conditioned to approximately 60 percent relative humidity and filtered. The LFG at this point has begun the treatment process and is known as the Pre-Processed RNG (PPRNG). The PPRNG will then enter a fixed bed hydrogen sulfide (H<sub>2</sub>S) scrubber unit utilizing activated carbon media or equivalent. From the H<sub>2</sub>S scrubber the PPRNG will be further dehydrated to approximately 50-degree dew point and then sent to the feed compressors. Some of the PPRNG from the H<sub>2</sub>S scrubber is used for pilot gas fuel for the enclosed flare and recuperative thermal oxidizer (TOX).

#### *Step 2. Feed Compression*

The feed compressors will increase the gas pressure to approximately 250 psig. The compressed gas will then be cooled to approximately 80° F prior to it being sent to the thermal swing adsorption (TSA) system.

### *Step 3. Removal of VOC, NMOC, CO<sub>2</sub>, N<sub>2</sub>, and O<sub>2</sub>*

A TSA system is used for removal of volatile organic compounds (VOC), non-methane organic compounds (NMOC) and siloxane compounds. From the TSA the PPRNG is then sent to a three-stage membrane system to remove carbon dioxide (CO<sub>2</sub>) from the PPRNG. From the CO<sub>2</sub> membrane system, the PPRNG is sent to the pressure swing adsorption (PSA) unit to remove nitrogen (N<sub>2</sub>) and some amounts of oxygen (O<sub>2</sub>) remaining in the PPRNG. The PPRNG will be further conditioned to remove the remaining O<sub>2</sub> by using a catalytic oxidation process in the deoxygenate (Deoxo) system. PPRNG leaving the Deoxo system will be dehydrated utilizing a TSA system. The TSA will have closed loop regeneration and therefore will not be required to vent any off-gases.

### *Step 4. Product Compression*

After the impurities are removed from the PPRNG, the resulting product is RNG and is sent to product compressors where it is pressurized to approximately 680 psig for delivery to a PG&E gas transmission line. At the PG&E metering station, the RNG will be metered and analyzed prior to entry into the utility gas line. The RNG leaving the product compressor will be odorized in accordance with regulations before being sent to the pipeline.

### *Step 5. Waste Gas Destruction in TOX*

Waste gas (also known as tail gas) from the TSA, CO<sub>2</sub> membrane, N<sub>2</sub>, and PSA systems will be sent to the TOX for destruction. Waste gases from the final CO<sub>2</sub> membrane stage (also called permeate gas) containing primarily CO<sub>2</sub> and small amounts of CH<sub>4</sub>, O<sub>2</sub> and N<sub>2</sub> are sent to the TOX for destruction. A portion of the permeate gas is used as the sweep gas for the regeneration of the TSA prior to being sent to the TOX. The siloxanes and hydrocarbon compounds are removed from the PPRNG as it flows thru the TSA. During the TSA regeneration the siloxanes and VOC's are desorbed from the TSA media into the sweep gas and sent to the TOX for destruction. PPRNG going to the N<sub>2</sub> PSA has negligible amounts of organics, sulfides, and other hydrocarbons. Thus, the tail gas stream from the N<sub>2</sub> PSA is primarily N<sub>2</sub> with some CH<sub>4</sub> and a small amount of O<sub>2</sub>. This tail gas stream is sent to the TOX for destruction.

### *Step 6. Destruction in Process Flare*

A process enclosed flare will be used for destruction of waste gases generated during upset and/or transient scenarios for the gas from process equipment and pipelines. The five possible flare scenarios are: start-up of the nitrogen removal unit (NRU), out of specification partially processed RNG, high O<sub>2</sub> membrane dump, compressor depress gas, and product pipeline purge. These five upset and/or transient conditions are short duration events and are not expected to occur simultaneously.

The RNG facility process enclosed flare will operate occasionally under five transient operating scenarios mentioned above. The enclosed flare will have a pilot that burns PPRNG continuously so it will be readily available as needed when an upset and/or transient condition occurs. The pilot is required to operate continuously as the gas sent to the process enclosed flare for destruction has a

wide variation of flow and heat content. The process flare may operate in five supporting scenarios during these upset and/or transient conditions and is estimated to operate for up to approximately 1,752 hours per year (20 percent of time annually).

#### *Step 7. Condensate Removal*

LFG supplied to the RNG process will have water in it and any cooling below the gas/water dew point in the process will result in formation of condensate. Condensate will be collected from various points in the process and sent to a condensate tank. Condensate traps, condensate seal tanks or loop seals will be used to prevent LFG, PPRNG, or RNG from entering the condensate system. The collected condensate from the RNG processing facility will then be pumped to the Landfill's condensate system. Condensate will be collected by truck and disposed at an approved facility.

#### RNG Pipeline Regulations and Design Features

##### *Applicable Codes and Design Standards*

The proposed RNG transmission pipeline will be designed and operated in accordance with applicable federal and State regulations. CPUC General Order No. 112-F "State of California Rules Governing Design, Construction, Testing, Operation, and Maintenance of Gas Gathering, Transmission, and Distribution Piping Systems" (June 2015) rules will be incorporated into the pipeline design. Additionally, the Federal Pipeline Safety Regulations outlined in Title 49 of the Code of Federal Regulations (49 CFR) Part 192 also govern the design, construction, testing, operation, and maintenance of gas piping systems and will be incorporated into the pipeline design. The rules outlined by the CPUC General Order do not supersede CFR Part 192 but are considered a supplement.

The purpose of 49 CFR and the CPUC General Order are to establish the minimum requirements for the design, construction, quality of materials, locations, testing, operations, and maintenance of facilities used in the gathering, transmission, and distribution. These are regarded as the established practices to protect the safety of the public and employees.

The proposed pipeline will also be designed in compliance with the American Society of Mechanical Engineers B31.8 which establishes standards for Gas Transmission and Distribution Piping Systems. The requirements of this Code are adequate for safety under conditions usually encountered in the gas industry. This Code is focused on the design parameters and calculations. Other supplemental industry codes are utilized within these codes such as OSHA, ASTM, or others. In any case the most stringent code shall apply. In summary, the over-arching industry codes and standards for this application are:

- CPUC General Order 118F (June 2015);
- Code of Federal Regulation Title 49 Part 192 (March 2015);
- ASME B31.8 – 2018 Gas Transmission and Distribution Piping Systems; and
- Various industry standards such as OSHA, ASME, and ASTM.

### *RNG Pipeline Design Features*

Design of the RNG pipeline would meet and/or exceed all regulatory requirements and/or industry standards. Design features below represent control measure to meet the regulations required for the proposed project. Items to be considered and included in the design are:

The pipeline will be designed to meet or exceed Class 4 requirements, a standard that is above and beyond the required criteria for the proposed project;

- The pipe itself will be designed to operate under 20 percent Specified Minimum Yield Strength (SMYS). The actual percent SMYS for the other system components will be determined after facility requirements have been specified. If flanges and/or flanged assemblies are required, they may be the pressure limiting factors of the system. The design will ensure that the flanged systems and any other appurtenances meet the design requirements;
- The system will be designed to handle a Maximum Allowable Operating Pressure (MAOP) of 680 psi. Relief systems outside the pipeline design will be included as required to ensure the pipeline does not over pressure;
- The system will be designed to operate under ambient temperature conditions of – 20 ° F to 150 ° F;
- The pipeline is to be buried to a minimum of four feet below grade. This exceeds the three feet depth specified in regulations. The pipeline will have at least five feet between adjacent structures/facilities;
- The pipe to be used in the Project will be 4.5” outside diameter, 0.237” nominal wall thickness, Grade B, with a MAOP of 680 psig. This corresponds to about 18.5 percent of SMYS; and
- The applicant will work with PG&E engineers to meet tie-in requirements into their system(s) as required by agreement and the CPUC. PG&E will organize and implement any clearance requirements for their systems.

### RNG Pipeline Route

The proposed pipeline will connect the proposed RNG processing facility to a proposed PG&E metering station and the existing PG&E STANPAC 3 gas transmission pipeline. The proposed pipeline plan is shown on Figure 9. The proposed pipeline route through the PG&E utility corridor is shown on Figure 10. The pipeline will be buried underground and will be a four-inch steel-wrapped pipe designed for operation at an estimated pressure of 680 pounds per square inch. The estimated total pipeline length is approximately 18,030 lineal feet (LF) in plan or about 3.4 miles. Two main pipeline segments are proposed:

- *Segment 1* is located entirely on KCL property and includes approximately 13,760 LF (2.6 miles) of buried pipeline. Segment 1 comprises approximately 3,340 LF (0.6 mile) in the Primary Project Area, and 10,420 LF (2 miles) within the SBA. Segment 1 would connect the proposed RNG processing facility to the PG&E utility corridor located east of, and contiguous with, the KCL property.
- *Segment 2* is located in PG&E utility corridor and includes approximately 4,270 LF (0.8 mile) of buried pipeline. Segment 2 would begin in the PG&E property after Segment 1 exits the KCL property and proceed in a northerly alignment to connect to the proposed PG&E metering station and the existing STANPAC 3 gas pipeline located in the City of Pittsburg.

Figure 11 illustrates typical pipeline sections for paved and non-paved trenches. Under federal regulations, minimum cover is 36 inches; however, for the proposed Project the pipeline will be buried with 48 inches of minimum cover.

After exiting the RNG processing facility, the proposed pipeline would run generally southeast along an existing litter fence parallel to the existing paved landfill haul road as shown on Figure 12. Most of the route on KCL property would follow or be near existing access and ranch roads to minimize impacts during construction. After exiting the Primary Project Area, the pipeline would continue southeast down a slope into and through the SBA. Annual Grassland is the dominant land cover type in the SBA. Representative photos of the pipeline route in the SBA are shown on Figure 13. Construction in the SBA would occur in hilly terrain and require low to medium grading depending on the slope at each location.

#### *Unnamed Seasonal Stream Crossing*

The proposed pipeline would cross an unnamed tributary to Willow Creek that drains north to Suisun Bay. The location of this crossing is shown on Figure 14. Cattle grazing remains extensive in this area which tends to increase erosion and destabilize hillsides. The proposed pipeline crossing of the unnamed tributary is directly adjacent to an unpaved ranch road. One relatively large, ancient landslide exists along the channel starting around 600 feet downstream of the road crossing and is considered dormant in the present geologic environment.

The applicant conducted a study of the location and determined that future decades could be dominated by channel erosion and scour that could cause the existing head cut of the channel to migrate up and through the ranch road. Should this occur, it would threaten to expose the proposed buried pipeline and introduce fine sediment to downstream waters. The applicant has proposed measures for erosion control, gas line protection, and channel enhancement to reduce the risk of potential damage to the pipeline and minimize the potential for downstream sedimentation. These measures are described below. The final design will be coordinated with, and approved by, County and State resource agencies.

- Exclusion of cattle (by fencing) from the road crossing to the confluence with another channel, approximately 250 feet downstream of the road. Fencing would facilitate vegetation growth of

existing plants, stabilize soils, and reduce erosion potential as evidenced by several downstream willows and oaks observed to be holding existing head cuts in place;

- Trenching of the pipeline into bedrock to reduce incision potential, while still meeting other construction requirements; and
- Construction of a series of bio-engineered improvements (e.g. log drop-structures) to trap sediment and protect the grade downstream of the road. The type, number, and precise location of these bio-engineered improvements would be determined by the project biologist in coordination with County and State resource agencies. The combination of exclusionary fencing, and bio-engineered solutions would be designed to endure over the projected 20-year lifespan of the proposed project.

### *PG&E Utility Corridor*

An existing PG&E 20-inch diameter L-191-1 gas transmission pipeline runs along the eastern edge of the PG&E-owned utility corridor, east of the SBA. The alignment of the proposed RNG transmission pipeline would run parallel to, and west of, the L-191-1 pipeline along the eastern edge of the PG&E property. The pipeline alignment in the PG&E property is potentially limited by environmental concerns, proximity to existing high voltage transmission lines and water lines, and location of the Contra Costa Canal crossing. A photo of a portion of the PG&E utility corridor is shown on Figure 15. The pipeline alignment through the PG&E property will be finalized during detailed design and approved by PG&E and the PUC.

Construction through the PG&E utility corridor will require careful consideration regarding the crossing of existing gas and electric transmission lines. The RNG pipeline will adhere to PG&E clearance requirements. The proposed pipeline would cross under the Contra Costa Canal per Contra Costa Water District (CCWD) specifications. The approved canal crossing location will determine the construction method used. Trenchless options such as a Horizontal Directional Drill (HDD) will be evaluated for use as the selected route is optimized.

The proposed PG&E metering station and associated Ameresco interconnect station are shown on Figure 16. PG&E will add a metering station approximately 50 feet to the south of the existing valve lot with a width of approximately 40 feet and length of 100 feet (4,000 square feet) to accommodate the new gas receiving equipment. An isometric view of the PG&E metering station is shown on Figure 17. Noise and lighting for this expanded area will be similar to the existing station and will be surrounded by an approximately 7-foot tall security fence. PG&E equipment will be powered by electricity so new poles may be necessary to connect the new PG&E equipment to existing electric lines. The new pole height and line configuration will be similar and connect to the existing electrical service pole for the STANPAC 3 valve lot. Attached to the PG&E metering station (or included inside the station depending on PG&E design) will be an Ameresco interconnect station which would have a pipeline riser, valving, and pig station for future pipeline inspections. This equipment would be constructed in a fenced enclosure (if not included in PG&E's metering station) of no larger than 45 feet in width x 60 feet in



length (2700 square feet). The line from the PG&E metering station will connect to the existing STANPAC 3 valve lot.

### Construction

The construction period is expected to require 12 to 14 months depending on seasonal requirements. Construction on the RNG processing facility and the transmission pipeline would proceed concurrently. Following approval of the proposed project by the County, the required permits must be obtained. Current projections are that the RNGPFP would begin construction in mid-2021.

The level pad area of the RNG processing equipment would cover an area of approximately 84,000 square feet (1.9 acres), adjacent to the existing LFGTE plant. Construction of the level pad area would require approximately 89,000 cubic yards of imported earth fill. The 4-inch diameter steel pipeline will be installed utilizing an excavator that will create a trench and the pipeline will be placed and backfilled at a depth of four feet in most locations. Under drainages the pipeline will be buried to a depth of at least six feet. Pipeline construction activities will occur within 15 feet on either side of a 15-foot wide workspace centered on the pipe center line. After the pipeline is installed the trench will be backfilled and the site will be re-graded and restored to its approximate original contours. Wherever possible the pipeline will be designed to follow existing ranch/fire roads on the KCL property to minimize temporary and permanent construction impacts. The pipeline trench will be backfilled and restored immediately upon installation of the pipeline to the maximum extent possible. All construction impacts are expected to be temporary. HDD would be required for the pipeline to pass beneath the canal maintained by the CCWD.

Construction could involve the use of a mobile crane to unload and install heavy equipment. The following construction activities would be performed to create the permanent site for the RNG processing equipment and to ensure the preservation of soil and to minimize erosion during construction:

- Implementation of construction storm water pollution prevention plan (SWPPP) best management practices and/or other temporary controls as required by KCL permits;
- Site clearing and grubbing;
- Earthwork to design surface elevations;
- Installation of electrical grounding grids;
- Placement of concrete pads for RNG processing equipment;
- Delivery and placement of RNG processing equipment;
- Construction of gravel access and maintenance roads; and
- Installation of a central drainage pipe for collection of storm water runoff and other permanent storm water control features.

### *Construction Access and Staging Areas*

The proposed underground RNG pipeline route spans a variety of terrain ranging from level to hilly. The 3.4-mile length of the pipeline requires strategic locations for safe and efficient vehicle and equipment access and the staging (laydown) of equipment and construction materials. Proposed access and equipment staging/laydown areas are shown on Figure 18. Access for construction on KCL property would be via Bailey Road and internal facility roads. The construction access for the RNG processing facility will be provided by the paved asphalt road and turnaround adjacent to the proposed site. The projected traffic associated with construction of the RNG processing facility and pipeline is an average of approximately 20 inbound trips.

Access for one staging location on Keller Canyon Landfill property and for two locations on the PG&E property would require approvals from the landowners or the City of Pittsburg. These locations include:

- John Henry Johnson Parkway to Ripple Rouge Road (near the Diablo Valley Radio Controllers' miniature airstrip) to access a laydown area to be located on Keller Canyon Landfill property;
- Access through an existing access gate located near the intersection of Alta Vista Circle and Alta Vista Court to provide access to the PG&E utility corridor; and
- Access from the parking lot of the former Delta View Golf Course, located at the end of Golf Club Road to provide access to the PG&E valve lot.

### Operation and Maintenance

The RNG processing equipment will operate 24 hours per day, 7 days a week except during maintenance periods. The entire RNG processing facility is designed to operate on an automatic basis with only minor periodic adjustments by onsite operations personnel.

While the RNG processing equipment will be designed to operate automatically, routine maintenance and the capability to respond to any process upsets will be required. The RNG processing facility operators will be onsite 40 hours per week and can respond within a one-hour response time when they are not onsite. The proposed RNG processing equipment is planned to be maintained by two new operators who will respond to any calls. Maintenance activities associated with the proposed Project will involve routine maintenance at specified intervals. Major maintenance will occur at longer intervals. Ameresco personnel or appropriate sub-contractors will conduct maintenance work in a manner to prevent spills or other adverse environmental impacts.

### *Project Traffic*

Access to the LFGTE plant is confined by permits to Bailey Road. KCL is not open to the public. The landfill is currently permitted to be open Monday through Saturday from 7:00 A.M. to 7:00 P.M., but typically, the facility closes by 5:00 P.M. KCL is closed on Sunday. No changes are proposed to KCL access or traffic patterns with the RNGPFP. Once operational, the RNGPFP would generate an average of fewer

than 10 inbound trips per day. These trips would be confined to employee trips and planned maintenance trips.

### Monitoring and Reporting

Operation of an RNG processing facility within an existing landfill GCCS is a relatively new concept. Ameresco anticipates various elements or individual pieces of equipment could require adjustment or modification to maximize safety and efficiency of the system. The Applicant would coordinate with KCL staff, County DCD and Environmental Health staff, the City of Pittsburg, and regulatory agencies to ensure operations meet project goals and performance specifications. Coordination would include verbal and written reports status reports. Examples of parameters to be monitored and reported include, but are not limited to, the following:

- Recuperative thermal oxidizer and enclosed flare emissions will be monitored, reported yearly, and tested by/for the BAAQMD as required in the RNG processing facility's future Permit to Operate; and
- RNG produced at the RNG processing facility will be metered for sales purposes to meet PG&E and CPUC requirements as well as other environmental attributes.

### Contingency

Unforeseen events could temporarily affect the RNG processing and pipeline operations that could preclude the processing and pipeline export of RNG. These potential events could include:

- Local or regional power failure or outage;
- Upset in the GCCS systems upstream of the RNG processing facility including collection well failures, blower/flare station upsets;
- Equipment shutdown or control issues at the LFGTE plant;
- RNG processing facility equipment failure;
- Pipeline rupture; and
- Natural disaster such as an earthquake.

Based on the occurrence of these events, Ameresco would implement the following contingency measures:

1. The RNG processing facility control system is designed to operate and maintain the RNG process under normal conditions. If conditions occur outside of the normal operating range, the RNG processing facility will shut down and any potentially hazardous process conditions will be combusted in the upset flare.

2. An electronic auto-dialing system will be expanded to include the proposed project. The system can notify the operator of an abnormal condition during non-business hours and will provide visual and audible warnings to assist operator response.
3. In the event of planned maintenance, process upset or other event, the RNG processing facility will be either manually or automatically shut down and LFG will be redirected to the flares as necessary.
4. The pipeline pressure and flow will be monitored and any change outside of normal operating parameters will shut off the pipeline and shut down the RNG processing facility.
5. The RNG processing facility will have a seismic sensor. In the event of a large earthquake the RNG processing equipment will be shut down and pipeline valves will be closed.

Potential impacts from possible events are evaluated the Environmental Checklist by subject category. Potential mitigation measures and applicant control measures are also described in the Environmental Checklist.

#### Project Life Span

The operational life of the proposed RNG processing facility and pipeline is dependent upon the decaying refuse generating methane within the landfill. Ameresco's original agreement with KCL allows for a 20-year project life span with the opportunity to extend the agreement as long as sufficient LFG is available to make operating the LFGTE plant commercially viable. Current KCL LFG generation models predict that methane generation will continue far beyond the 20-year project period. The proposed RNGPFP will increase the amount of LFG utilized for substantial environmental benefit. Once the agreement with KCL expires, the Ameresco existing power plant and proposed RNG processing facility will be de-constructed, the RNG pipeline abandoned according to prevailing regulations, and the remaining LFG will be directed to the landfill flares.

- 9. Surrounding Land Uses and Setting:** The Ameresco RNGPFP is located almost entirely on KCL property. The KCL property is approximately 2,345 acres, which consists of a Primary Project Area of approximately 1,596 acres and a KCL-owned portion of the SBA of approximately 750 acres located directly east of, and contiguous with, the Primary Project Area. Technically, the SBA is conserved open space that includes two non-KCL parcels including a 155.8-acre open space parcel (APN 094-360-017) and a 4.59-acre water tank parcel (APN094-360-006). Together with the KCL parcels, he SBA totals approximately 910 acres; however for the purposes of this environmental review, only the KCL parcels are included in the discussion of the SBA, as the non-KCL parcels are not be part of the proposed project.

Along with open space, active landfill operations occur within the Primary Project Area, which includes landfill infrastructure, administration, operations, and waste disposal. Within the Primary Project Area, landfill activities encompass 375 acres, and the permitted landfill disposal footprint covers 244 acres. The SBA is conserved open space located directly east of, and contiguous to, the Primary Project Area. The SBA serves to “buffer” or isolate the landfill from surrounding land uses and is reserved for uses

consistent with open space, agriculture, and non-waste disposal landfill infrastructure as determined by Contra Costa County. The Ameresco RNGPFP would be located on the following KCL-owned parcels.

Location	APN
Primary Project Area	094-360-008
	094-360-019
Special Buffer Area	094-360-020
	094-360-022

A portion of the RNG transmission pipeline would be in PG&E property east of, and contiguous to, the SBA. The PG&E property consists of five parcels that total approximately 212 acres, including four parcels in the City of Pittsburg that total approximately 52 acres and one parcel of approximately 160 acres in unincorporated Contra Costa County. The PG&E property is open space land that serves as a north-south utility corridor and contains large electrical transmission lattice towers, overhead high-voltage electrical transmission lines, and an underground gas transmission pipeline. The northernmost PG&E parcel includes the STANPAC 3 valve lot. A portion of the Ameresco RNGPFP pipeline would be located on the following PG&E-owned parcels.

Location	APN
County	094-080-012
Pittsburg	094-090-002
	094-160-004
	095-160-005
	095-160-006

Land immediately surrounding the Ameresco RNGPFP includes the above described KCL Primary Project Area and SBA and the adjoining PG&E utility corridor. The Concord Hills open space is adjacent to KCL to the south and southeast. The nearest developed non-landfill land uses are single-family residences located off the KCL property approximately 0.33 mile north-northwest of the proposed project site; single-family residences located about 0.40 mile west of the proposed project site west of Bailey Road; and single-family residences and the City of Pittsburg Water Treatment Plant located east of the project site and adjacent to the PG&E utility corridor.

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

- Bay Area Air Quality Management District (BAAQMD)
- California Department of Fish and Wildlife
- California Public Utilities Commission (PUC)
- City of Pittsburg
- Contra Costa Water District (CCWD)
- East Contra Costa County Habitat Conservancy
- Pacific Gas and Electric Company (PG&E)
- Regional Water Quality Control Board San Francisco Bay Region
- U.S. Army Corps of Engineers

U.S. Bureau of Reclamation  
U.S. Fish and Wildlife Service

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

In accordance with Section 21080.3.1 of the California Public Resources Code, subsequent to the County determination that the project application was complete, a Notice of Opportunity to Request Consultation was both mailed and sent via email on October 7, 2020 to the Wilton Rancheria, the one California Native American tribe that has requested notification of proposed projects. Pursuant to Section 21080.3.1(d), there is a 30-day time period for the Wilton Rancheria to either request or decline consultation in writing for this project. To date, no response has been received from the Wilton Rancheria.

Previously, the Wilton Rancheria had requested consultation in response to a consultation notice for a different project that led to a meeting between staff and a representative of the Wilton Rancheria. At that meeting, a tentative agreement was reached between staff and the Wilton Rancheria that the Native American tribe will be notified of any discovery of cultural resources or human remains on the site. Subsequently, the Native American Heritage Commission (NAHC) requested that pursuant to State law, the NAHC shall be notified of any discovery of human remains rather than the Native American tribe. Mitigation Measures *Cultural Resources 1* and *Cultural Resources 2* in Section 5 (Cultural Resources) of this Environmental Checklist provide for notice to the Wilton Rancheria of any discovery of cultural resources and notice to the NAHC of any discovery of human remains on the site. Any future construction activity on the project site would be subject to Mitigation Measures *Cultural Resources 1* and *Cultural Resources 2*.



FIG1 - LOCATION (07-23-18).DWG

FIGURE 1

DISCUSSION PURPOSES ONLY  
BASE MAP FROM GOOGLE

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**AMERESCO**  
  
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AMERESCO KELLER CANYON  
 PROPOSED RNG FACILITY- PROJECT LOCATION

DATE:	23 JUL 2018
DRAWN BY:	EBT
REVIEW BY:	JAS
REV:	2018-1

**Figure 2**  
**Existing Ameresco LFG Power Plant Looking Northeast**



Source: Ameresco, April 2020.

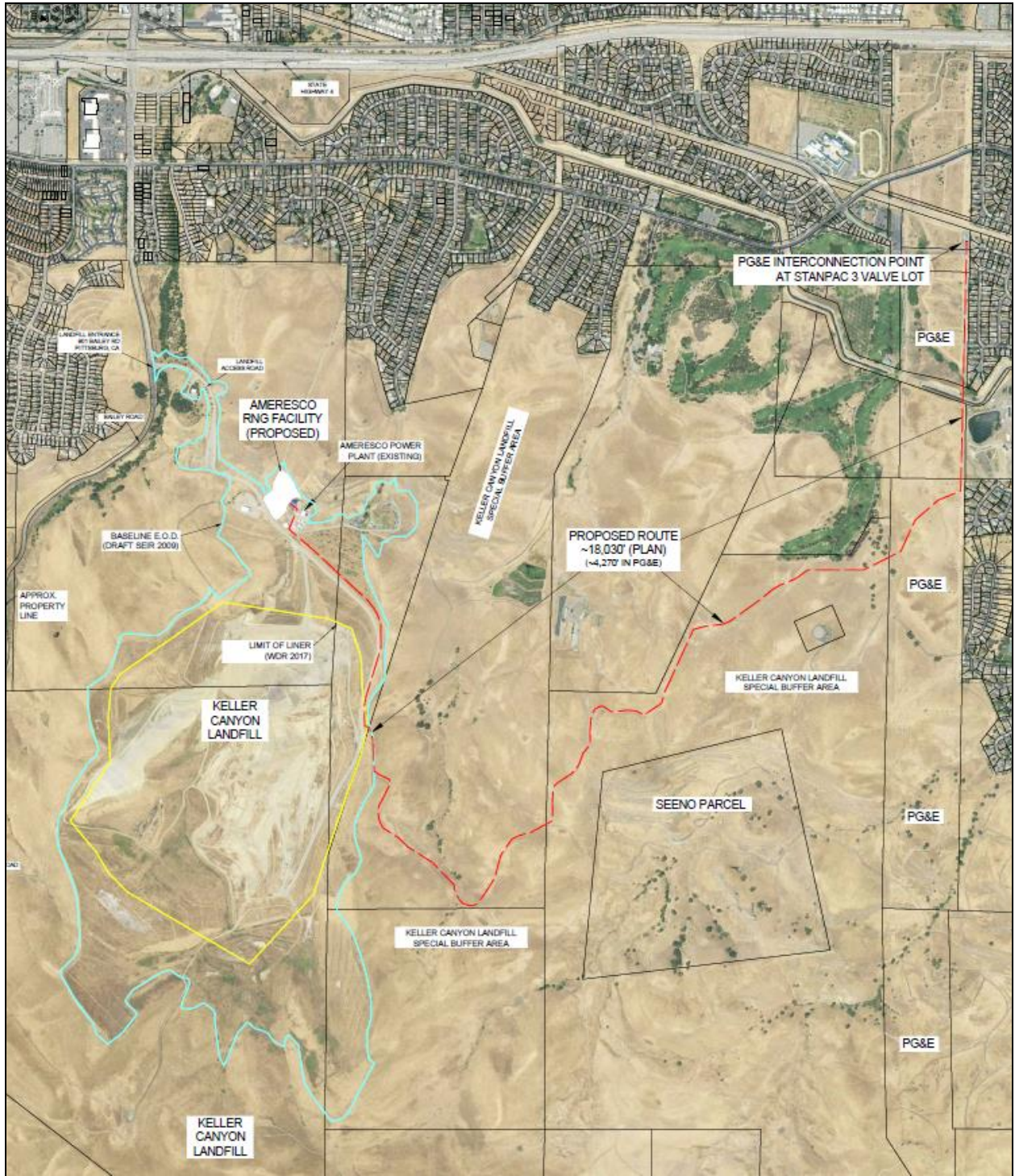


**Figure 3**  
**Site of Proposed Gas Processing Facility - Looking Northwest**



Source: Ameresco, April 2020.



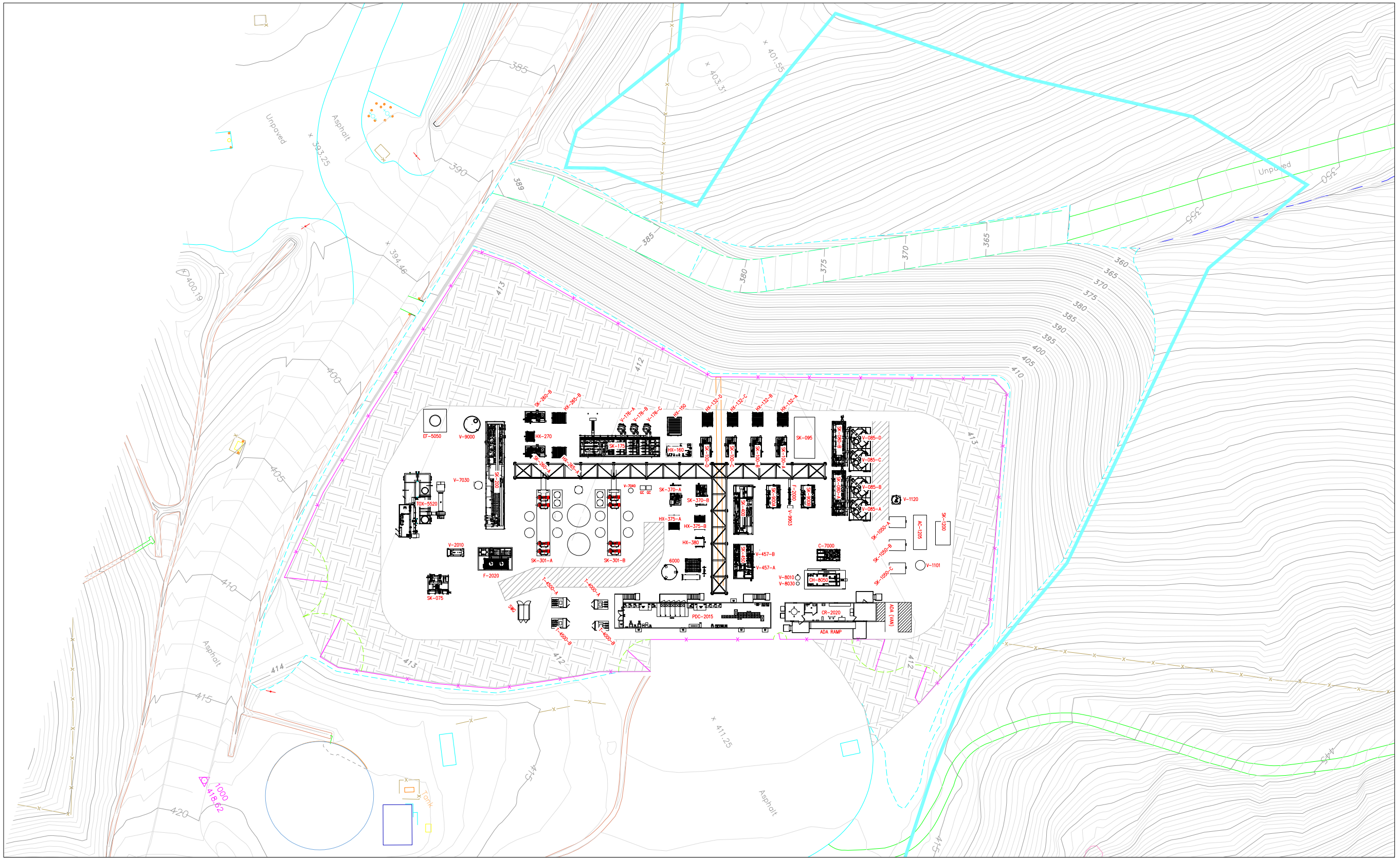


**Figure 4 Project Area**  
**Ameresco Gas Processing and Pipeline Project**

Source: Ameresco Keller Canyon (Bryan A. Stirrat & Associates), 2020.

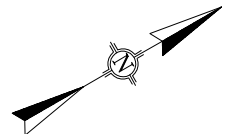


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**FIGURE 5**  
**RNG PROCESSING FACILITY SITE PLAN**

0 30 60  
 APPROX.  
 SCALE IN FEET



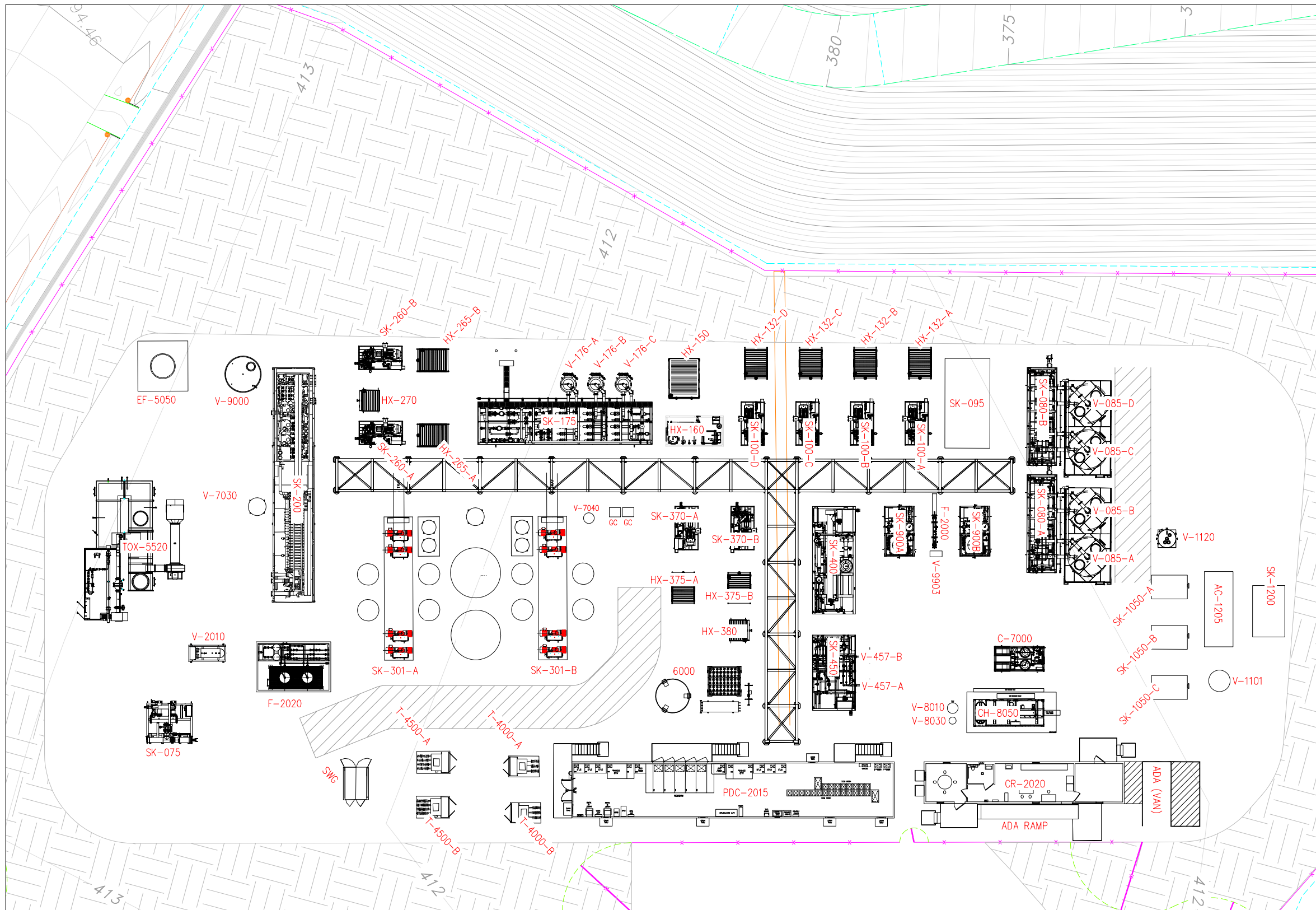
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AMERESCO KELLER CANYON  
 RNG PROCESSING FACILITY  
 SITE PLAN

DATE:	26 APRIL 2020
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-8 / ATSI 040120

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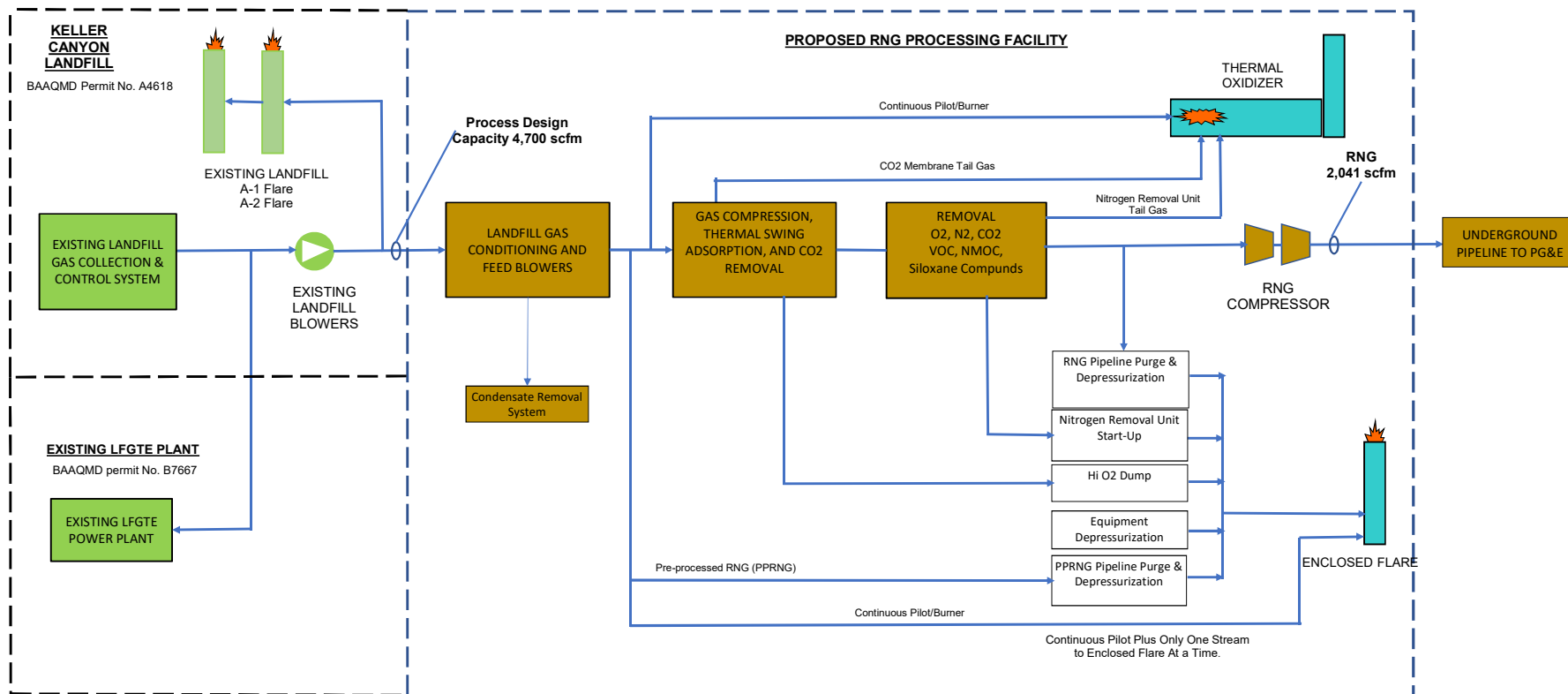


**FIGURE 6**  
**RNG PROCESSING FACILITY GENERAL ARRANGEMENT**



EQUIP TAG	EQUIPMENT NAME
6000	LIQUID NITROGEN AREA
AC-1205	AMBIENT COOLER
C-7000	INSTRUMENT AIR COMPRESSOR
CH-8050	HI BTU CHILLER PACKAGE
CR-2020	OFFICE & CONTROL ROOM
EF-5550	ENCLOSED FLARE
F-2000	PRODUCT GAS FILTER
F-2020	R-21 FINAL FILTER
GC	GAS CHROMATOGRAPH
HX-132-A	FEED A AMBIENT OIL COOLER
HX-132-B	FEED B AMBIENT OIL COOLER
HX-132-C	FEED C AMBIENT OIL COOLER
HX-132-D	FEED D AMBIENT OIL COOLER
HX-150	FEED COMPRESSOR GAS AMBIENT COOLER
HX-160	CHILLER WATER HEAT EXCHANGER
HX-265-A	RECIRC A OIL AMBIENT COOLER
HX-265-B	RECIRC B OIL AMBIENT COOLER
HX-270	RECIRC COMPRESSOR AFTER COOLER
HX-375-A	2ND STAGE A OIL AMBIENT COOLER
HX-375-B	2ND STAGE BOIL AMBIENT COOLER
HX-380	2ND STAGE COMPRESSOR AFTERCOOLER
PDC-2015	POWER DISTRIBUTION CENTER
SK-075	PIG LAUNCHER SKID
SK-080-A	VALVE SKID A
SK-080-B	VALVE SKID B
SK-095	FEED INLET DEHY SKID
SK-100-A	FEED COMPRESSOR A SKID
SK-100-B	FEED COMPRESSOR B SKID
SK-100-C	FEED COMPRESSOR C SKID
SK-100-D	FEED COMPRESSOR D SKID
SK-1050-A	FEED BLOWER A
SK-1050-B	FEED BLOWER B
SK-1050-C	FEED BLOWER C
SK-1200	RAW GAS DEHYDRATOR
SK-175	TSA SILOXANE REMOVAL SKID
SK-200	CO2 MEMBRANE SKID
SK-260-A	RECIRCULATION COMPRESSOR A SKID
SK-260-B	RECIRCULATION COMPRESSOR B SKID
SK-301-A	NRU ADSORPTION UNIT A - ON HOLD
SK-301-B	NRU ADSORPTION UNIT B - ON HOLD
SK-370-A	2ND STAGE COMPRESSOR A SKID
SK-370-B	2ND STAGE COMPRESSOR B SKID
SK-400	DEOXO SYSTEM
SK-450	TSA DRYER
SK-900-A	PRODUCT COMPRESSOR A SKID
SK-900-B	PRODUCT COMPRESSOR B SKID
SWG	21 KVA SWITCHGEAR
T-4000-A	AUX TRANSFORMER T3
T-4000-B	AUX TRANSFORMER T4
T-4500-A	MAIN TRANSFORMER T1
T-4500-B	MAIN TRANSFORMER T2
TOX-5520	THERMAL OXIDIZER
V-085-A	DESULFUR MEDIA VESSEL A
V-085-B	DESULFUR MEDIA VESSEL B
V-085-C	DESULFUR MEDIA VESSEL C (FUTURE)
V-085-D	DESULFUR MEDIA VESSEL D (FUTURE)
V-1101	RAW GAS SEPARATOR
V-1120	CONDENSATE SUMP
V-176-A	TSA MEDIA VESSEL A
V-176-B	TSA MEDIA VESSEL B
V-176-C	TSA MEDIA VESSEL C
V-2010	PRODUCT GAS ODORANT STATION
V-457-A	TSA ABSORPTION MEDIA VESSEL A
V-457-B	TSA ABSORPTION MEDIA VESSEL B
V-7030	CENTRAL AIR RECEIVER
V-7040	GC VESSEL
V-8010	CHILLED WATER EXPANSION TANK
V-8030	CHILLED THERMAL STORAGE TANK
V-9000	CONDENSATE STORAGE TANK
V-9903	USED OIL STORAGE

**Figure 7**  
**AMERESCO KELLER CANYON RNG PROCESSING FACILITY**  
**SIMPLIFIED PROCESS FLOW DIAGRAM**



Source: Ameresco Keller Canyon RNG L.L.C., April 2020



**Figure 8**  
**RNG Processing Equipment Photos**



Biogas Compressor



TSA Media Tanks



**Figure 8**  
**RNG Processing Equipment Photos (continued)**



Recuperative Thermal Oxidizer

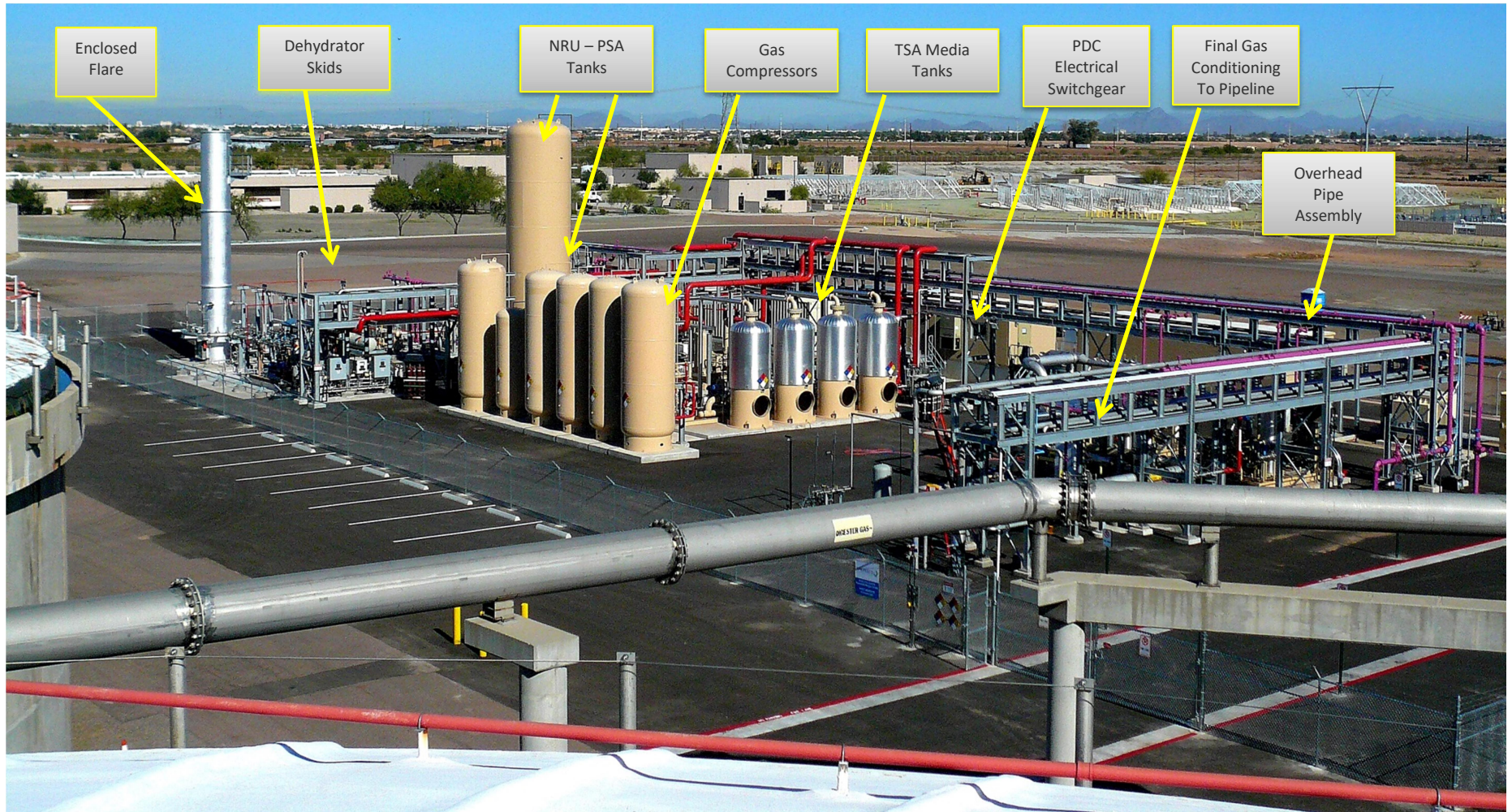


Overhead Pipe Assembly (left); Control Center on Skid (center)



**Figure 8**  
**RNG Processing Equipment Photos (continued)**

**Ameresco Ninety-First Avenue RNG Processing Facility – Phoenix, AZ**



Source: Ameresco Keller Canyon RNG L.L.C. April 2020



**Figure 8**  
**RNG Processing Equipment Photos (continued)**



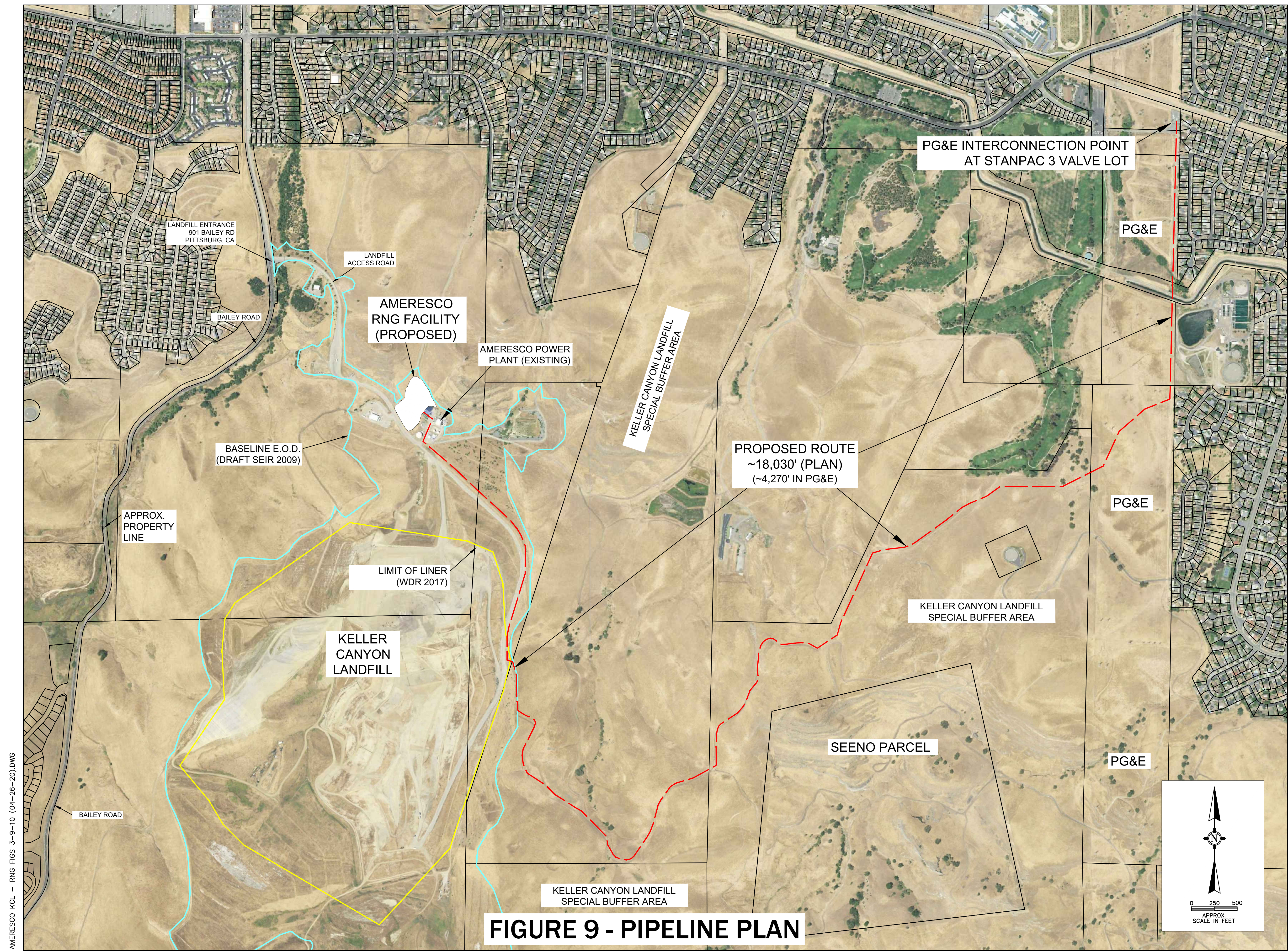
Containerized Membrane (typical)



Carbon Tanks (typical)

Photos Source: Ameresco, April 2020.







**FIGURE 9 - PIPELINE PLAN**

AMERESCO KCL - RNG FIGS 3-9-10 (04-28-20).DWG

2016 AERIAL PHOTO FROM TERRAIN NAVIGATOR PRO (TRIMBLE, INC.)  
PROPERTY BOUNDARIES FROM CONTRA COSTA COUNTY GIS

LENGTHS, AREAS, AND PROPERTY LINE LOCATIONS ARE APPROXIMATE

**BRYAN A. STIRRAT & ASSOCIATES**  
 3746 MT. DIABLO BLVD. #300  
LAFAYETTE, CA 94549  
909-655-3271

**AMERESCO**  
  
Green • Clean • Sustainable

AMERESCO KELLER CANYON  
 PROPOSED RNG EXPORT PIPELINE ROUTE  
 NOT FOR CONSTRUCTION

DATE:	26 APR 20
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-2





**FIGURE 10 - PIPELINE PLAN IN PG&E PROPERTY**

LENGTHS, AREAS, AND PROPERTY LINE LOCATIONS ARE APPROXIMATE

AERIAL PHOTO FROM TERRAIN NAVIGATOR PRO (TRIMBLE, INC.)  
PROPERTY BOUNDARIES FROM CONTRA COSTA COUNTY GIS

**BRYAN A. STIRRAT & ASSOCIATES**  
 3746 MT. DIABLO BLVD. #300  
LAFAYETTE, CA 94549  
909-655-3271

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 PROPOSED RNG EXPORT PIPELINE ROUTE – PG&E PROPERTY AREA  
 NOT FOR CONSTRUCTION

DATE:	30 APR 20
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-1





**Figure 12**  
**Pipeline Alignment Along Litter Fence Looking East**



Source: Ameresco, April 2020.



**Figure 13**  
**Keller Canyon Special Buffer Area Looking East**





**Figure 13 (continued)**  
**Pipeline Alignment To Be Constructed In Ranch Roads Where Possible**



Source: Ameresco, April 2020.



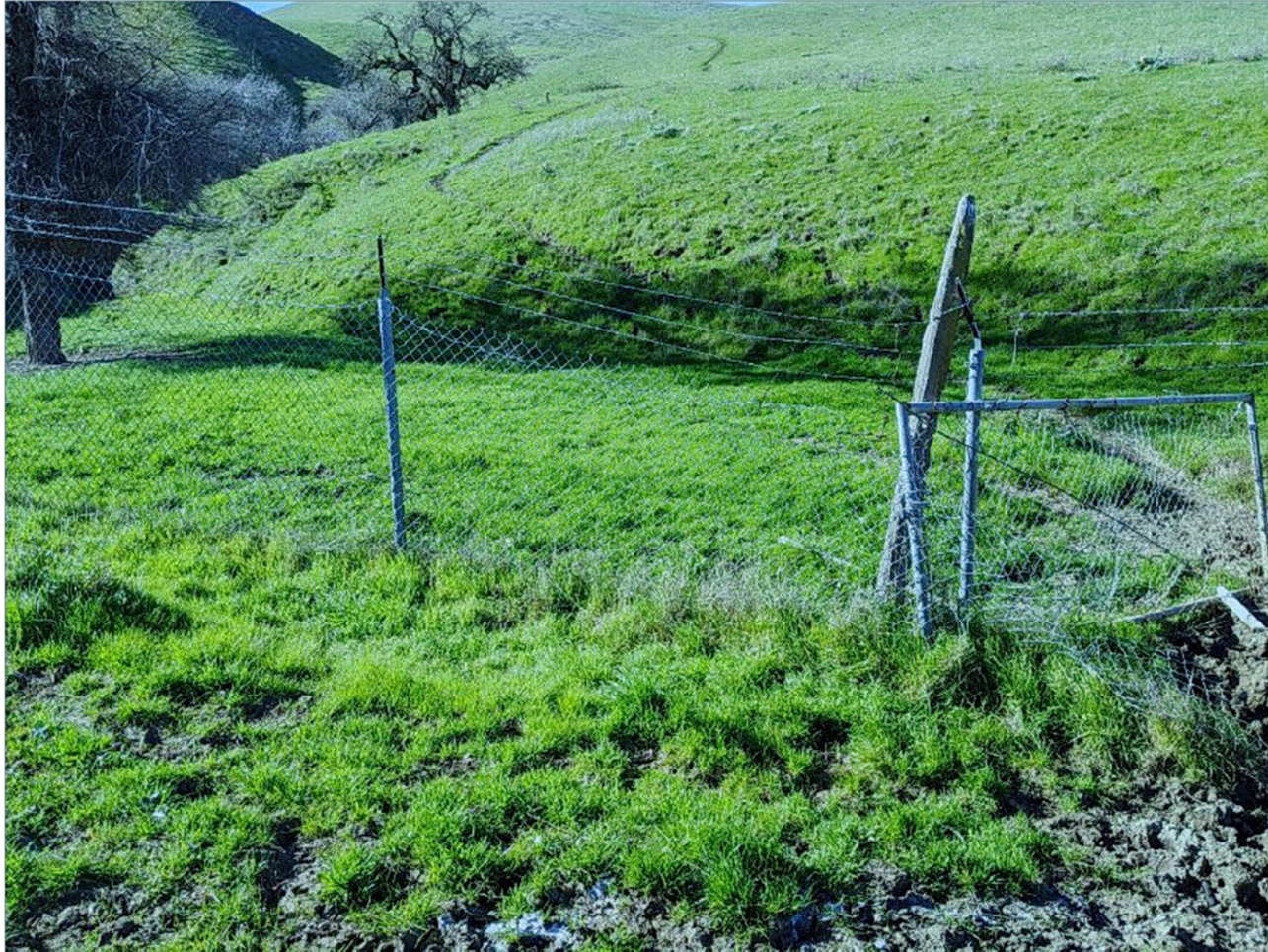
**Figure 14**  
**Unnamed Stream Crossing**



Several headcuts downstream of road crossing, near observed bedrock exposure.



**Figure 14**  
**Unnamed Stream Crossing (continued)**



Evidence of deposition upstream of the road crossing. Note the fence is trapping sediment, as evidenced by the fence, which is approximately 6 feet tall, though only 3-4 feet visible above ground adjacent to the channel.

Source: Ameresco, April 2020.



**Figure 15**  
**PG&E Property Looking South**





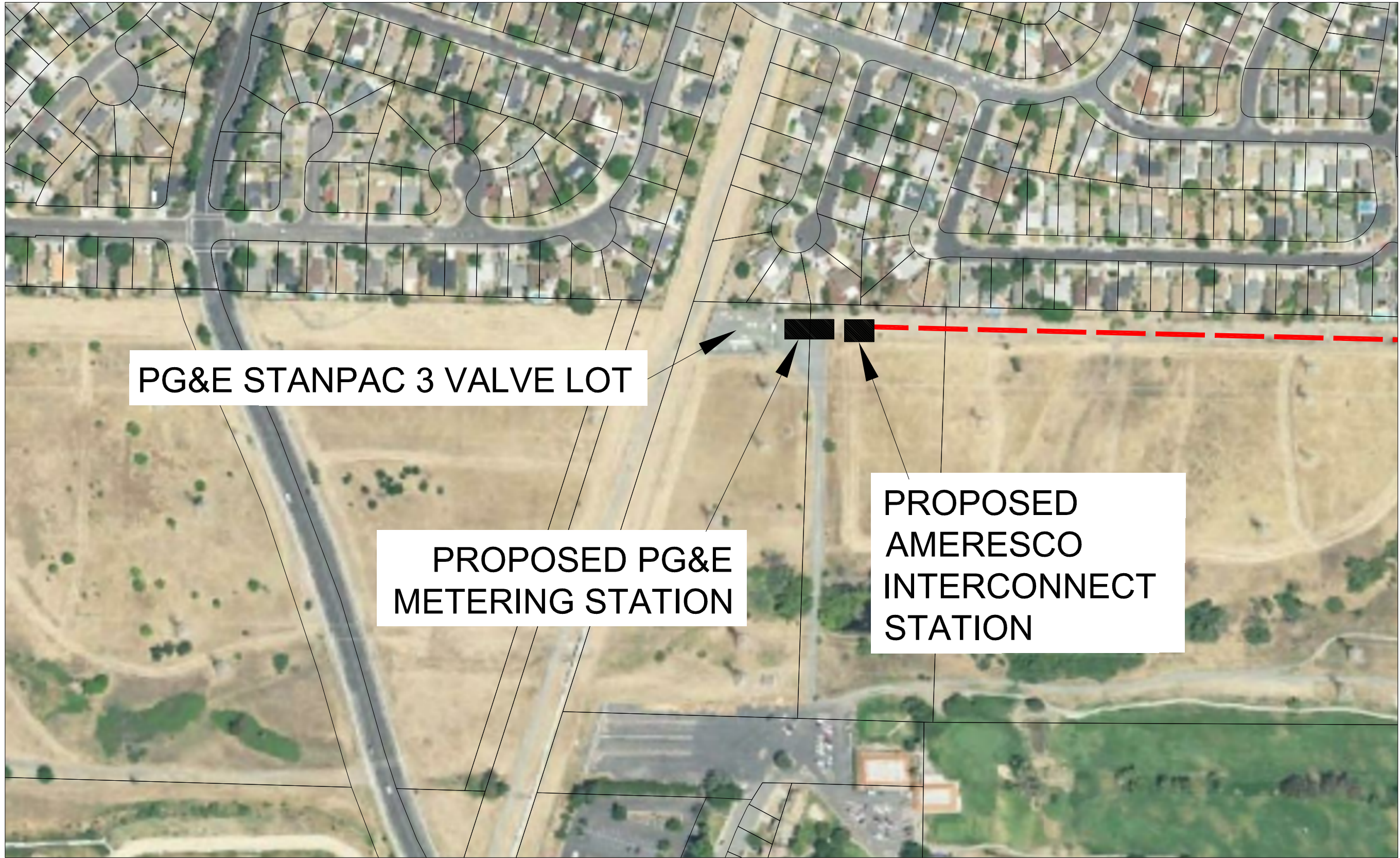
Figure 15 (continued)  
PG&E STANPAC3 Facility Looking North



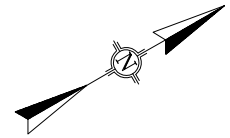
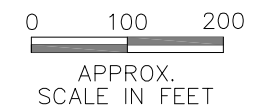
Source: Ameresco, April 2020.



C:\Land Projects\2006\Ameresco Keller Canyon\dwg\2020 Figures\Ameresco KCL - RNG Fig 10 (04-30-20).dwg



**FIGURE 16**  
**PROPOSED PG&E STANPAC METERING STATION AND AMERESCO INTERCONNECT STATION**



BRYAN A. STIRRAT & ASSOCIATES  
 3746 MT. DIABLO BLVD., #300  
 LAFAYETTE, CA 94549  
 909-655-3271

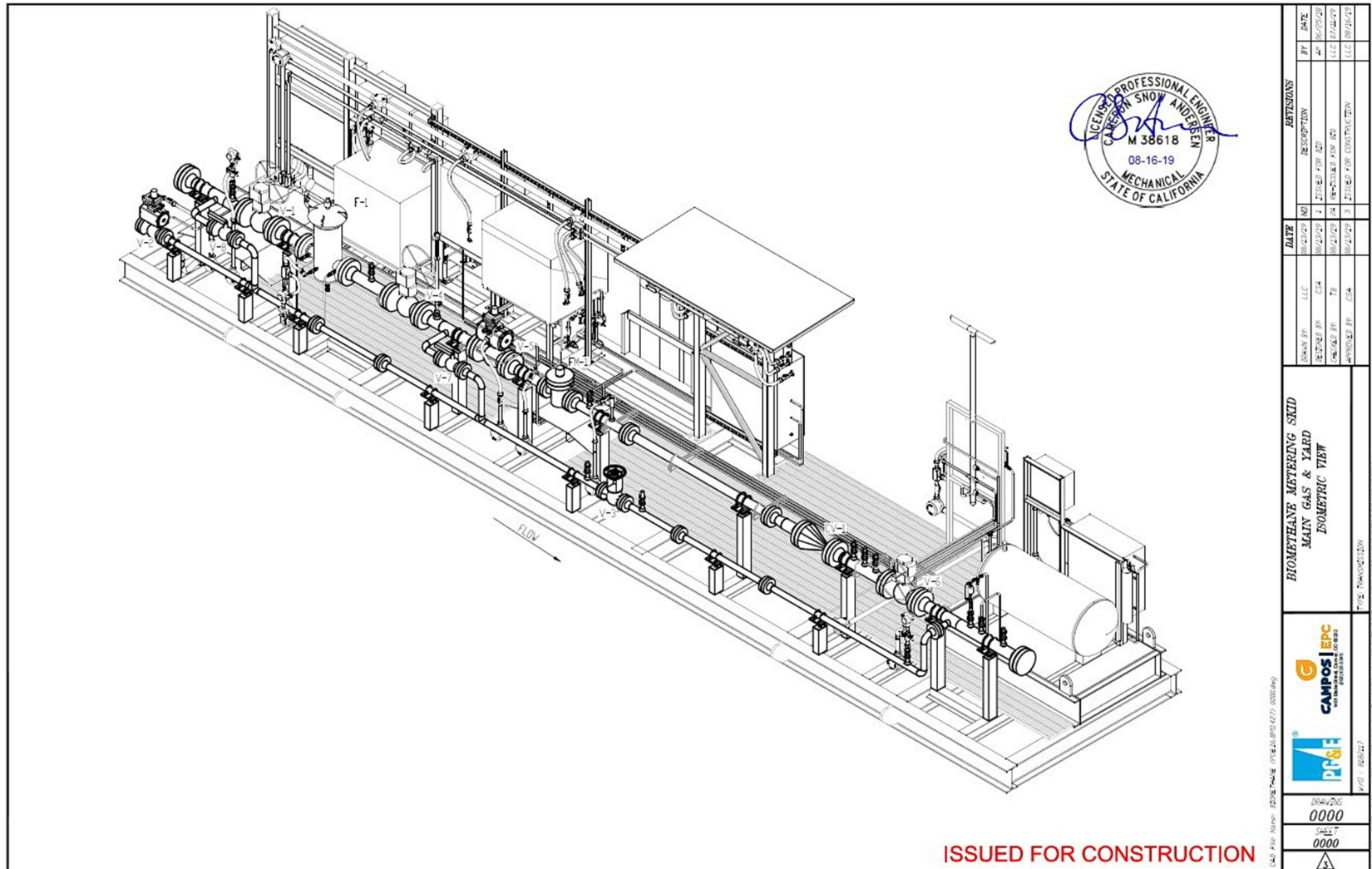
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AMERESCO KELLER CANYON  
 PROPOSED RNG PIPELINE

DATE:	30 APRIL 2020
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-1

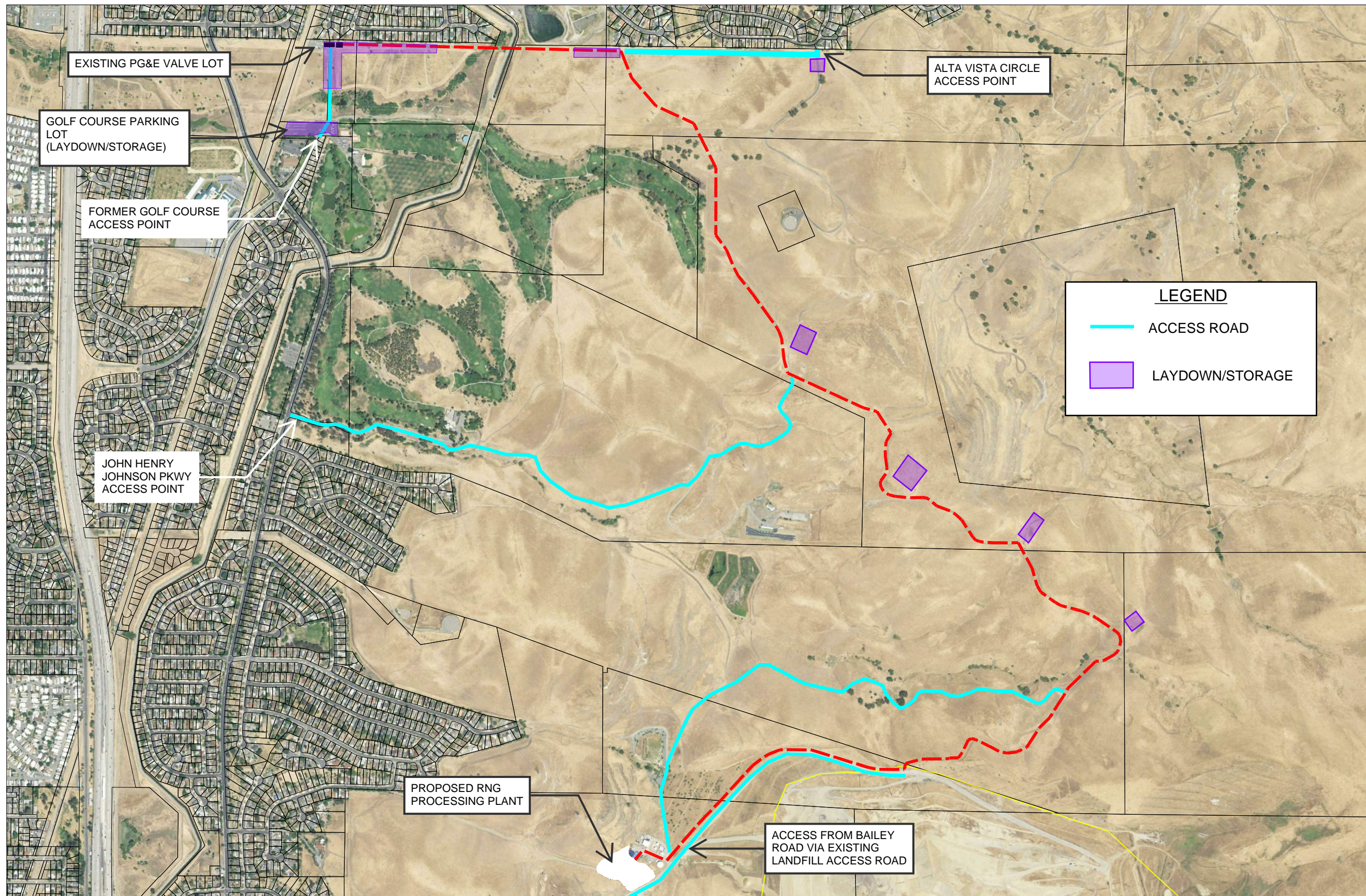


**Figure 17**  
**PG&E Metering Station Isometric View**  
 (Sample – Not for Construction of Proposed Project)





C:\Land Projects\2006\Ameresco Keller Canyon\dwg\2020 Figures\Ameresco KCL - RNG Fig 18 (05-03-20).dwg



**FIGURE 18**  
**ACCESS AND LAYDOWN AREAS DURING PIPELINE CONSTRUCTION**

0 500 1000  
 APPROX.  
 SCALE IN FEET



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 LAFAYETTE, CA 94549  
 909-655-3271

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AMERESCO KELLER CANYON  
 PROPOSED RNG PIPELINE

DATE:	03 MAY 2020
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-1



### Environmental Factors Potentially Affected

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

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

### Environmental Determination

On the basis of this initial evaluation:

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



Stan Muraoka, AICP  
Principal Planner  
Contra Costa County  
Department of Conservation & Development

October 14, 2020

Date

## ENVIRONMENTAL CHECKLIST

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<b>1. AESTHETICS</b> – Except as provided in Public Resources Code Section 21099, <b>would the project:</b>				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

a) *Would the project have a substantial adverse effect on a scenic vista? (Less than significant)*

Figure 9-1 (Scenic Ridges & Waterways) of the General Plan Open Space Element identifies the major scenic resources in the County, including the ridges of the Concord Hills located 1.7 miles southeast of the existing Ameresco landfill gas to energy (LFGTE) power plant in the Keller Canyon Landfill (KCL). The LFGTE plant is located six miles north of Mount Diablo State Park. The proposed project would construct a new RNG processing facility adjacent to and northwest of the existing LFGTE plant. The existing plant is at an elevation of 410 feet, and the new facility would be on a pad that is at the same elevation. The new facility would include gas processing equipment that would vary in height. The tallest structures to be constructed include:

- An enclosed flare approximately 50 feet in height;
- A recuperative thermal oxidizer approximately 35 feet in height;
- A thermal swing adsorption unit approximately 34 feet in height;



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- Nitrogen removal unit product vessel approximately 32 feet in height; Hydrogen sulfide removal vessels of approximately 28 feet in height; and,
- Pipe Rack Assembly up to 25 feet in height.

With the exception of the above described structures, most of the equipment would be low profile rectangular shapes averaging less than 10 feet in height.

The topography of the local area slopes upward southeast of the Ameresco facility toward the Concord Hills, which peak at 1,430 feet in elevation. Overall, due to the project site’s location and height in relation to the Concord Hills and Mount Diablo, the proposed RNG processing facility would not substantially alter available views of the scenic ridges in the project vicinity.

The pipeline portion of the project would be located below ground and would not affect any views of scenic vistas.

- b) *Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway? (No impact)*

There are no state scenic highways in the project vicinity (Caltrans 2019). The General Plan Transportation and Circulation Element Figure 5-4 (Scenic Routes Map) identifies that section of Kirker Pass Road traversing through the Concord Hills and Nortonville Road east of Kirker Pass Road travelling through the Black Diamond Mines Regional Preserve as scenic routes; however, these scenic routes are not visible from the RNG processing facility. Also, as explained in Environmental Checklist Section 1.a above, the pipeline portion of the project would be located below ground. Thus, the proposed project would not affect any views associated with the scenic routes. There would be no impact.

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

As described in Environmental Checklist Section 1.a above, the proposed RNG processing facility would include equipment ranging from 25 to 50 feet in height; however, most of the equipment would average less than 10 feet in height. The proposed RNG processing facility would be comparable in height to the existing LFGTE plant, and therefore, would not be readily distinguishable in off-site views. The natural hillside landscape already shields the existing power plant and flares from the City of Pittsburg and Bay Point communities to the north. Also, the pipeline portion of the project would be below ground and would not be visible in off-site views.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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A site plan and general arrangement of equipment in the proposed RNG processing facility area are shown on Figures 5 and 6 in Section 8 (Description of Project). The RNG processing equipment would cover an area of 48,000 sq. feet on an 84,000 square-foot level pad. The pad would have reinforced soil slopes at gradients of up to 1.5(h) to 1(v) or flatter, and up to 58 feet in height along the western and northern boundaries of the pad. A mechanically stabilized earth (MSE) wall up to 20 feet high would be constructed along the southern boundary of the pad. The RNG processing equipment would be secured by fencing.

While scenic vistas in views from off-site locations to the west and southwest of the Ameresco RNG processing site would be maintained, the following measures will be incorporated into the proposed project to ameliorate views of the project if the project is approved.

1. The applicant shall apply an earth tone color scheme for the RNG processing equipment to ensure compatibility with the project site and surrounding landscape colors. A standard Department of Conservation and Development (DCD) requirement is for all exposed surfaces to be painted with a non-reflective finish (less than 55 percent reflectance). At the time of application for a building permit, the applicant shall submit construction drawings that include earth tone, non-reflective paint on all exposed surfaces for review and approval by the Contra Costa County Department of Conservation and Development, Community Development Division (CDD).
  
2. The applicant shall plant coast redwoods (*Sequoia sempervirens*) on the KCL property to screen the view from residences located to the north, subject to review and approval by the DCD. The applicant shall coordinate with a landscape designer specializing in visual screening. Minimum height of the planted redwoods shall be 10 feet to 12 feet, in numbers and locations to be determined.

Visual Assessment

A visual assessment was completed using four vantage points and an aerial view. Vantage points 1 and 2 were used in the Mitigated Negative Declaration (MND) for the Ameresco Power Plant approved by the Board of Supervisors in January 2002. Vantage Points 3 and 4 were selected by the DCD based on staff awareness of local concerns about visibility of landfill operations. The vantage points and aerial view include:

1. Bailey Road, approximately 120 feet south of Willow Avenue, looking southeast;
2. Bailey Road, at the landfill entrance, looking east;
3. Santa Maria Drive, approximately 0.46 mile to the north, looking south; and

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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4. Aerial view of the project site looking east. This view approximates the elevations and angle of view of the homes located near Vantage Point #4.

The locations and directions of view for each vantage point are shown on Figure 1-1. Photographs from each vantage point are shown on Figure 1-2.

*Vantage Points #1 and #2*

The RNG facility site is not visible from Vantage Points #1 and #2. The proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. There would be no significant impact at Vantage Points #1 and #2.

*Vantage Point #3*

Vantage Point #3 is located on Santa Maria Drive near single-family residences north of KCL. This vantage point was chosen because there is a small valley that provides a visual connection from the project site leading north to a landfill property boundary gate at Santa Maria Drive. The proposed RNG processing facility would be located on a fill pad extending 150 feet to the northwest of the existing slope.

For this vantage point, ground level photographs were taken from Santa Maria Drive looking south to the site of the RNG processing facility. Additionally, the proposed RNG facility site plan was overlaid onto Google Earth to better estimate sight lines. The existing view from Santa Maria Drive from the other side of the property gate to KCL is shown on Figure 1-3. Figure 1-3 shows existing pepper trees located on landfill property. These pepper trees were used as visual reference marks to assess project visibility. These trees would be removed as part of the construction of the embankment fill to create the level pad for the RNG processing facility. The locations of the pepper trees to be removed were compared to the site plan.

Most of the proposed RNG processing facility would be visually screened by a large hill located adjacent to and immediately north of the project site. Figure 1-4 presents a photo montage of the constructed project as viewed from Santa Maria Drive. Based on the projected height of 50 feet for the enclosed flare (the tallest facility structure) and other equipment of the RNG processing facility, several large pieces of equipment would be visible from Vantage Point #3. Equipment that might be visible include nitrogen removal units, thermal swing adsorption units, enclosed flare, and the recuperative thermal oxidizer. Such equipment would be newly introduced vertical elements that would contrast with, and potentially change, the existing open space character of the view.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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If the proposed project is approved, the applicant will plant coast redwood trees in strategic locations to screen the RNG processing facility in views from off-site locations to the north of the Ameresco facility site. Figure 1-5 shows the tree planting measure from Santa Maria Drive. The planted redwood trees would break up sight lines and would blend into the hilltops north of the Ameresco site. Thus, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. There would be a less than significant impact at Vantage Point #3.

*Vantage Point #4*

Figure 1-6 shows a bird's eye view of the existing landfill industrial facilities area without the proposed RNG processing equipment. Figure 1-7 is a simulation of the proposed RNG processing equipment constructed on the project site. The proposed RNG processing facility would be visible from the fenced backyards of fewer than 10 homes located approximately 0.5 mile to the west of the project site. Figures 1-6 and 1-7 approximate the elevations and angle of view at these locations. These backyard locations currently have limited visibility of the Ameresco facilities site due to a large berm that separates the fenced backyards from the slope located to the east. The homes in this area were constructed several years after the KCL commenced operation. The size and scale of equipment at the proposed RNG processing facility are compatible with the existing industrial character of this portion of KCL. Moreover, if the proposed project is approved, the applicant will apply an earth tone color scheme for the RNG processing equipment to ensure compatibility with the project site and surrounding landscape colors, subject to review and approval by the DCD. Thus, the potential to substantially degrade the existing visual character or quality of public views of the project site from Vantage Point #4 and its surroundings would be less than significant.

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

As discussed in Environmental Checklist Section 1.c above, if the proposed project is approved, the applicant will apply an earth tone, non-reflective color scheme for the RNG processing equipment to ensure compatibility with the project site and surrounding landscape colors, subject to review and approval by the DCD. The non-reflective paint will ensure that daytime glare would be maintained at a less than significant level.

Regarding potential nighttime effects, as required by Keller Canyon Landfill Land Use Permit LP89-2020 the applicant will implement the following measure if the proposed project is approved.

- 1 Condition of Approval (COA) 22.14 (Lighting). The applicant shall design and locate the lighting system to reduce glare and reduce impact to area residents. Focused directional

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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security and operational lighting shall be installed. Security and entrance lighting shall be dimmed at 7:30 p.m.

Thus, the new nighttime lighting would result in a less than significant nighttime light impact on views of the site.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Aesthetics - Ameresco IS-MND Section 1*.
- Contra Costa County General Plan, 2005-2020. *Open Space Element*.
- Contra Costa County General Plan, 2005-2020. *Transportation and Circulation Element*.
- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020*.
- California Department of Transportation, 2019. *Scenic Highways Design and Eligible AUG2019\_a11y (1)*.

## Section 1 Figures



Figure 1-1 Vantage Points and Direction of View



Figure 1-2 Vantage Points



Vantage Point 1 - Bailey Road 120 feet south of Willow Ave looking southeast.



Vantage Point 2 - Bailey Road at Keller Canyon Landfill entrance looking east



Figure 1-2 Vantage Points (cont'd)



Vantage Point 3 View from Santa Maria Drive at Keller Canyon Landfill property gate



Vantage Point 4 Bird's-eye aerial view of the existing project site from the west





Figure 1-3 Existing view from Vantage Point 3 Santa Maria Drive at Keller Canyon Landfill property gate





Figure 1-4 Simulation of view from Vantage Point 3 of the RNG Processing Facility located on project site





Figure 1-5 Simulation of view from Vantage Point 3 of planted trees to visually screen project site from gate at Santa Maria Drive.





Figure 1-6 Existing bird's-eye aerial view of project site from Vantage Point #4



Figure 1-7 Simulation of bird's-eye aerial view of RNG processing equipment from Vantage Point #4



## ENVIRONMENTAL CHECKLIST

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>2. AGRICULTURAL AND FOREST RESOURCES – Would the project:</b>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Involve other changes in the existing environment, which due to their location or nature, could result in conversion of farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

- a) *Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No impact)*

As shown on the California Department of Conservation’s *Contra Costa County Important Farmland 2016* map, the Ameresco RINGFPF site includes Urban and Built-Up Land, Grazing Land, and Other Land. Thus, the proposed project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide importance to a non-agricultural use.

- b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? (Less than significant)*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The proposed RNG processing facility and a portion of the proposed underground RNG pipeline would be constructed in the KCL Primary Project Area, which is zoned A-3 Heavy Industrial. KCL operates under Land Use Permit LP89-2020, as allowed in the A-3 District. The Ameresco RNG use is allowed by LP89-2020. The remaining portion of the underground pipeline would be constructed in the SBA, which is zoned A-4 Agricultural Preserve, and approved for livestock grazing and uses compatible with agriculture under a Range Management Plan prepared pursuant to LP89-2020. The underground gas pipeline would be a use that is compatible with agricultural uses.

The project site is not subject to a Williamson Act Contract. The SBA was under Williamson Act Contract No. 8-69; however, the SBA came out of the contract after certification by the Board of Supervisors of the original Keller Canyon Landfill Environmental Impact Report in 1990. Thus, the Ameresco RNGPFP would not affect a Williamson Act contract.

- c) *Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g) or conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)?*  
**(No impact)**

The project site is not considered forest land as defined by California Public Resources Code Section 12220 (g) or timberland as defined by California Public Resources Code Section 4526. Thus, the proposed project would not result in the conversion or loss of forest resources.

- d) *Would the project involve or result in the loss of forest land or conversion of forest land to non-forest use? (No impact)*

As discussed previously, the project site is not considered forest land.

- e) *Would the project involve other changes in the existing environment, which due to their location or nature, could result in conversion of farmland, to non-agricultural use? (Less than significant)*

As discussed in Environmental Checklist Section 2.b above, the proposed project would be constructed in the A-3 Heavy Agricultural and A-4 Agricultural Preserve Districts and would add a proposed RNG processing facility and pipeline. The proposed project is not located on farmland. Consequently, the project would not result in conversion of agricultural land to a non-agricultural use.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Agricultural and Forest Resources - Ameresco IS-MND Section 2*.
- California Department of Conservation, Division of Land Resource Protection, 2018. *Contra Costa County Important Farmland 2016*.
- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020*.
- Contra Costa County Code, Title 8. Zoning Ordinance.
- Contra Costa County General Plan 2005-2020. *Land Use Element*.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>3. AIR QUALITY – Would the project:</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

- a) ***Would the project conflict with or obstruct implementation of the applicable air quality plan? (Less than significant)***

Contra Costa County is within the San Francisco Bay air basin, which is regulated by the Bay Area Air Quality Management District (BAAQMD) pursuant to the *2017 Bay Area Clean Air Plan: Spare the Air, Cool the Climate*. The purpose of the *Clean Air Plan* is to bring the air basin into compliance with the requirements of federal and State air quality standards and achieve greenhouse gas reduction targets for 2030 and 2050.

The proposed project would be consistent with the Clean Air Plan goals, objectives, and control measures to decrease emissions of harmful air pollutants and super-GHGs. Being located almost entirely within the KCL property, the proposed project is subject to the LP89-2020 Conditions of Approval, as well as requirements of other permits governing the design, construction, operation, and maintenance of the landfill. Accordingly, if the proposed project is approved, the following LP89-2020 COAs will be incorporated into the project.

- 1 COA 20.1 (Prevention of Air Quality Deterioration). The applicant shall manage the facility in a manner that does not result in the significant deterioration of air quality in the vicinity of the site. The applicant shall comply with terms of the Authority to Construct and Permit to Operate issued by the Bay Area Air Quality Management District.
- 2 COA 20.2 (Odor Containment). The applicant shall implement Best Management Practices of the industry to minimize odors from operations and emissions from equipment. If the operator is contacted about odors being detected offsite, the date, time and description

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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of the odor complaint shall be logged and investigated promptly to expedite implementation of any necessary corrective action by the landfill operator.

- 3 COA 20.5 (Dust Suppressants). The applicant shall apply water or proven environmentally safe dust suppressants at least twice daily to working faces of the landfill, unpaved access roads, storage pile disturbances and construction areas.
- 4 COA 20.9 (Revegetation). The applicant shall revegetate exposed areas which will not be used for fill or construction for 90 days or longer with native grasses for dust and erosion control and for aesthetic purposes.
- 5 COA 20.22 (Temporary Road Paving). The applicant shall pave and maintain temporary road with gravel or crushed aggregate. Temporary roads shall be wetted or chemically treated when necessary to control dust.
- 6 COA 20.23 (Speed Limits). The applicant shall enforce speed limits set by the Contra Costa Environmental Health on internal site roads. The maximum internal on-site speed limit shall be 20 mph unless otherwise specified by Contra Costa Environmental Health.
- 7 COA 20.24 (Equipment Maintenance). The applicant shall maintain gas processing equipment in optimum working order to ensure that equipment emissions are controlled. Equipment shall be fitted with spark arrestors so potential for causing fires is minimized. Equipment shall not be left idling when not in use. Maintenance records shall be kept on all pieces of gas processing equipment.
- 8 COA 32.6 (Dust Suppression). The applicant shall sprinkle or chemically treat graded areas, borrow sites, stock piles, and temporary pavements to control dust, as determined necessary by Contra Costa Environmental Health and the Bay Area Air Quality Management District.

Other air quality measures that will be incorporated into the proposed project, if approved, including the following.

- 9 Diesel-powered construction equipment (e.g. graders, scrapers, compactors) shall be specified to use cleaner Tier IV diesel engines.
- 10 The project shall apply BAAQMD Basic Construction Mitigation Measures (as listed in Table 8-2 of the BAAQMD CEQA Guidelines) to further reduce potential fugitive emissions during construction:



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
3. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Equipment pads will be installed as soon as possible after grading.
4. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
5. All construction equipment shall be maintained and properly tuned in accordance with manufacturer’s specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
6. A publicly visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District’s phone number shall also be visible to ensure compliance with applicable regulations.

The proposed project would provide a beneficial use for the landfill gas (LFG) generated from operating the KCL and would be consistent with the goals and objectives of the Clean Air Plan. The project would not conflict with or obstruct implementation of the Clean Air Plan, and with the incorporation of the above described measures, would have a less than significant impact.

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

The May 2017 BAAQMD CEQA Guidelines provide guidance on evaluation of air quality impacts with adopted thresholds of significance for emissions of criteria air pollutants and pollutant precursors during project construction and during project operation. Under Criteria air pollutants include the following:

- *Carbon monoxide (CO)* is a colorless odorless gas that is a product of incomplete combustion of carbon-containing fuels such as natural gas, at power plants, wildfires, and incinerators. There is substantial evidence that CO can adversely affect public health and

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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can participate in chemical reactions in the atmosphere that can result in the formation of ozone. CO is harmful because it reduces the oxygen-carrying capacity of the blood. At toxic levels, CO interferes with oxygen delivery to the brain, heart, and other vital organs. This condition is especially critical for people with chronic lung disease, other cardiovascular diseases, and anemia.

- Nitrogen dioxide* (NO<sub>2</sub>) is a pungent gas that when combined with another air quality pollutant such as particulate matter creates the reddish-brown smog haze that occurs in parts of California. NO<sub>2</sub> acts as a respiratory irritant and is one of a family of chemicals comprised of nitrogen and oxygen commonly referred to as nitrogen oxides (NO<sub>x</sub>). The most prevalent of the NO<sub>x</sub> are NO<sub>2</sub> and nitric oxide (NO). NO<sub>x</sub> is produced by fuel combustion in motor vehicles, industrial stationary sources (such as industrial activities), ships, aircraft, and rail transit. Much of the NO<sub>2</sub> in the ambient air is formed in the atmosphere through photochemical reactions between NO and other air pollutants. NO<sub>x</sub> is a known precursor to the formation of ozone. Studies have demonstrated linkages between NO<sub>2</sub> exposure and premature death, and cardiopulmonary effects in infants, children, and asthmatics.
- Airborne inhalable particulate matter* is a complex mixture of solids and aerosols composed of small droplets of liquid, dry solid fragments, and solid cores with liquid coatings. For air quality regulatory purposes particles are defined by their diameter. Those with a diameter of 10 microns or fewer (PM<sub>10</sub>) are inhalable into the lungs and can cause adverse health effects. Fine particulate matter is defined as particles with a diameter of 2.5 microns or fewer (PM<sub>2.5</sub>). PM<sub>10</sub> and PM<sub>2.5</sub> can be emitted from different sources and may have different chemical compositions. PM<sub>2.5</sub> can be emitted from combustion of gasoline, diesel, oil, or wood products. These sources also may represent a significant portion of PM<sub>10</sub>. PM<sub>10</sub> also includes dust from construction sites, landfill, agriculture, wildfires, industrial sources, and windblown dust.

Both PM<sub>10</sub> and PM<sub>2.5</sub> can be inhaled into airway passages and deposited on the lungs. Particles deposited on the lung surface can cause tissue damage and lung inflammation. Short-term exposures to PM<sub>10</sub> have been associated with worsening of respiratory diseases including asthma and chronic obstructive pulmonary disease (COPD). Long-term exposure to PM<sub>2.5</sub> has been linked to premature death in people with chronic heart or lung diseases, and reduced lung function growth in children. Long-term exposure to PM<sub>10</sub> is less clear; however, a review by the International Agency for Research on Cancer (IARC) in 2015 concluded that particulate matter in outdoor pollution can cause lung cancer.

- Sulfur dioxide* (SO<sub>2</sub>) is a combustion product of sulfur or sulfur-containing fuels such as coal. SO<sub>2</sub> has a pungent irritating odor and is one of a family of chemicals made up of



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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sulfur and oxygen commonly referred to as sulfur oxides (SO<sub>x</sub>). SO<sub>2</sub> is emitted when sulfur-containing fuel is burned by motor vehicles, trains, ships, industrial sources, and off-road diesel equipment. Epidemiological studies have shown that asthmatic children and adults are most susceptible to SO<sub>2</sub> exposure. The elderly and people with cardiovascular disease may suffer adverse health effects such as decreased pulmonary function, wheezing, shortness of breath, and chest tightness. SO<sub>2</sub> is also a precursor to the formation of atmospheric sulfate and particulate matter (both PM<sub>10</sub> and PM<sub>2.5</sub>) and contributes to potential atmospheric sulfuric acid formation that could precipitate as acid rain.

- *Ozone* (O<sub>3</sub>) is an important component of smog and is a highly reactive and unstable gas. Ozone has a characteristic pungent odor. Ozone forms in the atmosphere through a complex chemical reaction between chemicals such as reactive organic gases (ROG) and NO<sub>x</sub> emitted from vehicles, industrial sources, fossil fuels, evaporation of paints, consumer products, and other sources. Ozone can damage tissues in the respiratory tract and result in adverse effects such as coughing, chest tightness and worsening of asthma symptoms in asthmatic children and adults. Ozone has also been demonstrated to cause damage to crops, vegetation, rubber, and plastics. Studies have shown that children and adults who participate in rigorous outdoor physical activities are at greater risk to ozone exposure.

Project Operation Emissions

Following is an evaluation of emissions from project operation. The emission factors used for CO and NO<sub>x</sub> were obtained directly from the manufacturer specifications for the enclosed process flare and thermal oxidizer. The emission factors for POC, PM<sub>10</sub>, and SO<sub>2</sub> were derived from USEPA AP-42 Air Emission Factors, as shown in Table 3-1.

The proposed project would have a maximum capacity of 4,700 standard cubic feet per minute (scfm) of LFG. Accordingly, the baseline condition shown in Table 3-2 is defined as the current flares operating on 4,700 scfm. The proposed project would reduce the need for the current continuous use of the two enclosed flares in operation at KCL and would result in a substantial reduction in criteria pollutants as shown in Table 3-2. The proposed project would result in reduction of emissions of up to 95 percent for CO. Substantial reductions of other criteria pollutants would also result from the project. These results are based on a worst-case scenario for operation of the RNG equipment that assumes the enclosed process flare would operate 25 percent of the calendar year. After initial start-up and two to three months of conditioning, actual operation of the enclosed process flare is project to be less than five percent. The enclosed process flare would operate only during a plant upset, or detection of out-of-specification gas that must be burned.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 3-1. Equipment Emission Factors**

<b>Equipment</b>		<b>Criteria Pollutant</b>				
		<b>CO</b>	<b>NO<sub>x</sub></b>	<b>PM<sub>10</sub></b>	<b>SO<sub>2</sub></b>	<b>VOCs</b>
Enclosed Process Flare	Emission Factor	0.20 lb/MMBTU (Partially Processed RNG and Waste Gas)	0.06 lb/MMBTU (Partially Processed RNG) 0.15 lb/MMBTU (Waste Gas)	0.06 lb/MMBTU (Partially Processed RNG) 0.15 lb/MMBTU (Waste Gas)	99.7% Sulfur conversion to SO <sub>2</sub> (Partially Processed RNG and Waste Gas)	39% of NMOC fraction in gas composition (Partially Processed RNG and Waste Gas)
	Source	John Zink (Manufacturer)	John Zink (Manufacturer)	USEPA AP-42	USEPA AP-42	USEPA AP-42
Thermal Oxidizer	Emission Factor	0.01 lb/MMBTU	0.056 lb/MMBTU	17 lb/MMscf CH <sub>4</sub>	99.7% Sulfur conversion to SO <sub>2</sub>	39% of NMOC fraction in gas composition
	Source	Clean Air (Manufacturer)	Clean Air (Manufacturer)	USEPA AP-42	USEPA AP-42	USEPA AP-42

Pounds per million British Thermal Units - lb/MMBtu, % - percent, lb/MMscf CH<sub>4</sub> – pounds per million cubic feet of methane, RNG – renewable natural gas

Source: Tetra Tech, May 2020

Table 3-2 shows a projected net decrease in all criteria pollutants because the proposed project would displace the LFG flow currently routed to the KCL’s two enclosed flares. Thus, the proposed project does not have the potential to generate significant adverse cumulative air quality impacts. Since project-specific air quality impacts would not be significant, they would not contribute to impacts that are cumulatively considerable.

In accordance with BAAQMD Regulation 2, Rule 2 Section 301 (2-2-301), the Best Available Control Technology (BACT) would be applied to any new or modified source that has the potential to emit (PTE) 10.0 pounds or more per highest day of CO, NO<sub>x</sub>, PM<sub>10</sub>, SO<sub>2</sub>, and precursor organic compounds.

The estimated pounds per day and equivalent tons per year (TPY) of emissions for the enclosed process flare and TOX are shown in Table 3-3. For the enclosed process flare, the SO<sub>2</sub> emissions are estimated to be below 10.0 pounds per highest day. For the TOX, the CO, PM<sub>10</sub>, and SO<sub>2</sub> emissions are projected to be below 10.0 pounds per highest day. Thus, no BACT is required for these criteria pollutants.



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 3-2. Comparison of Existing Flare Emissions vs Proposed RNG Potential to Emit (PTE)<sup>1</sup> (Tons Per Year [TPY])**

Site	Criteria Pollutants Emissions (TPY)				
	CO	NO <sub>x</sub>	PM <sub>10</sub> *	SO <sub>2</sub>	VOCs
Baseline Existing LFG Flare Emissions (approximately 4,700 scfm total) <sup>2</sup>	154.51	37.30	9.66	10.25	9.62
Proposed Project (4,700 scfm) <sup>1</sup>	7.72	9.34	1.91	1.54	6.68
Expected Net Change in Emissions	(146.79)	(27.96)	(7.75)	(8.71)	(2.94)
Percent Reduction	95%	75%	80%	85%	31%

<sup>1</sup>Proposed Project emissions based on operation of Thermal Oxidizer (TOX) for full year (8,760 hours) and enclosed process flare operating on pilot gas the full year (8,760 hours), and high oxygen waste gas 20 percent of the year (1,752 hours) at 50 percent methane.

<sup>2</sup>Current emissions for existing KCL A-1 and A-2 Flares at 4700 scfm total, over 8,760 hours in a calendar year.

\*PM<sub>2.5</sub> emissions assumed to be the same as PM<sub>10</sub>.

Source: Tetra Tech, May 2020

For the enclosed process flare the estimated emissions for CO, NO<sub>x</sub>, PM<sub>10</sub>, and VOCs exceed the 10.0 pounds per highest day threshold. For the TOX, the estimated emissions for NO<sub>x</sub> and VOC exceed 10 pounds per day, therefore the need for BACT would ultimately be determined by the BAAQMD.

Potential project-wide emissions for the criteria pollutants CO (7.72 TPY), NO<sub>x</sub> (9.34 TPY), and VOCs (6.68 TPY) are estimated to be less than the 10.0 TPY threshold established by the BAAQMD for offsets. The offset thresholds for PM<sub>10</sub>/PM<sub>2.5</sub> and SO<sub>2</sub> are 100.0 TPY in accordance with BAAQMD Regulation 2, Rule 2-301. Thus, no offsets are needed for these criteria pollutants. The offset thresholds for PM<sub>10</sub>/PM<sub>2.5</sub> and SO<sub>2</sub> are 100.0 TPY in accordance with BAAQMD Regulation 2, Rule 2-301. No offsets are required for these criteria pollutants. There are no projected emissions from the proposed Project that exceed the acute and chronic trigger levels in BAAQMD Regulation 2 Rule 5 (New Source Review of Toxic Air Contaminants). Based on the above considerations the impact of project operation would be less than significant.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 3-3. Proposed Equipment PTE Pounds Per Day and Tons Per Year**

Source <sup>1</sup>	Criteria Pollutants Emissions ( )				
	CO	NO <sub>x</sub>	PM <sub>10</sub> *	SO <sub>2</sub>	VOCs
	(lbs/day) (TPY)	(lbs/day) (TPY)	(lbs/day) (TPY)	(lbs/day) (TPY)	(lbs/day) (TPY)
Enclosed Process Flare	175.28	129.81	14.69	6.50	48.73
	6.93	4.90	0.58	0.25	1.82
TOX	4.34	24.32	7.29	7.08	26.60
	0.79	4.49	1.33	1.29	4.86
Total Pounds Per Day and Tons Per Year for Project	179.62	154.13	21.98	13.58	75.33
	7.72	9.34	1.91	1.54	6.68

<sup>1</sup> Total annual emissions for Process Enclosed Flare emissions per 100 percent operation during calendar year; 20 percent in transient scenario at highest emissions of High Oxygen operating scenario, and 100 percent operating on pilot gas.

\*PM<sub>2.5</sub> assumed to be the same as PM<sub>10</sub>.

Source: Tetra Tech, May 2020

### Construction-Related Emissions

The BAAQMD Air Quality Guidelines (pg. 8-1) outlines the use of the URBEMIS model for estimating construction-related emissions. For this analysis, project construction-related emissions were calculated using the California Emissions Estimator Model (CalEEMod). CalEEMod was developed by the California Air Pollution Officers Association (CAPCOA) and has most recently been updated in 2016. The URBEMIS was last updated in 2008, and therefore is outdated in comparison to the CalEEMod. CalEEMod is a state-wide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operational from a variety of land use projects.

The results from the CalEEMod are presented in Table 3-4. CalEEMod outputs (daily average emissions) were compared with the BAAQMD thresholds as detailed in the CEQA Air Quality Guidelines. The estimated average daily construction emissions of ROG, NO<sub>x</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> from the proposed RNG processing facility would be below applicable thresholds of significance



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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for construction-related emissions as established in the BAAQMD CEQA Guidelines, May 2017. Thus, potential impacts from construction-related emissions would be less than significant.

**Table 3-4. Construction Thresholds and CalEEMod Results**

Pollutant	BAAQMD CEQA Construction Threshold (average lbs/day)	CalEEMod Results for Project Construction (Maximum lbs/day)
ROG	54	1.39
NO <sub>x</sub>	54	26.52
PM <sub>2.5</sub>	54 (exhaust)	2.29
PM <sub>10</sub>	82 (exhaust)	1.17
PM <sub>10</sub> /PM <sub>2.5</sub>	Best Management Practices	N/A
Local CO	None	N/A
GHGs -	None	N/A
Risk and Hazards for new sources and receptors (Cumulative Threshold)*	Compliance with Qualified Community Risk Reduction Plan OR Cancer: > 100 in a million(from all local sources) Non-cancer: > 10.0 Hazard Index (from all local sources) (Chronic) PM <sub>2.5</sub> : > 0.8 µg/m <sup>3</sup> annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor	See Section on Risks and Hazards.
Accidental Release of Acutely Hazardous Air Pollutants*	None	N/A
Odors*	None	N/A

CO = carbon monoxide; CO<sub>2</sub>e = carbon dioxide equivalent; GHGs = greenhouse gases; lb/day = pounds per day; NO<sub>x</sub> = oxides of nitrogen; PM<sub>2.5</sub> = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM<sub>10</sub> = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million;

ROG = reactive organic gases; SO<sub>2</sub> = sulfur dioxide; N/A – Not Applicable

\*The receptor thresholds were the subject of litigation in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal. 4th 369.

\*\* The BAAQMD recommends that for construction projects that are less than one year duration, Lead Agencies should annualize impacts over the scope of actual days that peak impacts are to occur, rather than the full year.

Source: Tetra Tech, May 2020

**Greenhouse Gases (GHG):**

The BAAQMD has not adopted a threshold of significance for construction-related GHG emissions. Nevertheless, air quality measures 3, 4, 5, 6, 8, 9, and 10, as described in Environmental Checklist

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Section 3.a above would be implemented during construction, if the proposed project is approved, to minimize the construction-related GHG emissions. A quantitative assessment of construction-related GHG emissions is included in Environmental Checklist Section 8.a below. As discussed in Section 8.a, construction-related GHG emissions would be less than significant.

c) *Would the project expose sensitive receptors to substantial pollutant concentrations? (Less than significant)*

Sensitive receptors would be persons, who by either age (e.g., children and elderly persons), and/or pre-existing health conditions, and/or proximity to emission sources, and/or duration to exposure are considered to be more sensitive than others to air pollutants. Accordingly, schools, hospitals, convalescent homes, and residential areas are considered sensitive to air pollutants. In addition, persons who engage in rigorous outdoor physical activities are also considered sensitive due to the greater exposure to ambient air pollutants during activities involving exertion of the respiratory system.

Potential sensitive receptors located near KCL are single-family and multi-family residences; however, there are no residences within one-quarter mile of the proposed project. The closest residences to the Ameresco RNG processing facility site are single-family units located to the north and west, including in the following areas.

- The terminus of Jacqueline Drive, approximately 0.32 mile northeast of the project site;
- Westwood Lane, approximately 0.56 mile northwest of the project site; and
- Summitridge Court, approximately 0.40 mile west of the project site.

There are no residences located immediately south of the project site. The closest residences to the east of the project site are located approximately 1.6 miles away.

In addition to residences, there are no schools within one-quarter mile of the proposed project. Fourteen (14) schools are in the Pittsburg area within a 4-mile radius surrounding the project site. The closest schools are Royal Oaks Academy (private) and Rancho Medanos Junior High School, located approximately 1.2 miles and 1.6 miles, respectively, from the project site. Since these distances are greater than 1,000 feet, public notification requirements specified in BAAQMD 2-1-412 are not applicable.

As discussed in Environmental Checklist Section 3.b above, emissions from the proposed RNG processing facility would be substantially lower compared to the baseline condition that involves continuous operation of KCL’s two enclosed flares. Further, the proposed project would allow for the reduced need and operation of the existing KCL’s flares while creating a beneficial use of the LFG. Pursuant to California Health & Safety Code Section 42301.6(a) and BAAQMD Regulation 2,



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Rule 1, Section 412. the proposed project would not result in significant emissions of criteria air pollutants either during the construction period or during project operation. Thus, air pollutant-related impacts of the proposed project on surrounding sensitive receptors would be less than significant.

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

As discussed in Environmental Checklist Section 3.a above, if the proposed project is approved, air quality measures would be implemented for odor containment and to reduce construction-related emissions. With these measures, the proposed project would not result in emissions during project operation or construction that would adversely affect a substantial number of people. As shown in Table 3-2, the proposed project would allow for a beneficial use of the LFG generated at the KCL and result in a substantial net decrease in emissions of criteria pollutants compared to the baseline condition. The proposed project equipment and the RNG processing operation do not use or generate odorous compounds. The applicant would be required to follow proper procedures and methods to minimize potential facility odors.

**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
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- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020*.
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- Bay Area Air Quality Management District, 2017. *California Environmental Quality Act Air Quality Guidelines, May 2017*.
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- <https://www.aqmd.gov/caleemod/home>, 2020. *California Emissions Estimator Model (CalEEMod)*.
- Tetra Tech, 2020. *CalEEMod Results*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>4. BIOLOGICAL RESOURCES – Would the project:</b>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

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



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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The biological resources survey area includes land within the Primary Project Area, the SBA, and contiguous PG&E property. The survey area begins in the northwest portion of the active KCL landfill on the proposed RNG processing facility site located west of the existing LFGTE plant. The site would be filled to create a level pad for the proposed RNG processing facility. From this location the pipeline would be buried and travel through the developed landfill area, portions of the SBA, and into the contiguous PG&E property. The pipeline would terminate in a new Ameresco interconnect station to be constructed near the existing PG&E valve lot. Portions of the PG&E property and the valve lot are in the City of Pittsburg.

Permanent impacts to habitat would occur as part of the construction of the pad for the processing facility. Currently, storm water flow from landfill roads is diverted to a concrete drainage ditch in this area. As a result of construction of the new RNG processing facility, all storm flow will be diverted to the existing detention basin. Removal of eight non-native pepper trees (*Schinus molle*) would occur as part of this development.

The pipeline alignment extends south and east from the proposed RNG processing facility through disturbed areas of the KCL into the SBA. The pipeline alignment follows existing disturbed ranch roads, but also exits the ranch roads where necessary to maximize constructability and minimize impacts on the natural terrain. Equipment and material laydown areas are strategically located along the pipeline route. The pipeline route proceeds east, exits the SBA and enters adjoining PG&E property south of the former City of Pittsburg golf course. The pipeline alignment proceeds northeast to a point west of an existing PG&E underground pipeline. From this point the pipeline alignment proceeds parallel to the PG&E pipeline due north. The pipeline trench would go underneath the Contra Costa Canal and a stream/riparian area through a horizontal directional drill before emerging on the other side and eventually terminating at a new interconnect station to be located near the existing PG&E metering valve lot.

Temporary construction impacts would occur during pipeline installation. The construction activities will occur within a 60-foot wide to a 100-foot wide workspace throughout the project area (Figure 4-1). Construction access would be limited to existing paved roads and current ranch/fire roads to the extent feasible and/or within the 15-foot buffer with defined staging and equipment laydown areas. Access is proposed from four locations:

- West end access point: Bailey Road access through the existing landfill paved road;
- Mid-point access point: John Henry Johnson Parkway through City of Pittsburg-owned lands;
- East end access point: gate at Alta Vista Circle; and
- North end access point: City of Pittsburg old golf course parking lot.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Permanent impacts associated with the installation of the pipeline include the installation of bioengineered stabilization structures along a Tributary to Willow Creek, and the installation of equipment in the proposed interconnect station near the existing PG&E valve lot.

Staging and equipment laydown areas are proposed at five (5) locations along the proposed pipeline route as shown on Figure 4-1. All temporary impacts will be restored to previous conditions within one year of impacts occurring.

Biological Resources Analysis

A biological resources analysis for the survey area was completed for the proposed project, which included a literature review of existing information regarding biological resources in the project region followed by reconnaissance-level field surveys, botanical surveys and jurisdictional wetlands/waters delineations. Jurisdictional wetlands and waters are discussed in more detail in Environmental Checklist Section 4.c below.

*Literature Review*

A review of existing biological resources within and adjacent to the project site was conducted prior to performing field surveys. A query of federally listed wildlife species for the project area was obtained from the U.S. Fish and Wildlife Service’s (USFWS) Sacramento Endangered Species Office IPaC website. Additional information about the locations of known occurrences of sensitive species within five miles of the project area was compiled from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDDB) and by searching within the six U.S. Geological Survey 7.5-minute quadrangles that surround the project area (Vine Hill, Honker Bay, Antioch North, Antioch South, Clayton, Walnut Creek). The California Native Plant Society’s (CNPS) Online Inventory of Rare and Endangered Plants was searched for special status plant species within the Vine Hill, Honker Bay, Clayton, and Antioch South U.S. Geological Survey 7.5-minute quadrangles that surround the survey area. Additional sources consulted included the East Contra Costa County Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP).

*Reconnaissance-Level Biological Resources Survey*

Visual reconnaissance surveys of the project area and surrounding habitats were conducted by Swaim Biological Inc. during multiple field surveys from November 2017 to March 2020. During the field surveys the biologists walked the extent of the project area for the proposed RNG processing facility, proposed pipeline alignment, proposed interconnect station, and existing PG&E valve lot to evaluate biological resource conditions that exist within the project area. The survey area included an approximately 50-foot buffer on either side of the proposed pipeline



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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alignment, and the sites of the proposed RNG Processing Facility and proposed interconnect station near the existing PG&E valve lot.

Special-Status Species

Candidate, sensitive, or special-status species are commonly characterized as species that are at potential risk or actual risk to their presence in a given area or across their native habitat. These species have been identified and assigned a status ranking by governmental agencies such as the CDFW and the USFWS and by private organizations such as the CNPS. The degree to which a species is at risk of extinction is the determining factor in the assignment of a status ranking. Some common threats to a species’ or population’s presence include habitat loss, degradation, and fragmentation, as well as human conflict and intrusion. For the purposes of this biological review, special-status species are defined by the following codes:

- Animals and plants listed or proposed for listing as threatened or endangered under the California Endangered Species Act (CESA) (Fish and Game Code §2050 et seq.; 14 CCR §670.1et seq.) or the Federal Endangered Species Act (FESA) (50 CFR (Code of Federal Regulations) 17.11);
- Animals and plants that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);
- Animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Animals that are designated as "species of special concern" by CDFW;
- Animal species that are designated as “fully protected” under California (Fish and Game Code 3511, 4700, 5050, and 5515);
- Animal species that are designated as “covered” species under the HCP/NCCP;
- Bat species that are designated on the Western Bat Working Group’s (WBWG) Regional Bat Species Priority Matrix as: “Red or High.” These species are considered to be “imperiled or are at high risk of imperilment.”
- Plants that are listed by CNPS Rare Plant Program as rank 1A – plants presumed extirpated in California and either rare or extinct elsewhere, 1B – plants rare, threatened or endangered in California or elsewhere, 2A – plants presumed extirpated in California but common elsewhere, 2B – plants rare, threatened or endangered in California by common elsewhere, 3 – plants about which more is needed and 4 – plants of limited distribution;
- Plants that are listed by the HCP/NCCP as “covered” or “no take” species;

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- Sensitive Natural Communities – Natural Communities are identified by CDFW. State and Global rarity ranks are indicated Alliances and some Associations. Natural communities with State rarity ranks of S1-S3 are considered Sensitive Natural Communities. A “?” indicates the State’s best estimate of the rank if it is known that insufficient samples over the full expected range but existing information points to this rank.

Habitat Types and Associated Wildlife Species

Habitat types within the survey area are described based on field observations and are consistent with the HCP/NCCP land cover type classifications.

*Annual Grassland*

Annual grassland is the dominant habitat type present throughout the SBA and project area. The majority of the pipeline alignment is dominated by riggut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), and wild oat (*Avena* species). Within the annual grassland habitat are three vegetation/community alliances which are CDFW Sensitive Natural Communities - California match weed patches, California buckeye groves, and gum plant patches.

The annual grassland habitat is intact and connected to adjacent open grassland habitat. This intact grassland supports multiple wildlife species including reptiles such as western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalis viridis*); mammals such as black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta’s pocket gopher (*Thomomys bottae*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), American badger (*Taxidea taxus*), and coyote (*Canis latrans*); and birds such as burrowing owl (*Athene cunicularia*), short-eared owl (*Asio flammeus*), loggerhead shrike (*Lanius ludovicianus*) and western meadowlark (*Sturnella neglecta*). Annual grasslands also provides important foraging habitat for turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), and red-tailed hawk (*Buteo jamaicensis*), and CDFW Watch List species such as Cooper's hawk (*Accipiter cooperii*), northern harrier (*Circus cyaneus*), ferruginous hawk (*Buteo regalis*), horned lark (*Eremophila alpestris*), prairie falcon (*Falco mexicanus*), and American kestrel (*Falco sparverius*).

The three Sensitive Natural Communities are described further.

- California match weed patches (State Rarity Rank S3, MCV2 Alliance 32.042.00). Small stands of California matchweed (*Gutierrezia californica*) are associated with small and large rock outcrops and were observed among the grasslands at three locations. (Figure 4-2). The large outcrops supported California sage (*Artemesia californica*) as a codominant, while smaller grassland outcrop codominants were narrow tarplant (*Holocarpha virgata*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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ssp. *virgata*), naked buckwheat (*Eriogonum nudum*), and annual grasses. Other species observed were soaproot (*Chlorogallum pomeridianum*), Clarkia, yarrow (*Achillea millefolium*), and *Amsinckia*. The herbaceous layer is open to continuous and grassy. Stands are also known to occur at the nearby Black Diamond Mines Regional Park. Characteristic species in the CDFW-described Alliance are *Atriplex spinifera*, *Eastwoodia elegans*, *Ephedra californica*, *Ericameria linearifolia* and *Eriogonum fasciculatum*. CDFW reports that in the Diablo Range and elsewhere in the Central California Ranges, *Gutierrezia californica* occurs with other herbs such as *Amsinckia menziesii*, *Poa secunda*, and non-native grasses, which is more similar to what was observed in the study area.

- California buckeye groves (State Rarity Rank S3, MCV2 Alliance 75.100.03). Outside of the pipeline alignment corridor but adjacent to (nearly overhanging) a potential access road is a small, dense grove of California buckeye (*Aesculus californica*) trees. The grove is associated with the intermittent drainage located along the access route (Figure 4-2). The understory was not explored but appeared to be lacking in shrub and herbaceous layers due to a darkly shaded environment created by the continuous tree canopy. CDFW reports that inland stands are small and often occur in relative mesic, north-facing concavities among oak woodlands and grasslands.
- Gum plant patches (State Rarity Rank S2S3, MCV2 Alliance 52.206.01). Gum plant patches occur at several locations in the survey area within the SBA and are associated with moist hillslopes that are in turn broadly associated with seepy areas. Coverage is not continuous but is consistently intermittent where patches occur. The patches do not strongly correlate with the described Alliance, which focuses more on slightly elevated or drier ground adjacent to coastal dunes, salt marshes, or alkaline marshes. Membership rules for the Alliance are not provided, but *Grindelia camporum* is the dominant large herb and patches exhibit consistent coverage. CNPS remarks that more sampling and analysis is needed to clarify *Grindelia* stands in overall grassland, coastal salt marsh, and alkaline marsh patterns.

#### *Developed and Ruderal*

Developed land cover is present at the site of the proposed RNG processing facility and the existing PG&E valve lot. These areas are also surrounded by grassland and ruderal habitats and not completely isolated from urban environments. The HCP/NCCP discerns ruderal habitats from weedy annual grasslands by characterizing them as disturbed areas, usually as vacant lots within developed zones, with sparse nonnative, typically weedy vegetation. Such ruderal habitats present at the existing Ameresco LFGTE plant and around the PG&E valve lot consist of weedy species including black mustard (*Brassica nigra*), thistles (*Cirsium* spp.), and wild radish (*Raphanus sativa*).

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Wildlife common to ruderal habitats and developed habitats within the project area can include species closely associated with urban development, such as house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), rock dove (*Columba livia*), western scrub-jay (*Aphelocoma californica*), black-tailed jackrabbit, raccoon (*Procyon lotor*), opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), and house mouse (*Mus musculus*). Wildlife species described above under annual grassland could also be utilizing these ruderal habitats throughout the project area and vice versa.

Potential Special-Status Plant and Animal Species

A total of 53 special status wildlife species and 63 special status plant species were identified through the literature review and database queries as having some potential to occur in the project area. Of these, three plant species were determined to have a moderate potential to occur within the project area. A total of 18 wildlife species were determined to have a moderate to high potential to occur within the project area. The complete list of plant species with the potential to occur within the project area is provided in Table 4-1; the complete list of wildlife species with the potential to occur within the project area is provided in Table 4-2. The results of the CNDDDB search are shown graphically for plants on Figure 4-3 and wildlife on Figure 4-4.

*Potential Special Status Plants*

Three special status plant species have a moderate potential to occur within the project area.

- Large-flowered fiddleneck (*Amsinckia grandiflora*); FESA Endangered, CESA Endangered, CNPS Rare Plant Rank (CRPR) 1B.1, HCP/NCCP No Take Species. Large flowered fiddleneck is an annual herb that is native and endemic to California. It occurs on grassy slopes below 984 feet elevation, and blooms between March and May. There are only nine known occurrences, and of those just three are presumed to be extant. The other six are likely extirpated. Although several species of *Amsinckia* were observed during surveys, large-flowered fiddleneck was not observed.
- Big tarplant (*Blepharizonia plumosa*); CRPR 1B.1, HCP/NCCP Covered Species. Big tarplant is an annual herb that is native and endemic to California. It occurs on dry slopes in grasslands below 1,640 feet elevation, and blooms between July and November. It usually occurs on clay soils, which are present in the survey area. There are 53 known occurrences and 51 of those are presumed to be extant, although occurrences in the Honker Bay U.S. Geological Survey 7.5-minute quadrangle (in which the project is located) are believed extirpated. Big tarplant was not observed during surveys. Out of the 10 genera and many



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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species comprising *Asteraceae* Group 10 which includes *Blepharizonia*, only narrow tarplant was observed (*Holocarpha virgata* ssp. *virgata*).

- Round-leaved filaree (*California macrophylla*); HCP/NCCP Covered Species. Round-leaved filaree is an annual herb that is native to California and also occurs down to northern Mexico. It is the only plant in its genus. It occurs in open sites, grassland, scrub, vertic clay, and occasionally serpentine soils below 3,937 feet elevation, and blooms between March and July. It formerly was a CRPR species, but surveys identified enough secure populations to remove it from the rare ranking. It remains a covered species under the HCP/NCCP. Round-leaved filaree was not observed during surveys.

*Potential Special Status Wildlife*

A total of 18 special status wildlife species have a moderate to high potential to occur within the project area.

Amphibians

- California tiger salamander (*Ambystoma californiense*); FESA Threatened; CESA Threatened, HCP/NCCP Covered Species. Critical habitat for the California tiger salamander was designated by USFWS in 2005. The project is located outside of designated critical habitat for the species. The nearest critical habitat to the project area is Unit CV-18, located approximately 18 miles away to the south in Alameda County.

The California tiger salamander is a terrestrial salamander that inhabits valley and foothill grasslands and the grassy understory of foothill oak woodlands, usually within one mile of water. The California tiger salamander is strongly associated with grassland habitat but also occurs in other habitat types, including oak savanna, the edges of mixed woodlands, and foothill coniferous forests. The species requires two major habitat components: aquatic breeding sites and terrestrial refuge sites. California tiger salamanders move between these two habitat types throughout the year.

The California tiger salamander spends most of its time underground in subterranean refuge sites, or refugia. Subadult and adult California tiger salamanders spend the dry summer and fall months of the year in the burrows of small mammals typically California ground squirrel (*Spermophilus beechyii*) or Botta’s pocket gopher (*Thomomys bottae*) burrows and, occasionally, human-made structures. These burrows provide protection from the sun and dry winds that are associated with the dry California climate.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Adults use aquatic breeding sites that are up to 1.4 miles from upland refugia. The adults migrate to suitable breeding sites during the rainy season to lay their eggs primarily in vernal pools, seasonal pools and ephemeral ponds, permanent human-made ponds (e.g., stock ponds), reservoirs, and small lakes. After breeding, adults leave the pond and enter small mammal burrows where they may continue to exit and enter the burrows nightly for the next few weeks to feed. Post-metamorphosis dispersal of juvenile salamanders occurs as seasonal breeding sites begin to dry in late spring or early summer, metamorphosed juveniles move away from breeding ponds into the surrounding upland habitat. Once in upland terrestrial habitat, juvenile California tiger salamanders may not return to breeding ponds for several years. However, they do remain active in the upland habitat and come to the surface during rainfall events to disperse and forage.

The project area is located within HCP/NCCP modeled suitable migration and refugia habitat for the California tiger salamander. Grassland with rodent burrows throughout the impact locations provide suitable upland habitat. There is a detention basin located 0.14 mile downslope from the proposed RFG processing facility, along with livestock ponds and created wetlands are present surrounding the study area that may provide suitable breeding habitat although no suitable breeding habitat occurs within the study area. There are 22 CNDDDB records of the California tiger salamander within five miles of the property; the closest record is 0.3 miles away where 50 juveniles were observed in a mitigation pond on the landfill property in May 1995; however, this mitigation pond has failed to hold water on a regular basis.

- California red-legged frog (*Rana draytonii*); FESA Threatened; CDFW Species of Special Concern, HCP/NCCP Covered Species. Critical habitat for the California red-legged frog was designated by USFWS in 2010. The components of the proposed project are not within any designated critical habitat. The nearest critical habitat is Unit CCS-2, located approximately eight miles to the south of the project area.

California red-legged frog populations are typically associated with deep pools or lakes with overhanging woody vegetation, usually willows, and an intermixed fringe of cattails. California red-legged frogs also frequently breed in ephemeral creeks and drainages and in ponds that may or may not have riparian vegetation. Suitable breeding sites include still or slow-moving sources of water that remain inundated long enough for larvae to complete metamorphosis, which typically occurs from 11–20 weeks after hatching. California red-legged frogs generally breed from January to May, attaching eggs to vegetation, fencing, or any available attachment sites in shallow water. During summer and fall months, California red-legged frogs may disperse away from breeding sites and take refuge in cool, moist areas, including aquatic, riparian, and upland areas within the range of the species and any landscape features that provide cover such as small mammal



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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burrows, rocks piles, organic debris (e.g., downed trees or logs), leaf litter, or industrial debris. Adult California red-legged frogs tend to be most active at night during wet weather, but they may move through upland areas at any time during the year. California red-legged frogs may disperse over two miles from breeding ponds but shorter movement distances of up to one mile probably occur much more commonly.

The project area is located within HCP/NCCP modeled potential migration and refugia habitat. A tributary stream to Willow Creek within the SBA is mapped by the HCP/NCCP as potential breeding habitat. There is a detention basin located 0.14 mile downslope from the proposed RFG processing facility, along with livestock ponds, created wetlands and former golf course ponds present in the project area that may provide suitable breeding habitat although no suitable breeding habitat occurs within the proposed RNG processing facility site or proposed pipeline alignment. Grassland with rodent burrows, soils cracks, and seasonal wetlands such as seeps and springs present within and adjacent to the impact locations provide suitable upland refugia habitat. There are 13 CNDDDB records of the California red-legged frog within five miles of the property. The created wetlands within the SBA have the closest CNDDDB record; a juvenile was observed in 2000.

Birds. The SBA includes open, intact grassland that supports potential habitat for multiple special status grassland bird species. In addition to the federal and State protections listed below, all species are protected by the federal Migratory Bird Treaty Act and the California Fish and Game Code, which prohibit take of individuals (including active nests).

- Cooper’s Hawk (*Accipiter cooperii*); CDFW Watch List Species. Cooper’s hawks breed in forests, woodlands, and wooded areas within developed landscapes. The species forages most frequently in wooded habitats but will also forage within edge and open field habitats. Individuals hunt from concealed perches, or on the wing, using vegetation and structures to conceal their approach. Preferred prey includes small and medium sized ground and shrub-dwelling birds, although small mammals are also taken. Suitable foraging habitat exists throughout the project area and within the pipeline alignment, although the species’ preferred woodland foraging habitat is absent from the project area.
- Tricolored blackbird (*Agelaius tricolor*); CDFW Threatened Species. The tricolored blackbird occurs primarily in California, forming large flocks within freshwater marsh, grassland, and agricultural habitats. The species nests primarily in dense freshwater marshes surrounded by extensive grasslands, but is also known to utilize blackberry, triticale, and other dense vegetation for nesting colonies. Breeding colonies require extensive nearby grassland habitat to provide suitable foraging resources for the colony. Opportunistic foragers, tricolored blackbirds feed on a variety of insects, invertebrates,

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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and both wild and crop grains. Wintering birds inhabit open grassland and agricultural areas, forming mixed flocks with other blackbird species. Suitable grassland foraging habitat exists throughout the project area and within the pipeline alignment.

- Grasshopper sparrow (*Ammodramus savannarum*); CDFW Species of Special Concern. Grasshopper sparrows breed in extensive, open, short grasslands with scattered clumps of shrubby vegetation. Nests consist of a domed grass structure built on the ground and concealed in dense vegetation. Prime breeding habitat features very large, unfragmented areas of grassland with patches of bare ground, and clumps of shrubby vegetation surrounded by denser grass cover for singing perches and nest sites. Grasshopper sparrows breed from mid-March to August in California, after which they migrate to southern wintering grounds.

Suitable nesting and foraging habitat exist throughout the project area and within the pipeline alignment.

- Golden eagle (*Aquila chrysaetos*); Federal Bald and Golden Eagle Protection Act; CDFW Fully Protected Species, HCP/NCCP Covered Species. Golden eagles occur in grasslands, oak savannahs, woodlands, and agricultural areas. Nesting habitat includes cliffs and large trees in open or semi-open areas, and golden eagles frequently use the same nesting sites between years or use alternate sites within a territory. Golden eagles mostly prey on rabbits, hares and rodents but also take other mammals, birds, reptiles, and some carrion.

The project area is located within the HCP/NCCP modeled suitable habitat of the golden eagle. Grassland within the SBA provides suitable foraging habitat. No large trees were observed that could supporting nesting in the grassland potential impact locations, however, large trees on the adjacent golf course could provide marginal nesting habitat. Eucalyptus trees along the ranch roads within the SBA provide potential nesting habitat. There is one CNDDDB record of the Golden eagle within five miles of the property on the former Concord Naval Weapons Station (CNWS) where eagles have been seen foraging regularly during Audubon Christmas Bird Counts; habitat at the former CNWS is considered foraging/winter migration habitat.

- Short-eared owl (*Asio flammeus*); CDFW Species of Section Concern. The short-eared owl is a species of open country, nesting on the ground in marshes, grasslands, and tundra. The species breeds only rarely in the Greater Bay Area but has been observed foraging over marshlands and grasslands. Short-eared owls hunt both day and night, preying primarily on small mammals, especially voles (*Microtus californicus*). Suitable grassland foraging habitat exists throughout the project area and within the pipeline alignment.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- Burrowing owl (*Athene cunicularia*); CDFW Species of Special Concern, HCP/NCCP Covered Species. The burrowing owl is a small owl (typically ten inches tall) associated with open grasslands. In California, burrowing owls occur in extensive grassland habitats that support California ground squirrels. Ground squirrel burrows are utilized by the burrowing owl for both nesting and roosting. The species occurs in flat or gently sloping open grassland or sparse scrubland habitats. High quality habitat consists of annual and perennial grasslands, with sparse or nonexistent tree or shrub cover, and areas of short vegetation. These areas provide foraging habitat and allow burrowing owls to detect predators. Burrowing owls typically nest between February and August. After nesting is completed, adult owls may remain in their nesting burrows or in nearby burrows, or they may migrate; young birds disperse across the landscape from 0.1 to 35 miles from their natal burrows. Burrowing owl populations have declined substantially in the San Francisco Bay area in recent years, with declines estimated at four to six percent annually.

The project area is located within the HCP/NCCP modeled suitable habitat of burrowing owl. Burrows of suitable size to support the species (four inches or greater in diameter) were observed during the planning survey conducted for the proposed project within the project area. California ground squirrels were observed as well as active ground squirrel burrows. There are previous observations of burrowing owls on the property. There are five CNDDDB records of the Burrowing owl within five miles of the property. The nearest record is approximately 1.3 miles away where an active burrow was observed in 1999 near the former CNWS.

- Ferruginous Hawk (*Buteo regalis*); CDFW Watch List Species. Ferruginous hawks occur in grasslands and other extensive, open habitats. The species winters in California, occurring where its primary prey, rabbits, and ground squirrels, are numerous. Individuals frequently hunt from the ground or from elevated perches. Suitable grassland foraging habitat exists throughout the project area and within the pipeline alignment.
- Northern Harrier (*Circus hudsonius*); CDFW Species of Special Concern. Northern harriers inhabit open habitats with relatively short vegetation. The species occurs year-round in California, breeding primarily in extensive marshlands, wet grasslands, and agricultural fields. Harriers forage over open wetland and grassland habitats, preying on small and medium-sized mammals and birds. Suitable foraging habitat exists throughout the project area and within the pipeline alignment.
- White tailed kite (*Elanus leucurus*); CDFW Fully Protected. The white-tailed kite occurs in nearly all lowlands in California, except the southeast deserts. The core of the white-tailed kite’s breeding range in the U.S. is California, with nearly all areas up to the western Sierra Nevada foothills and southeast deserts occupied. They require relatively open habitat for

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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foraging, and trees (isolated or within stands) for nesting and roosting. White-tailed kite nest in trees, composed of small twigs and lined with grass, hay or leaves. White-tailed kites breed in lowland grasslands, agriculture, wetlands, oak-woodland and savannah habitats, and riparian areas associated with open areas. The presence of white-tailed kites is closely tied to the presence of prey species, particularly voles. Prey base may be the most important factor in determining habitat quality for white-tailed kites.

The project area includes suitable foraging habitat throughout the SBA and PG&E property. Trees in the SBA and near the boundary with the PG&E property could support nesting. Some of these locations are adjacent to or near the proposed pipeline alignment. Additionally, large trees located outside of the project area on the adjacent golf course, and eucalyptus and other trees within the SBA along the ranch roads may provide potential nesting habitat. There is one CNDDDB record of the white-tailed kite within five miles of the property (approximately 4.5 miles away). The observation is a nesting record from 1985.

- California horned lark (*Eremophila alpestris actia*), CDFW Watch List Species. The California horned lark is endemic to California and Baja California and is a common resident of open habitats absent of trees and large shrubs. They are primarily associated with grasslands with low, sparse vegetation and can be found from the coast and deserts near sea level to alpine habitat above treeline in the Sierra Nevada. They are often found walking along the ground foraging for insects, spiders, and snails. Grasses, forbs, rocks, clods of soils, and other surface irregularities provide cover for foraging and nesting. Nests are built on the ground in depressions often next to grass tufts. Due to the loss of grassland habitat through agricultural development, the California horned lark is a California Department of Fish and Wildlife Watch List Species.

Suitable nesting and foraging habitat exist throughout the project area and within the pipeline alignment.

- Loggerhead shrike (*Lanius ludovicianus*): CDFW Species of Special Concern. Loggerhead shrikes inhabit open habitats with relatively short vegetation and may be found in a variety of open habitats, including grasslands, scrub, riparian woodlands, ruderal habitats, and developed areas such as golf courses and agricultural fields. Ideal breeding habitat for loggerhead shrikes is open, with short grassy vegetation punctuated by many perches, shrubs, or trees for nesting, and sharp branches or barbed wire fences for impaling prey. Shrikes may begin nesting as early as late February, and continue through July, especially in the western portion of the range, where populations are sedentary. Shrikes typically nest in shrubs and low trees, although brush piles may also be used when shrubs are not available.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The project area includes suitable foraging habitat throughout the SBA and PG&E Property. Trees that would be removed at the proposed RNG processing facility site and trees at the SBA/PG&E property boundary provide suitable nesting habitat. Trees along the ranch roads may also provide suitable nesting. Barbed wire is prevalent offering resources for prey impalement.

Mammals

- American badger (*Taxidea taxus*); CDFW Species of Special Concern. The American badger is a carnivore in the family Mustelidae. Badgers range throughout most of California and can be found anywhere with friable soils and high concentrations of burrowing rodents, but are more prevalent in open grassland, savanna, and mountain meadow habitats. Their front legs have large claws adapted for digging their prey out of underground burrows. Badgers prey primarily on ground squirrels (*Spermophilus* spp.) and pocket gophers (*Thomomys* spp.), although prey may also include other rodents, reptiles, birds, eggs, insects, and carrion. They frequently reuse old burrows, although some may dig a new den each night especially during summer. Badgers mate in summer and early fall and young are born in burrows in March and April. Badgers are less active in the winter and may spend extended periods of time in a state of torpor.

The intact grassland in the SBA and on PG&E property provide high quality suitable habitat for American badger. Burrows of suitable size to accommodate the badger, with large soil aprons, large belly drags, and appropriate tracks, were observed adjacent to ranch road through the SBA. Thus, the potential for American badger within the project area is moderate to high, supported by the presence of suitable burrows in the surrounding area.

- San Joaquin kit fox (*Vulpes macrotis mutica*); ESA Endangered; CESA Threatened, HCP/NCCP Covered Species. Critical habitat has not been designated for the San Joaquin kit fox. Kit foxes are typically associated with annual grasslands with sparse or absent shrub cover, sparse ground cover, and short vegetation. The species excavates burrows in areas in areas with sandy soils that are relatively stone-free to several feet below the surface. Kit foxes also frequently modify or use dens constructed by other animals and human made structures. Kit foxes change dens frequently, and often use several dens each year. Burrows suitable for use by San Joaquin kit fox are generally at least four to five inches in diameter at the surface and extend at least two feet below the surface without narrowing below four inches. San Joaquin kit foxes are primarily nocturnal and active throughout the year. Kit foxes primarily prey on small to medium sized mammals, most commonly California ground squirrels, kangaroo rats, and lagomorphs. Kit foxes breed between December and February, with pups typically born in February or March.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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One litter per year is typical. Pups remain with their parents for three to four months before dispersing.

The project area is located within the HCP/NCCP modeled suitable core habitat of San Joaquin kit fox. Indications of use by San Joaquin kit fox – including large keyhole-shaped burrows, tracks, scat, prey remains, or fur were not observed during the reconnaissance surveys for the proposed project. However, burrows of suitable size to accommodate the San Joaquin kit fox (greater than five inches in diameter for a minimum of one-foot underground) were observed within the project area and within the pipeline alignment. There are four CNDDDB records of the San Joaquin kit fox within five miles of the project site. The nearest record is from 1992 of a foraging adult on East Bay Regional Park District (EBRPD) lands.

*Bat Species of Special Concern*. The SBA includes open, intact grassland with adjacent rock outcrops, trees and water sources that supports potential habitat for roosting and foraging bat species. Potential roost sites in rock outcrops in the vicinity of the proposed pipeline alignment are present and provide potentially suitable roost habitat for special status bat species discussed below. Trees in the SBA and PG&E property could support roosting and are adjacent to or near the pipeline alignment. Additionally, trees located along ranch roads within the SBA provide potential roosting habitat.

- Pallid bat (*Antrozous pallidus*); CDFW Species of Special Concern. Pallid bat day-roosting habitat typically includes rocky outcrops, cliffs, large-diameter live and snag trees, and spacious crevices near open foraging habitats. Pallid bats may also roost in caves, mines, bridges, barns, porches, bat boxes, stone piles, rags, baseboards, rocks, and on the ground. Day roosts are generally warm and out of reach from ground predators and may consist of single- or mixed-sex colonies in crevices or man-made structures. Pallid bats have also been documented using culvert structures and bridges for roosting. The number of individuals in a day roost range from a few individuals to a couple of hundred individuals. There is one CNDDDB record for pallid bat that is part of a museum collection at the Museum of Vertebrate Zoology at Berkeley. Pallid bats have been detected on EBRPD lands as part of surveys conducted in Black Diamond Mines Regional Park located within the 5-mile radius of the project area.
- Townsend's big-eared bat (*Corynorhinus townsendii*); CDFW Species of Special Concern, HCP/NCCP Covered Species. Townsend's big-eared bats are found throughout California, but the details of its distribution are not well known. Townsend's big-eared bats are found in all but subalpine and alpine habitats and may be found at any season throughout its range. The species requires cavity-type habitats such as caves, tree basal hollows, mines, tunnels, buildings, bridges, or other human-made structures for roosting. Townsend's big-

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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eared bats may use separate sites for night, day, hibernation, or maternity roosts. Hibernation sites are generally cold, but not below freezing. Individuals may move within the hibernaculum to find suitable temperatures. Maternity roosts are found in generally warm sites. Day roosting colonies can range from a singly roosted male or female depending on season to groups of individuals into the hundreds during maternity season. There are no CNDDDB records of the Townsend’s big-eared bat occurring within the 5-mile radius.

- Western red bat (*Lasiurus blossevillii*); CDFW Species of Special Concern. Western red bats can be found throughout California’s lower elevations, with many records concentrated in the Central Valley. Like some bats found in California, western red bats make regional seasonal movements between their winter and maternity roosts. As a foliage roosting bat, the western red bat is closely associated with well-developed riparian habitats but would also utilize other habitats (e.g. orchard trees, eucalyptus, tamarisk, etc.) that provide suitable dense clusters of leaves creating suitable roosting sites. Of note, this species has been observed roosting on the ground within leaf clutter. The western red bat is a solitary roosting bat that would often have two pups per year. There is one CNDDDB record of a “bat(s) detected” within the 5-mile radius in Antioch in 1998.

Impacts to Special Status Plant and Wildlife Species

*Special Status Plants*

No special-status plants were observed during floristic botanical surveys conducted for the proposed project. Thus, there are no potentially significant impacts to special status plants.

*Special Status Wildlife*

The proposed project could result in **potentially significant impacts to certain special status wildlife species during project construction**, including the following.

- California red-legged frog and California tiger salamander. Project-related impacts could affect California red-legged frog and California tiger salamander upland habitat and potentially impact individuals present in the affected habitat. No impacts to breeding habitat for either species would occur as a result of project activities. Seasonal wetlands that would be impacted as a result of construction of the proposed RNG processing facility construction and the pipeline crossing provide refugia habitat for the California red-legged frog.



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Temporary impacts associated with construction related activities may injure or kill individuals by crushing occupied burrows or running over individuals. Individuals may become trapped in excavated areas, pipes or other equipment used for construction. Hazardous chemicals and substances during construction (oil, gasoline) may cause mortality in the event of spills or leaks.

- **Birds.** The project area contains suitable nesting habitat for multiple special status bird species. Open, intact grassland and tress within and adjacent to the Project Site provides suitable habitat for a variety of nesting raptors and birds protected by the Migratory Bird Treaty Act. If conducted during the nesting season (February 1 to August 31), construction could have direct effects on special status and other bird species potentially nesting in open grassland and/or trees within the SBA. Ground disturbance in the grassland and removal or trimming of the trees could result in destruction of active nests, including eggs, nestlings, or juveniles, and construction-related disturbance (e.g., equipment noise, presence of workers) could disrupt normal nesting behavior, resulting in nest abandonment and reproductive failure.
- **American badger and San Joaquin kit fox.** The SBA and most of the PG&E property provide suitable habitat for American badgers and San Joaquin kit fox. Construction could have direct effects if these animals are present in burrows within the affected habitat. Potential direct effects on individuals include mortality and injury. Construction-related ground disturbance (e.g., grading and excavation) and vehicle traffic may injure or kill individuals by crushing occupied dens/burrows/nests or running over individuals. Sound and vibration-related disruptions from construction activities may impair breeding, feeding, or sheltering behaviors.
- **Bats.** Rock outcrops adjacent to the proposed site of the RNG processing facility, and trees near ranch roads provide potential suitable roosting habitat for special status bat species. Rock outcrops would be avoided during construction activities; however, construction could have direct effects on roosting bats if they are present in any affected habitat. Removal and trimming of trees could destroy occupied roost sites, resulting in injury and mortality of adults and young.

Impacts on the special status wildlife species listed above would be addressed through participation in the HCP/NCCP and implementation of avoidance and minimization measures. Implementation of these mitigation measures would reduce impacts to less than significant levels.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Mitigation Measures

**Biology 1:** *HCP/NCCP Participation. The applicant shall participate in and receive take coverage under the HCP/NCCP and comply with all conditions of the take coverage. Prior to the issuance of grading or building permits, whichever occurs first, the applicant shall submit an HCP/NCCP application and associated fee worksheet to the CDD and the East Contra Costa County Habitat Conservancy (ECCCHC) for review and approval.*

*The temporary and permanent impacts to grassland habitats, jurisdictional waters and wetland resources shall require both temporary and permanent impact fees as defined by the current HCP/NCCP fee schedule at the time of application. Additionally, avoidance and minimization measures as required by the HCP/NCCP shall be implemented to minimize impacts to covered species and jurisdictional resources. The Certificate of Coverage will be issued to the applicant to confirm the fee has been received, that other HCP/NCCP requirements have been met or will be performed and will authorize take of covered species. Participation in the HCP/NCCP will fully satisfy requirements for addressing impacts to the California red-legged frog and California tiger salamander.*

**Biology 2:** *Burrowing Owl. To avoid and minimize impacts on burrowing owls and potential burrows the following measures shall be implemented.*

- *Preconstruction Surveys: Prior to any ground disturbance related to covered activities, a USFWS/CDFW–approved biologist shall conduct a preconstruction survey in areas identified in the planning surveys as having potential burrowing owl habitat. The surveys will establish the presence or absence of western burrowing owl and/or habitat features and evaluate use by owls in accordance with CDFW survey guidelines (California Department of Fish and Game 1995). Copies of the preconstruction surveys shall be submitted to the CDD, the ECCCHC, and CDFW.*

*On the parcel where the activity is proposed, the biologist shall survey the proposed disturbance footprint and a 500-foot radius from the perimeter of the proposed footprint to identify burrows and owls. Adjacent parcels under different land ownership will not be surveyed. Surveys shall take place near sunrise or sunset in accordance with CDFW guidelines. All burrows or burrowing owls shall be identified and mapped. Surveys shall take place no more than 30 days prior to construction. During the breeding season (February 1– August 31), surveys shall document whether burrowing owls are nesting in or directly adjacent to disturbance areas. During the nonbreeding season (September 1–January 31), surveys shall document whether burrowing owls are using habitat in or directly adjacent to any disturbance area.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*Survey results will be valid only for the season (breeding or nonbreeding) during which the survey is conducted.*

- *Avoidance and Minimization and Construction Monitoring:* *This measure incorporates avoidance and minimization guidelines from CDFW’s Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 1995).*

*If burrowing owls are found during the breeding season (February 1 – August 31), the applicant shall avoid all nest sites that could be disturbed by project construction during the remainder of the breeding season or while the nest is occupied by adults or young. Avoidance shall include establishment of a non-disturbance buffer zone (described below). Construction may occur during the breeding season if a qualified biologist monitors the nest and determines that the birds have not begun egg-laying and incubation or that the juveniles from the occupied burrows have fledged. During the nonbreeding season (September 1 – January 31), the applicant shall avoid the owls and the burrows they are using, if possible. Avoidance shall include the establishment of a buffer zone (described below).*

*During the breeding season, buffer zones of at least 250 feet in which no construction activities can occur shall be established around each occupied burrow (nest site). Buffer zones of 160 feet shall be established around each burrow being used during the nonbreeding season. The buffers shall be delineated by highly visible, temporary construction fencing. All buffers shall be shown on all sets of construction drawings.*

*If occupied burrows for burrowing owls are not avoided, passive relocation shall be implemented. Owls shall be excluded from burrows in the immediate impact zone and within a 160-foot buffer zone by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours prior to excavation. The project area shall be monitored daily for one week to confirm that the owl has abandoned the burrow. Whenever possible, burrows shall be excavated using hand tools and refilled to prevent reoccupation (California Department of Fish and Game 1995). Plastic tubing or a similar structure shall be inserted in the tunnels during excavation to maintain an escape route for any owls inside the burrow.*

**Biology 3: Golden Eagle.** *To avoid and minimize impacts on golden eagles the following measures shall be implemented.*

- *Preconstruction Survey:* *Prior to commencing with covered activities, a qualified biologist shall conduct a preconstruction survey to establish whether nests of golden eagles are occupied. If nests are occupied, minimization requirements and*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*construction monitoring will be required. Copies of the preconstruction survey shall be submitted to the CDD, the ECCCHC, and CDFW.*

- *Avoidance and Minimization: Covered activities shall be prohibited within 0.5 mile of active nests. Nests can be built and active at almost any time of the year, although mating and egg incubation occurs late January through August, with peak activity in March through July. If site-specific conditions or the nature of the covered activity (e.g., steep topography, dense vegetation, limited activities) indicate that a smaller buffer could be appropriate or that a larger buffer should be implemented, the applicant shall coordinate with CDFW/USFWS to determine the appropriate buffer size.*

*Construction Monitoring: Construction monitoring shall focus on ensuring that no covered activities occur within the buffer zone established around an active nest. Although no known golden eagle nest sites occur within or near the ULL, covered activities inside and outside of the HCP Preserve System designated in the HCP/NCCP have the potential to disturb golden eagle nest sites. Construction monitoring shall ensure that direct effects to golden eagles are minimized. All buffers shall be shown on all sets of construction drawings.*

**Biology 4:** *Nesting and Migratory Birds. To avoid and minimize impacts on nesting and migratory birds and to comply with the federal Migratory Bird Treaty Act pre-construction surveys shall be conducted and construction avoidance measures shall be implemented if necessary.*

- *Preconstruction Survey: Riparian vegetation, grassland habitats and trees shall be surveyed prior to commencing with covered activities to evaluate nesting bird habitat. If work is scheduled to take place between February 1 and August 31, a pre-construction nesting bird survey shall be conducted by a qualified biologist within 14 days of construction, covering a radius of 500 feet for non-listed raptors and 100 feet for non-listed passerines at all locations. Preconstruction surveys will need to be done in phases as work along the alignment will not be occurring concurrently. Copies of the preconstruction survey shall be submitted to the CDD, the ECCCHC, and CDFW.*

*Avoidance and Minimization: If an active bird nest is found within these buffers, species-specific measures shall be prepared by a qualified biologist and implemented to prevent abandonment of the active nest. If an active nest is present, a minimum exclusion buffer of 100 feet shall be maintained during construction, depending on the species and location. The perimeter of the nest setback zone shall be fenced or adequately demarcated with stakes and flagging at 20-foot intervals, and*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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construction personnel and activities restricted from the area. A survey report by a qualified biologist verifying that no active nests are present, or that the young have fledged, shall be submitted prior to initiation of grading in the nest-setback zone. The qualified biologist shall serve as a biological monitor during those periods when construction activities occur near active nest areas to ensure that no inadvertent impacts on these nests occur. All buffers shall be shown on all sets of construction drawings.

**Biology 5:** *American Badger.* To avoid and minimize impacts on American badgers the following measures shall be implemented.

- Preconstruction Survey: Prior to commencing with covered activities, a qualified biologist shall conduct a preconstruction survey, within the limits of proposed temporary and permanent impact in grassland and ruderal habitat, no less than 14 days before the beginning of ground disturbance or any activity likely to affect American badger. Copies of the preconstruction survey shall be submitted to the CDD, the ECCCHC, and CDFW.
- Avoidance and Minimization: If potential dens are present, their disturbance and destruction shall be avoided. If potential dens are located within the proposed work area and cannot be avoided during construction, a qualified biologist shall determine if the dens are occupied or were recently occupied using remote cameras or methodology coordinated with CDFW. If unoccupied, the qualified biologist shall collapse these dens by hand or shall request permission from CDFW to temporarily plug the burrow entrance with sandbags to prevent badgers from re-using them during construction. If occupied, the biologist shall consult with CDFW regarding best practices for encouraging the badger(s) to move to alternate dens outside the work areas.

**Biology 6:** *San Joaquin Kit Fox.* To avoid and minimize impacts on San Joaquin kit fox the following measures shall be implemented.

- Preconstruction Surveys: Prior to any ground disturbance related to covered activities, a USFWS/CDFW–approved biologist shall conduct a preconstruction survey in areas that support suitable breeding or denning habitat for San Joaquin kit fox. The surveys shall establish the presence or absence of San Joaquin kit foxes and/or suitable dens and evaluate use by kit foxes in accordance with USFWS survey guidelines (U.S. Fish and Wildlife Service 1999). Copies of the preconstruction surveys shall be submitted to the CDD, the ECCCHC, and CDFW.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*Preconstruction surveys shall be conducted within 30 days of ground disturbance. On the parcel where the activity is proposed, the biologist shall survey the proposed disturbance footprint and a 250-foot radius from the perimeter of the proposed footprint to identify San Joaquin kit foxes and/or suitable dens. Adjacent parcels under different land ownership will not be surveyed. The status of all dens shall be determined and mapped. Written results of preconstruction surveys shall be submitted to USFWS within five working days after survey completion and before the start of ground disturbance. Concurrence is not required prior to initiation of covered activities.*

*If San Joaquin kit foxes and/or suitable dens are identified in the survey area, the measures described below will be implemented.*

- *Avoidance and Minimization Requirements*
  - *If a San Joaquin kit fox den is discovered in the proposed development footprint, the den shall be monitored for three days by a USFWS/CDFW–approved biologist using a tracking medium or an infrared beam camera to determine if the den is currently being used.*
  - *Unoccupied dens shall be destroyed immediately to prevent subsequent use.*
  - *If a natal or pupping den is found, USFWS and CDFW shall be notified immediately. The den shall not be destroyed until the pups and adults have vacated and then only after further consultation with USFWS and CDFW.*
  - *If kit fox activity is observed at the den during the initial monitoring period, the den shall be monitored for an additional five consecutive days from the time of the first observation to allow any resident animals to move to another den while den use is actively discouraged. For dens other than natal or pupping dens, use of the den can be discouraged by partially plugging the entrance with soil such that any resident animal can easily escape. Once the den is determined to be unoccupied it may be excavated under the direction of the biologist. Alternatively, if the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant (i.e., during the animal’s normal foraging activities).*
- *Construction Monitoring*: *If dens are identified in the survey area outside the proposed disturbance footprint, exclusion zones around each den entrance or cluster of*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*entrances shall be demarcated. The configuration of exclusion zones shall be circular, with a radius measured outward from the den entrance(s). No covered activities shall occur within the exclusion zones. Exclusion zone radii for potential dens shall be at least 50 feet and shall be demarcated with four to five flagged stakes. Exclusion zone radii for known dens shall be at least 100 feet and shall be demarcated with staking and flagging that encircles each den or cluster of dens but does not prevent access to the den by kit fox. All exclusion zones shall be shown on all sets of construction drawings.*

**Biology 7: Special Status Bats.** *To avoid and minimize impacts on roosting bats the following measures shall be implemented:*

- *Focused Habitat Assessment: If trees along the access route or within the project site are to be removed a habitat assessment shall be conducted by a qualified bat biologist to determine if the subject trees have potential habitat.*
- *Preconstruction Surveys: If the project does not avoid impacts to suitable habitat for special status bats, a preconstruction survey shall be required to determine whether the sites are occupied immediately prior to construction or whether they show signs of recent previous occupation. Preconstruction surveys are used to determine what avoidance and minimization requirements are triggered before construction and whether construction monitoring is necessary. Copies of the preconstruction surveys shall be submitted to the CDD, the ECCCHC, and CDFW.*
- *Avoidance and Minimization: If the species is discovered or if evidence of recent prior occupation is established, construction shall be scheduled such that it minimizes impacts on special status bats. Hibernation sites with evidence of prior occupation shall be sealed before the hibernation season (November–March), and nursery sites shall be sealed before the nursery season (April–August). If the site is occupied, then the action shall occur either prior to or after the hibernation season for hibernacula and after August 15 for nursery colonies. Construction shall not take place as long as the site is occupied.*

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

As discussed in Environmental Checklist Section 4.a above, three SNCs were observed in the survey area: California match weed patches (State Rarity Rank S3, MCV2 Alliance 32.042.00),

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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California buckeye groves (State Rarity Rank S3, MCV2 Alliance 75.100.03), and gum plant patches (State Rarity Rank S2S3, MCV2 Alliance 52.206.01).

California Match Weed Patches

The nearest California match weed populations to the proposed project area are (1) at the proposed RNG processing facility to the north of the existing LFGTE plant; and (2) along the pipeline near existing rock outcrops (Figure 4-2). The proposed project would avoid all impacts to rock outcrops, in which case California match weed patches would be avoided as well. Thus, no impacts would occur to this SNC.

California Buckeye Groves

California buckeye groves are a SNC and buckeye individuals are County-protected trees. A California buckeye grove occurs in the SBA along the existing ranch road across from the mitigation wetland (Figure 4-2). At this location, the trees nearly or slightly overhang the road, and therefore, could be damaged by large project equipment. Sufficient tree limb damage could weaken the tree and potentially provide an entry point for pathogens, eventually resulting in tree death. Thus, **loss of one or more California buckeye trees would be a potentially significant impact during project construction.** Implementation of mitigation measure Biology 8 would reduce potential impacts to a less-than-significant level.

Gum Plant Patches

Gum plant patches occur along the pipeline route and access roads within the SBA (Figure 4-2) and could be impacted as a result of construction related activities. **Construction activities that result in direct disturbance to gum plant patches would be potentially significant impacts.** Implementation of mitigation measure Biology 9 would reduce potential impacts to less-than-significant levels.

Mitigation Measures

***Biology 8: Tree Pruning Overseen by Certified Arborist. Prior to any tree pruning and subject to CDD review, the applicant shall hire a Certified arborist to oversee and/or conduct any native-tree pruning required to access, construct, and implement the Project. Proposed removal of existing pepper trees at the proposed RNG Processing Facility shall be mapped and submitted to the CDD for review.***

***Biology 9: Develop Temporary Restoration Plan. Prior to the issuance of grading or building permits, whichever occurs first, the applicant shall develop a Temporary Restoration Plan to***

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*ensure the site is restored to pre-project conditions. This may include measures such as topsoil preservation per station segments and reseeding with native seed mixes. The Temporary Restoration Plan shall be submitted to the shall be submitted to the CDD and the ECCCHC for review and approval.*

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

A Preliminary Aquatic Resources Delineation (ARD) was completed by Swaim Biological Inc. for a study area that extended the length of the proposed pipeline and included an approximate 100-foot-wide corridor and an area around for the proposed new RNG processing facility.

The Aquatic Resources Delineation Area (ARDA) includes two drainages named Tributary to Willow Creek and seven additional unnamed drainages already mapped by the National Wetland Inventory (NWI) and/or Contra Costa County (Figure 4-5, Wetland Delineation Study Area) for a total of nine locations within the ARDA.

Based on field investigations, Locations 3, 4 and 9 are NWI- and/or County-mapped features that *do not actually occur* in the ARDA. Thus, the aquatic resources that do occur in the ARDA are located at the remaining six locations (Locations 1, 2, 5, 6, 7, and 8 on Figure 4-5). These locations are described in Table 4-3. The drainages are all tributary to Willow Creek, which is tributary to Suisun Bay, a Traditional Navigable Waters. All crossings are mapped by the NWI and/or County as Riverine drainages, but four of these crossings were delineated as seasonal wetlands (Locations 2, 5, 7, 8).

At the proposed RNG processing facility site there is an existing concrete canal and natural drainage that will be permanently impacted as part of the project at Location 1. The remaining locations occur along the pipeline alignment within the SBA (Locations 2, 5, 6) and the PG&E property (Location 7, 8).

Wetlands within the surveyed project area total approximately 0.429 acre (Location 1b, 2a, 2b, 2c, 5, 7 and 8), Other Waters total approximately 0.070 acre (Locations 1a, 1c, 2d, 6) and stream channels total approximately 550 linear feet (Locations 1a, 1c, 2d, and 6). The Locations are listed in Table 4-3.

At Location 2, the pipeline alignment will be trenched into the existing road where a headwater tributary crosses the ranch road. Currently, no culvert or other crossing exists at this location. Downstream of the ranch road there is evidence of channel erosion and scour. In order to protect the pipeline within the road crossing and address potential for upstream channel erosion and



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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headcutting, the applicant proposes to install in-stream stabilizations measures that will include exclusion of cattle (by fencing) from the road crossing to the confluence with another channel, trenching the pipeline into bedrock to reduce incision potential, and construction of a series of bio-engineered improvements (e.g. log drop-structures) to trap sediment and protect grade downstream of the road. The type, number, and precise location of these bio-engineered improvements will be determined and approved in permit documents to be issued by regulatory agencies.

**Table 4-3. Summary of Aquatic Resources Located in ARDA**

Feature Name		Aquatic Resource Type	Aquatic Resource Size (acre) Required for all resources	Aquatic Resource Size (linear feet) Required for only stream channels
Location 1 RNG Expansion Area	1a- Concrete Canal	Other Waters	0.013	140
	1b- Wetland Tributary	Wetland	0.035	
	1c- Drainage	Other Waters	0.006	135
Location 2	2a- Pipeline Crossing	Wetland [Tributary Seep]	0.042	
	2b- Cattle Pump	Wetland [Tributary Seep]	0.020	
	2c- Road Seep	Wetland [Tributary Seep]	0.050	
	2d- Log Jams	Intermittent Drainage	0.049	175
Location 5- Drainage Crossing		[Seasonal] Wetland	0.049	
Location 6- Buried Culvert		Other Waters	0.002	100
Location 7- Seasonal Wetland		[Seasonal] Wetland	0.033	
Location 8- Seasonal Wetland		[Seasonal] Wetland	0.200	
<b>ALL SITES</b>		<b>TOTAL</b>	<b>0.499 acre</b>	<b>550 linear feet</b>

Source: Swaim Biological Inc., October 2020

The applicant will need to submit the ARD to the ECCCHC as part of the Application and Planning Survey Report and as required to the U.S. Army Corps of Engineers, CDFW, and the Regional Water Quality Control Board (RWQCB). **Neglecting to submit the ARD to the HCP/NCCP and other permitting agencies would be a potentially significant impact.** Implementation of mitigation measure Biology 10 would reduce this potential impact to a less-than-significant level.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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In order to meet applicable State and federal wetlands requirements, the applicant will need to obtain necessary permits from the Army Corps, CDFW, and RWQCB. **Starting construction of the proposed project prior to obtaining the required permits would be a potentially significant impact.** Implementation of mitigation measure Biology 11 would reduce this potential impact to a less-than-significant level.

Mitigation Measures

**Biology 10:** *Aquatic Resources Delineation. In conjunction with Biology 1, the applicant shall submit the Aquatic Resources Delineation to the ECCCHC for review and approval, and as required, to the Army Corps, CDFW, and RWQCB.*

**Biology 11:** *Implement the Permit Conditions of the Aquatic Resource Agencies. Prior to commencing project construction, the applicant shall obtain required permits from the Army Corps, CDFW, and/or RWQCB. Avoidance, minimization, and compensation will be determined by these agencies. The agencies will set the permit conditions, which are likely to include onsite enhancement and monitoring of seeps and drainages to ensure groundwater and surface water interruptions do not occur as a result of the project. The applicant shall be responsible to implement the permit conditions, subject to oversight by the agencies.*

- d) *Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites? (Less than significant with mitigation)*

Wildlife movement corridors are linear features that contain natural habitat and provide connection between at least two larger adjacent open spaces. Wildlife movement corridors are large enough to support at least a natural habitat mosaic and viable populations of smaller terrestrial species, such as rodents, smaller carnivores (raccoons, skunks, foxes, and weasels), passerine birds, amphibians, reptiles, and invertebrates. Because a functional network of connected wildlands is essential to the continued support of California’s diverse natural communities, in 2010, CDFW and California Department of Transportation commissioned the California Essential Habitat Connectivity Project (CEHCP) to identify large, relatively natural habitat blocks that support native biodiversity and areas essential for ecological connectivity between them. The CEHCP included a statewide Essential Habitat Connectivity Map. According to this map the project area does not overlap with Essential Habitat Connectivity areas mapped under the statewide effort but is located within a roughly triangular patch of approximately 27,000 acres of undeveloped land between the Diablo Range and the northernmost foothills of Bay Point. This large undeveloped area is bounded by relatively vast acreages of CEHCP Important Baylands on the north, CEHCP Diablo Range on the east and south, and CEHCP Mt. Diablo Creek Riparian Corridor on the west. At the local level, the HCP/NCCP was designed to ensure that

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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habitat connectivity and wildlife corridors are identified and maintained as a de facto extension of the statewide mapping effort. The KCL-owned portion of the SBA encompasses approximately 750 acres of undeveloped land that is accessible by and amenable to the diffusion and dispersal of many species, with approximately 3.6 aerial miles of distance between the two nearest commuter roads: Bailey Road and Kirker Pass Road. Thus, the SBA is considered to be a wildlife movement corridor for this biological resources analysis.

Construction and operation of the proposed RNG processing facility and the Ameresco interconnect station at the PG&E valve lot would result in permanent changes to the built environment. Construction of the RNG processing facility would remove approximately 1.9 acres of a grassland drainage that otherwise could be used for concealed wildlife movement through the immediate area; however, this impact would be minimal due to the proximity of this location to existing residential development in the City of Pittsburg, and the operation of landfill industrial facilities in this area. The value of this area for wildlife movement is minimal. Further, there is a substantial remaining amount of undeveloped land available within the approximately 750- acre SBA and surrounding undeveloped adjacent lands for continued wildlife movement through and around this area. The permanent impacts of construction of the proposed Ameresco interconnect station near the existing PG&E valve lot will result in loss of approximately 0.16 acres of ruderal habitat immediately adjacent to other developed facilities and adjacent residential development. **Loss of this grassland and ruderal habitat would be a potentially significant impact.** Implementation of mitigation measures **Biology 1** and **Biology 11** would reduce the impact to a less-than-significant level.

Pipeline construction in the SBA would result in a temporary reduction in acreage that may result in disturbance of free movement for wildlife. This impact would be considered to be minimal due to project construction in a linear sequence across the SBA, and the vast remaining amount of undeveloped land available for continued wildlife movement through the project area. As the four-inch diameter pipeline is to be buried underground, project operation and routine maintenance would not impact the SBA's value as a wildlife movement corridor in the long term.

Ground disturbances of the SBA associated with construction activities could cause temporary impacts to wildlife movements. Wildlife would have the ability to move around or avoid the construction work areas given the availability of open space within the SBA and adjacent properties. The disturbances associated to wildlife corridors would be temporary and limited to the construction timeframe of the project. Thus, construction related impacts associated with pipeline construction would have a less than significant impact on species movements or migratory corridors.

- e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (Less than significant with mitigation)*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The Contra Costa County Tree Protection and Preservation Ordinance provides for the protection of certain trees by regulating tree removal while allowing for reasonable development of private property. The Ordinance applies to any designated open space areas or visually significant riparian or ridge line vegetation and where tree removal is proposed adjacent to or part of a riparian, foothill woodland or oak savanna area. Any protected tree to be cut down, destroyed or trimmed by topping requires a permit. Within the project area this ordinance would apply to the tree removal at the proposed RNG processing facility site and the potential for tree trimming within the SBA.

RNG Processing Facility

Trees to be removed within the proposed RNG processing facility site include eight pepper trees. A map showing trees planned for removal will be submitted to the County prior to construction activities commence as part of the County’s criteria for tree protection and preservation in accordance with Biology 8 to determine if any of the pepper trees planned to be removed at the project site for the RNG processing facility meet the County’s criteria for tree protection and preservation.

Special Buffer Area

Trees protected by the Tree Protection and Preservation Ordinance are present in the SBA; however, no tree removal in the SBA will occur during implementation of the proposed Project. California buckeye trees are present adjacent to the access route (Figure 4-2). These trees canopies extend into the access road that may require trimming to accommodate large equipment access. These trees are protected under the Ordinance as they are an indigenous tree, and the California Buckeye Grove is a CDFW protected Sensitive Natural Community. **The trimming of Code-protected trees within the California Buckeye Grove during construction would be a potentially significant impact.** Implementation of mitigation measure **Biology 8** would reduce potential impacts to a less-than-significant level.

- f) *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (Less than significant with mitigation)*

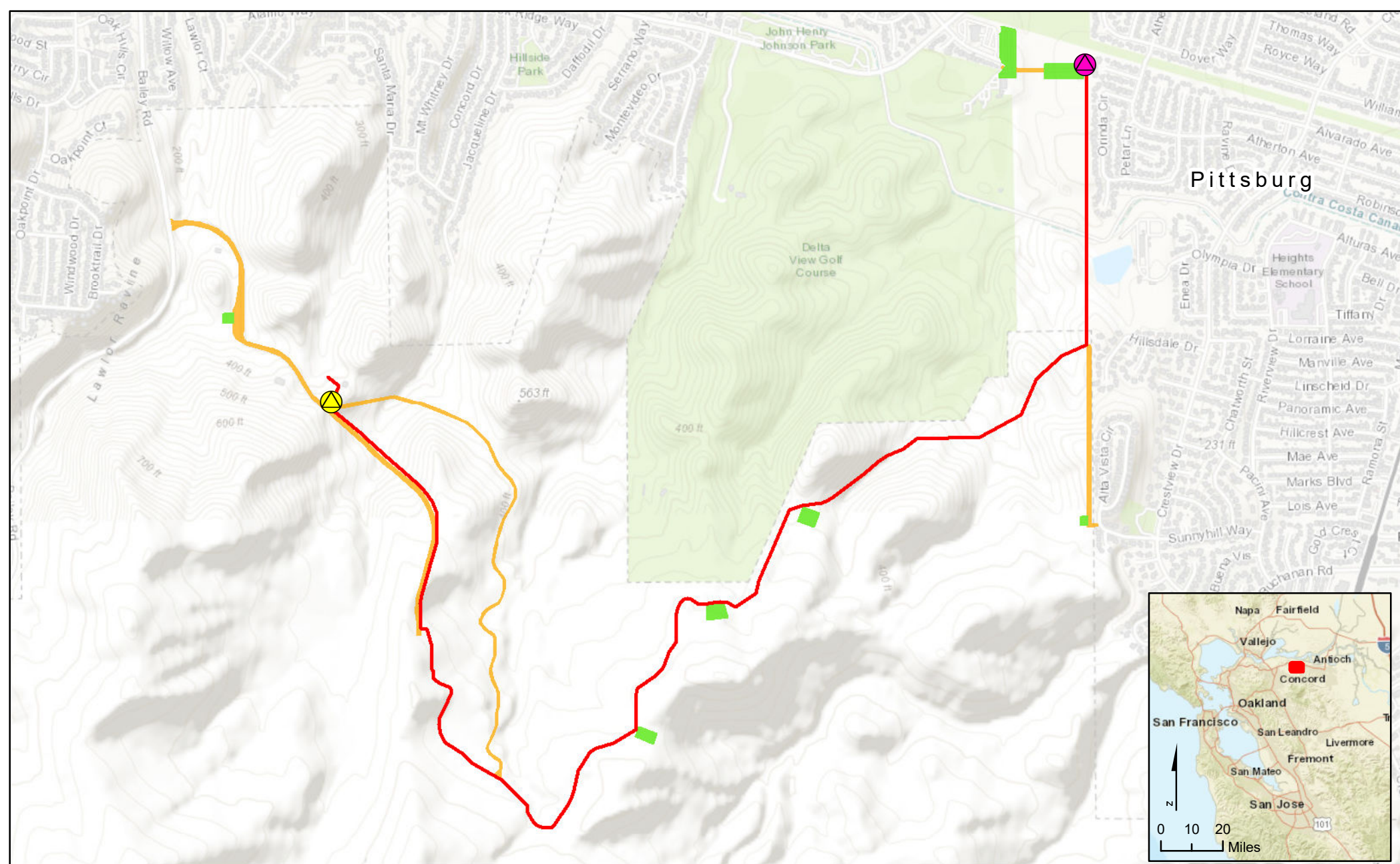
There is one adopted habitat conservation plan in Contra Costa County, the East Contra Costa County Habitat Conservation Plan / Natural Community Conservation Plan, which was approved in May 2007 by the East Contra Costa County Habitat Conservancy. The ECCCHC is a joint exercise of powers authority formed by the Cities of Brentwood, Clayton, Oakley, Pittsburg, and Contra Costa County to implement the HCP/NCCP. The HCP/NCCP establishes a coordinated process for






Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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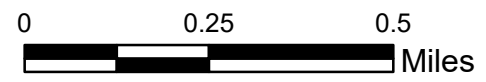
permitting and mitigating the incidental take of endangered species in eastern Contra Costa County. Because the proposed project is subject to the HCP/NCCP, the applicant would need to submit an HCP/NCCP application and a Planning Survey Report to HCP/NCCP staff for review and approval. **Non-compliance with HCP/NCCP regulations, requirements, and procedures would be a potentially significant impact.** Implementation of mitigation measure **Biology 1** would reduce this potential impact to a less than significant level.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project.*
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project.*
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description.*
- Swaim Biological Inc. et al., 2020. *Biological Resources - Ameresco IS-MND Section 4.*
- Contra Costa County Code, Title 8. Zoning Ordinance.
- <https://www.contracosta.ca.gov/depart/cd/water/HCP/>, 2020. *East Contra Costa County Habitat Conservancy.*
- <https://www.fws.gov/sacramento/es/Habitat-Conservation-Plans/>, 2020. *Habitat Conservation Plans, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office.*



-  RNG Processing Facility
-  Metering Station
-  Pipeline Alignment
-  Access Road
-  Laydown/Staging/Storage Area

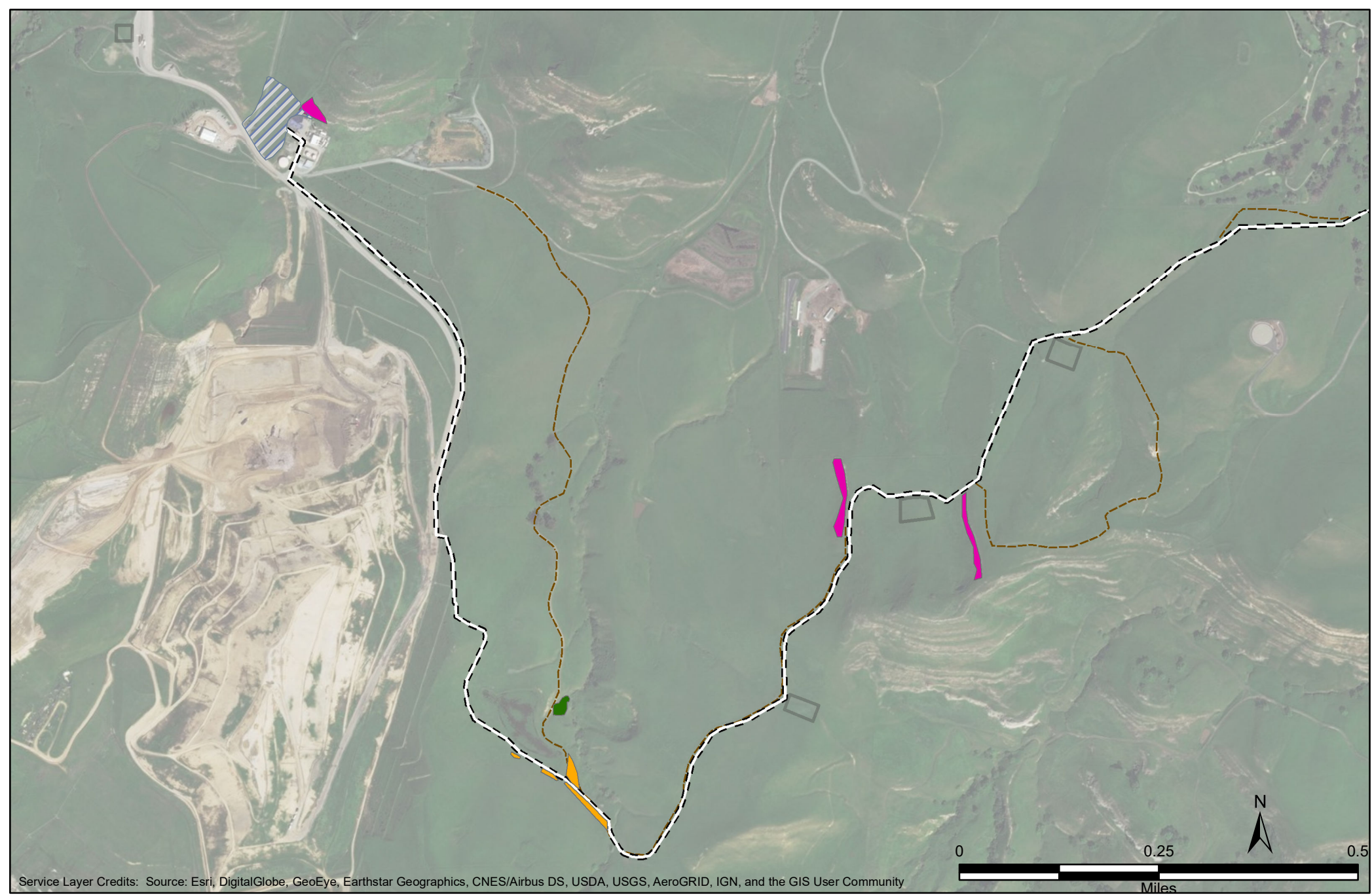


Ameresco Keller Canyon LLC  
 RNG Processing Facility and  
 Pipeline Project  
 September 2020

Figure 4-1 Pipeline Workspace,  
 Access and Staging







Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

- California buckeye SNC
- California matchweed SNC
- Grindelia SNC
- Laydown/Storage Options
- RNG Processing Facility
- Final Proposed Alignment
- Existing gravel road
- Existing dirt ranch road

**Ameresco Keller Canyon LLC**  
**RNG Processing Facility and Pipeline Project**  
**Figure 4-2: Mapped Sensitive Natural Communities**

Table 4-1. Special Status Plant Species with Potential to Occur in the Project Area

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Amsinckia grandiflora</i>	large-flowered fiddleneck	FE	SE	1B.1	Cismontane woodland, Valley and foothill grassland	<b>Moderate.</b> Suitable grassland habitat present. There are historical records more than five miles to the east in the Antioch area and two CNDDDB records within five miles of the project site. Both are locations of reintroduction on East Bay Regional Park District's Black Diamond Mines property; one population approximately four miles away is extirpated and the other record approximately three miles away is considered extant. This species is an East Contra Costa County HCP/NCCP No Take plant species; habitat was not mapped under the HCP/NCCP.
<i>Androsace elongata ssp. acuta</i>	California androsace			4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland	<b>Low.</b> Suitable grassland habitat present but no chaparral or scrub habitat. Observations in Contra Costa County limited to Mt. Diablo area.
<i>Anomobryum julaceum</i>	slender silver moss			4.2	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	<b>None.</b> No habitat suitable to support this species is present.
<i>Arabis blepharophylla</i>	coast rockcress			4.3	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Arctostaphylos auriculata</i>	Mt. Diablo manzanita			1B.3	Chaparral (sandstone), Cismontane woodland; occurs primarily in chamise or manzanita chaparral. It can also be found as an understory shrub in coast live oak woodland	<b>None.</b> No habitat suitable to support this species is present. There are five presumed extant CNDDDB records within five miles of the project location. Species is an HCP/NCCP Covered Species and is not within modeled suitable habitat.
<i>Arctostaphylos manzanita ssp. laevigata</i>	Contra Costa manzanita			1B.2	Chaparral (rocky)	<b>None.</b> No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Astragalus tener</i> <i>var. tener</i>	alkali milk-vetch			1B.2	Playas, Valley and foothill grassland (adobe clay), Vernal pools, occurs in wetlands, occasionally not in wetlands.	<b>Low.</b> Suitable grassland habitat with clay soils present. This species is an HCP/NCCP no take plant species; habitat was not mapped under the HCP/NCCP.
<i>Atriplex cordulata</i> <i>var. cordulata</i>	heartscale			1B.2	Chenopod scrub (most commonly on fine-textured, alkaline and/or saline soils in areas of impeded drainage), Meadows and seeps, Valley and foothill grassland (sandy)	<b>Very Low.</b> Suitable grassland habitat present however alkaline/saline soils were not observed. Sandy habitat present near rock outcrops however impacts to rock outcrops will be avoided.
<i>Atriplex coronata</i> <i>var. coronata</i>	crownscale			4.2	Chenopod scrub (most commonly on fine-textured, alkaline and/or saline soils in areas of impeded drainage), Valley and foothill grassland, Vernal pools, occurs occasionally in wetlands, occasionally non wetlands	<b>Very Low.</b> Suitable grassland habitat present however alkaline/saline soils were not observed.
<i>Atriplex depressa</i>	brittlescale			1B.2	Chenopod scrub (most commonly on fine-textured, alkaline and/or saline soils in areas of impeded drainage), Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools; occurs on alkali soils of the Pescadero and Solano series. Typically occurs in barren areas within alkali grassland, alkali meadow, and alkali scrub. It is occasionally found on the margins of alkali vernal pools.	<b>Very Low.</b> Suitable grassland habitat present however alkaline/saline soils were not observed. Species is an HCP/NCCP Covered Species and is not within modelled suitable habitat.



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Blepharizonia plumosa</i>	big tarplant			1B.1	Valley and foothill grassland	<b>Moderate.</b> Suitable grassland habitat present. There are eight CNDDDB records within five miles of the project site; one record is presumed extirpated, the remaining are presumed extant. The two closest records are approximately 1 and 2 miles away, are historic records and presumed extant. Species is an HCP/NCCP Covered Species and is within modeled suitable habitat.
<i>Calandrinia breweri</i>	Brewer's calandrinia			4.2	Chaparral, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>California macrophylla</i>	round-leaved filaree			CBR	Cismontane woodland, Valley and foothill grassland; occurs in grasslands on friable clay soils	<b>Moderate.</b> Suitable grassland habitat with clay soils is present. Species is an HCP/NCCP Covered Species and is not within modeled suitable habitat.
<i>Calochortus pulchellus</i>	Mt. Diablo fairy-lantern			1B.2	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland; grows on grassy slopes and in openings in chaparral and oak woodland communities	<b>Low to Moderate.</b> Suitable grassland habitat present but intact chaparral, riparian or cismontane woodland is not. There are three presumed extant CNDDDB records within five miles. The nearest record is approximately 3.5 miles away, in East Bay Regional Park District's Black Diamond Mine's property and was observed in 2003. The species is an HCP/NCCP No Take species. Portions of the project site are within HCP/NCCP modeled suitable habitat.
<i>Campanula exigua</i>	chaparral harebell			1B.2	Chaparral (rocky, usually serpentinite)	<b>None.</b> Minimal habitat suitable to support this species is present, and rock outcrops will be avoided.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Castilleja ambigua</i> var. <i>ambigua</i>	johnny-nip			4.2	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins	<b>Low.</b> Suitable grassland habitat present but coastal scrub and marshes/swamps are not. All Contra Costa County records are in the west county associated with salt marsh habitats.
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant			1B.1	Valley and foothill grassland (alkaline)	<b>Very Low.</b> Suitable grassland habitat present however alkaline soils/grassland was not observed within the project area. All known records in Contra Costa County are in the southwestern portion.
<i>Chloropyron molle</i> ssp. <i>molle</i> [formerly <i>Cordylanthus mollis</i> ssp. <i>mollis</i> ]	soft bird's-beak	FE	SR	1B.2	Marshes and swamps (coastal salt)	<b>None.</b> No habitat suitable to support this species is present. There are two CNDDDB records within five miles of the property. Both records occur within saltwater marsh habitat along Suisun Bay/Sacramento Delta.
<i>Cicuta maculata</i> var. <i>bolanderi</i>	Bolander's water-hemlock			2B.1	Marshes and swamps Coastal, fresh or brackish water	<b>None.</b> No habitat suitable to support this species is present. There are two CNDDDB records within five miles of the property. Both records occur within saltwater marsh habitat along Suisun Bay/Sacramento Delta.
<i>Collomia diversifolia</i>	serpentine collomia			4.3	Chaparral, Cismontane woodland	<b>None.</b> No habitat suitable to support this species is present.
<i>Convolvulus simulans</i>	small-flowered morning-glory			4.2	Chaparral (openings), Coastal scrub, Valley and foothill grassland, seeps, strong indicator of alkaline soils	<b>Low.</b> Suitable grassland present but alkaline soils not observed.
<i>Cordylanthus nidularius</i>	Mt. Diablo bird's-beak		SR	1B.1	Chaparral (serpentinite)	<b>None.</b> Minimal habitat suitable to support this species is present, and rock outcrops will be avoided.
<i>Cryptantha hooveri</i>	Hoover's cryptantha			1A	Inland dunes, Valley and foothill grassland (sandy)	<b>Very low.</b> Presumed to be extinct.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Delphinium californicum</i> ssp. <i>interius</i>	Hospital Canyon larkspur			1B.2	Chaparral (openings), Cismontane woodland (mesic), Coastal scrub	<b>None.</b> No habitat suitable to support this species is present. There is one CNDDDB record within five miles of the property. The record is mapped to approximate location near Mt. Diablo as exact location is unknown.
<i>Delphinium recurvatum</i>	recurved larkspur			1B	Alkaline soils in chenopod scrub, cismontane woodland, and valley and foothill grassland	<b>Very low.</b> Suitable grassland habitat present however alkaline soils/grassland was not observed within the project site. All known records in Contra Costa County are in the southwestern portion. This species is an HCP/NCCP Covered Species; the project site is not within modeled suitable habitat.
<i>Eleocharis parvula</i>	small spikerush			4.3	Marshes and swamps	<b>None.</b> No habitat suitable to support this species is present.
<i>Eriastrum ertterae</i>	Lime Ridge eriastrum			1B.1	Chaparral (openings or edges)	<b>None.</b> No habitat suitable to support this species is present.
<i>Eriogonum truncatum</i>	Mt. Diablo buckwheat			1B.1	Chaparral, Coastal scrub, Valley and foothill grassland	<b>Low to Moderate.</b> Suitable grassland habitat present although chaparral/scrub does not occur within the project location. There are two CNDDDB records within five miles of the project. One is historic and presumed extirpated. The other is from 2016 and observed at East Bay Regional Park District's Black Diamond Mines property; found in grassland on highly erosive soils. This species is an HCP/NCCP No Take plant species; habitat was not mapped under the HCP/NCCP.
<i>Eriophyllum jepsonii</i>	Jepson's woolly sunflower			4.3	Chaparral, Cismontane woodland, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Eryngium jepsonii</i>	Jepson's coyote thistle			1B.2	Valley and foothill grassland, Vernal pools, occurs in wetlands.	<b>Low.</b> Suitable grassland habitat but vernal pool/wetland habitat not observed within project location. There is one presumed extant record from 1998 in East Bay Regional Park District's Black Diamond Mines property, located in moist soil but exact location is unknown.
<i>Erysimum capitatum var. angustatum</i>	Contra Costa wallflower	FE	SE	1B.1	Inland dunes	<b>None.</b> No habitat suitable to support this species is present. There is one CNDDDB record that is presumed extant but is identified as transplanted outside of its native/habitat range on Brown's Island.
<i>Eschscholzia rhombipetala</i>	diamond-petaled California poppy			1B.1	Valley and foothill grassland (alkaline, clay)	<b>Low to Moderate.</b> Suitable grassland habitat present and clay soils observed. Alkaline habitat not observed within project extent. This species is an HCP/NCCP No Take plant species; habitat was not mapped under the HCP/NCCP.
<i>Extriplex joaquinana</i>	San Joaquin spearscale			1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools; typically occurs in alkali grassland and alkali meadow, or on the margins of alkali scrub. It occurs on clay soils, often in areas of high alkalinity.	<b>Low.</b> Suitable grassland habitat and clay soils present however alkaline soil conditions not observed. There is one CNDDDB record within five miles of the project in Concord, is based on a museum specimen and is possibly extirpated. This species is an HCP/NCCP Covered Species; habitat was not mapped under the HCP/NCCP.
<i>Fritillaria agrestis</i>	stinkbells			4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland	<b>Low.</b> Suitable grassland habitat present however chaparral and woodland habitats not present
<i>Fritillaria liliacea</i>	fragrant fritillary			1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland	<b>Low.</b> Suitable grassland habitat present however woodland habitats not present

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Galium andrewsii ssp. gatense</i>	phlox-leaf serpentine bedstraw			4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest	<b>None.</b> No habitat suitable to support this species is present.
<i>Grimmia torenii</i>	Toren's grimmia			1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	<b>None.</b> No habitat suitable to support this species is present.
<i>Helianthella castanea</i>	Diablo helianthella			1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. with thin, rocky, well-drained soils. It is found in grassy openings in woodlands, chaparral, and coastal scrub, often at the transition zone between woodland and chaparral	<b>Low.</b> Suitable grassland present but woodland and chaparral habitats not present. There are six presumed extant CNDDDB records within five miles of the property, all located on East Bay Regional Park District's Black Diamond Mines property and associated with woodland/grassland ecotone habitats. Species is an HCP/NCCP Covered Species and is not within modeled suitable habitat.
<i>Hesperolinon breweri</i>	Brewer's western flax (aka Brewer's dwarf flax by HCP/NCCP)			1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; grows on rocky soils on serpentine, sandstone, or volcanic substrates. It is associated with grassland, oak woodland, and chaparral communities. It typically appears in areas with low vegetative cover, such as the transition zone between grassland and chaparral or open areas in chaparral	<b>Low to Moderate.</b> Suitable grassland and sandstone habitat is present in the form of rock outcrops. Intact woodland and chaparral habitats are not present. There is one presumed extant CNDDDB record within five miles of the property, located on East Bay Regional Park District's Black Diamond Mines property. Species is an HCP/NCCP covered species. Low potential suitable habitat is modelled near the project impact locations.
<i>Lasthenia conjugens</i>	Contra Costa goldfields	FE		1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools	<b>Low.</b> Suitable grassland habitat present although alkaline habitat and vernal pools not observed. There are two extirpated CNDDDB records and no extant records within five miles of the project impact locations. This species is an HCP/NCCP No Take species; habitat was not mapped under the HCP/NCCP.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Lathyrus jepsonii</i> <i>var. jepsonii</i>	Delta tule pea			1B.2	Marshes and swamps (freshwater and brackish)	<b>None.</b> No habitat suitable to support this species is present. There are 16 presumed extant CNDDDB records within five miles of the project location; however, all occurrences are within the bay/salt marsh habitat.
<i>Lilaeopsis masonii</i>	Mason's lilaeopsis		SR	1B.1	Marshes and swamps (brackish or freshwater), Riparian scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Limosella australis</i>	Delta mudwort			2B.1	Marshes and swamps (freshwater or brackish), Riparian scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Madia radiata</i>	showy golden madia			1B.1	Cismontane woodland, Valley and foothill grassland; Primarily occupies open grassland or grassland on edge of oak woodland	<b>Low to Moderate.</b> Suitable grassland habitat present throughout project impact locations; intact oak woodland not present although there are scattered oaks near Crossing 11. There is one CNDDDB record identifying historical records as located "near Antioch". This species is an HCP/NCCP Covered Species; habitat was not mapped under the HCP/NCCP
<i>Malacothamnus hallii</i>	Hall's bush-mallow			1B.2	Chaparral, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Monolopia gracilens</i>	woodland woollythreads			1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland	<b>Low.</b> Suitable grassland present however chaparral and intact woodland habitat was not observed.
<i>Navarretia gowenii</i>	Lime Ridge navarretia			1B.1	Chaparral	<b>None.</b> No habitat suitable to support this species is present.
<i>Navarretia heterandra</i>	Tehama navarretia			4.3	Valley and foothill grassland (mesic), Vernal pools	<b>Low.</b> Suitable grassland present however vernal pools habitat was not observed.



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	adobe navarretia			4.2	Valley and foothill grassland vernal mesic, Vernal pools sometimes; occurs in heavy clay soils of vernal pools and other low, seasonally moist areas in grasslands	<b>Low to Moderate.</b> Suitable grassland and clay soils present, along with seepy areas. This species is an HCP/NCCP Covered Species; habitat was not mapped under the HCP/NCCP.
<i>Navarretia nigelliformis</i> ssp. <i>radians</i>	shining navarretia			1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	<b>Low.</b> Suitable grassland present however vernal pool habitat was not observed.
<i>Oenothera deltoides</i> ssp. <i>howellii</i>	Antioch Dunes evening-primrose	FE	SE	1B.1	Inland dunes	<b>None.</b> No habitat suitable to support this species is present. There are three presumed extant CNDDDB records within five miles of the property. Two records are from transplants outside of native habitat/range on Brown's Island and the other is near Lime Ridge.
<i>Phacelia phacelioides</i>	Mt. Diablo phacelia			1B.2	Chaparral, Cismontane woodland	<b>None.</b> No habitat suitable to support this species is present.
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup			4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools	<b>Low.</b> Suitable grassland habitat present however intact woodland or vernal pool habitat were not observed.
<i>Sanicula saxatilis</i>	rock sanicle		SR	1B.2	Rocky, scree, and talus slopes within Broadleafed upland forest, Chaparral, Valley and foothill grassland	<b>Low.</b> Suitable grassland habitat and rock outcrops present; chaparral habitat not observed. Scree and talus slopes not observed.
<i>Senecio aphanactis</i>	chaparral ragwort			2B.2	Chaparral, Cismontane woodland, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i>	most beautiful jewelflower			1B.2	Serpentine. Chaparral, Cismontane woodland, Valley and foothill grassland	<b>Low.</b> Suitable grassland present however serpentine habitat was not observed.
<i>Streptanthus hispidus</i>	Mt. Diablo jewelflower			1B.3	Rocky. Chaparral, Valley and foothill grassland	<b>Low.</b> Suitable grassland and rock outcrops present however chaparral habitat was not observed.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence
		FESA	CESA/ NPPA	CRPR		
<i>Stuckenia filiformis ssp. alpina</i>	slender-leaved pondweed			2B.2	Marshes and swamps (assorted shallow freshwater)	<b>None.</b> No habitat suitable to support this species is present.
<i>Symphotrichum lentum</i>	Suisun Marsh aster			1B.2	Marshes and swamps (brackish and freshwater)	<b>None.</b> No habitat suitable to support this species is present.
<i>Trifolium hydrophilum</i>	saline clover			1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools	<b>None.</b> No habitat suitable to support this species is present.
<i>Triquetrella californica</i>	coastal triquetrella			1B.2	Coastal bluff scrub, Coastal scrub	<b>None.</b> No habitat suitable to support this species is present.
<i>Tropidocarpum capparideum</i>	caper-fruited tropidocarpum			1B.1	Valley and foothill grassland (alkaline hills)	<b>Low.</b> Suitable grassland habitat present but alkaline habitat not observed within project impact location. There is one presumed extant CNDDDB record that is based on museum specimen collected in Clayton. This species is an HCP/NCCP No Take Species; habitat was not mapped under the HCP/NCCP
<i>Viburnum ellipticum</i>	oval-leaved viburnum			2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	<b>None.</b> No habitat suitable to support this species is present.

\*Status:

Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed for listing as Endangered, (FPT) Federally Proposed for listing as Threatened, (FPD) Federally proposed for delisting, (FC) Federal candidate species

California Endangered Species Act (CESA) / Native Plant Protection Act (NPPA) Designations: (SE) State Endangered, (ST) State Threatened, (SCE) Candidate Endangered, (SCT) Candidate Threatened, (SR) State Rare.

California Native Plant Society (CNPS) Rare Plant Rank (CRPR): (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list.

Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

\*\*Species list developed from CNDDDB Records, IPaC species list, HCP/NCCP species accounts and CNPS Rare Plant Inventory.

Table 4-2. Special Status Species with the Potential to Occur within the Project Area

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
Invertebrates						
<i>Apodemia mormo langei</i>	Lange's metalmark butterfly	FE			Riverbank sand dunes; host is <i>Eriogonum latifolium ssp. auriculatum</i>	<b>Not Expected.</b> No habitat suitable to support this species is present. There is one CNDDDB record within five miles of the project although there is no information in the record regarding habitat or observation details.
<i>Bombus crotchii</i>	Crotch's bumblebee		SCE		Grassland and scrub habitats with wildflower foraging habitat; occurs at relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert	<b>Not expected.</b> While suitable habitat is present and the project site is within the historical range of the species, it is not within the known contemporary range of the species (Xerces 2018). There is one presumed extant CNDDDB record from a 1926 historical record mapped in Antioch.
<i>Bombus occidentalis occidentalis</i>	western bumble bee, southern subspecies	-	SCE	-	Wet/moist meadows with abundant floral resources, roadside areas, and other areas containing forage species preferred by bumble bees (USFS, 2018).	<b>Not expected.</b> Current California populations are mostly restricted to high elevation sites in the Sierra Nevada, though there have been a couple of observations of this species on the northern California coast (Xerces Society 2018). May occur in grassland and scrub areas and forest openings. The project site is not within the known contemporary range of the species (Xerces 2018). There are two presumed extant CNDDDB records from collections in the area.



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Callophrys mossii bayensis</i>	San Bruno elfin butterfly	FE			Occurs in coastal grassy mountainous areas near San Francisco Bay. Located on steep northfacing slopes above 500' elevation that contain populations of host plant; <i>Sedum spathulifolium</i> . Uses a variety of nectar plants occurring in upper elevation grasslands and scrub.	<b>Not Expected.</b> No habitat suitable to support this species is present.
<i>Desmocerus californicus dimorphus</i>	valley elderberry longhorn beetle	FT			Elderberry shrubs over 1" diameter in riparian and upland habitats in the Central Valley up to 3000 ft elevation	<b>Not Expected.</b> No elderberry shrubs observed. No habitat suitable to support this species is present.
<i>Elaphrus viridis</i>	Delta green ground beetle	FT			Associated with vernal pool complexes and areas adjacent to other seasonal wetlands in the grassland land cover type. The beetle is only known to occur in areas with high clay-content soils.	<b>Not expected.</b> Vernal pool complexes not observed during surveys.
<i>Speyeria callippe callippe</i>	callippe silverspot butterfly	FE			Grasslands supporting its host plant, <i>Viola pedunculata</i> . Uses a variety of nectar plant species found in grassland and coastal scrub communities. Ridgelines and hilltops are an important habitat component.	<b>Not expected.</b> Grassland habitat is present however the property is outside of the known range of the species.
Crustaceans						
<i>Branchinecta conservatio</i>	Conservancy fairy shrimp	FE			Found in vernal pools that form in depressions in grassland habitats and ditches in the Central Valley, Solano, and Sacramento counties.	<b>Not expected.</b> Vernal pool complexes not observed during surveys. No known records within Contra Costa County or within five miles of the property.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Branchinecta lynchi</i>	vernal pool fairy shrimp	FT			Usually associated with vernal pools but can also be found in association with other ephemeral habitats including alkali pools, seasonal drainages, stock ponds, vernal swales, rock outcrops, and artificially created ephemeral habitats (e.g. roadside ditches and depressions in firebreaks)	<b>Not expected.</b> Vernal pool complexes not observed during surveys however rock outcrops are present on the property but will be avoided during project impacts. There is one CNDDDB occurrence 3.8 miles from the property. The extant record is from 1999 where a population was observed during a construction project.
<i>Lepidurus packardii</i>	vernal pool tadpole shrimp	FE			Occur in ephemeral freshwater habitats, including alkaline pools, clay flats, vernal lakes, vernal pools, vernal swales, and other seasonal wetlands	<b>Not expected.</b> Vernal pool complexes not observed during surveys. One known record in Contra Costa County and no records within five miles of the property.
Fishes						
<i>Pogonichthys macrolepidotus</i>	Sacramento perch			SSC	Native to California, usually found in warm reservoirs and ponds where summer temperature range from 18-28°C	<b>None.</b> No habitat suitable to support this species is present.
<i>Hypomesus transpacificus</i>	Delta Smelt	FT	SE		Endemic to California; occurs only in the brackish and freshwaters of the Sacramento-San Joaquin River Delta. Exhibits seasonal migration within the estuary, moving upstream before spawning.	<b>None.</b> No habitat suitable to support this species is present.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Oncorhynchus mykiss irideus</i>	Steelhead	FT			Anadromous. Tributary streams to Suisun Marsh including Suisun Creek; Green Valley Creek; and an unnamed tributary to Cordelia Slough (commonly referred to as Red Top Creek). Adults need access to natal streams; eggs and fry need cool water with adequate dissolved oxygen; clean gravel; juveniles migrate out to the ocean.	<b>None.</b> No habitat suitable to support this species is present. There is one CNDDDB record from the Delta within five miles of the project location.
<i>Pogonichthys macrolepidotus</i>	Sacramento splittail			SSC	Confined to the Delta; Suisun Bay and associated marshes and estuarine environments; slow moving rivers sections; dead end sloughs; requires flooded vegetation for spawning and foraging for young;	<b>None.</b> No habitat suitable to support this species is present.
<i>Spirinchus thaleichthys</i>	longfin smelt	FC	ST		Pelagic estuarine fish found in the San Francisco Bay Delta	<b>None.</b> No habitat suitable to support this species is present. There are five CNDDDB record from the Delta within five miles of the project location.
<b>Amphibians</b>						
<i>Ambystoma californiense</i>	California tiger salamander	FT	ST		Ponds and vernal pools in grassland; and oak woodland.	<b>Moderate to High.</b> Grassland with rodent burrows provide suitable upland habitat. Suitable breeding habitat present adjacent to impact locations. There are 22 CNDDDB records within five miles of the property; the closest record is 0.3 miles away where 50 juveniles were observed in a mitigation pond on the landfill property in May 1995; however, this mitigation pond has failed to



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
						hold water on a regular basis (Republic staff, personal communication). The property is mapped as HCP/NCCP modeled suitable migration and upland habitat.
<i>Rana boylei</i>	Foothill yellow-legged frog; West/Central Clade		SE		Streams and rivers with rocky substrates and sunny banks in forests, chaparral, and woodlands at elevations from 0' – 6,000'. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools.	<b>Not expected.</b> Streams within the impact areas are ephemeral, lack rocky substrate and cover and do not provide suitable habitat. There are no CNDDDB records within a 5-mile radius of the project site. Streams within the property are mapped as HCP/NCCP modeled suitable low use habitat.
<i>Rana draytonii</i>	California red-legged frog	FT		SSC	Requires slow moving or still water for juvenile development. Occurs in freshwater marshes; stock ponds; and riparian habitats. May aestivate in rodent burrows or cracks during dry periods.	<b>Moderate to High.</b> Grassland with rodent burrows, seasonal wetlands and seeps that provide suitable upland and wet refugia habitat. Suitable breeding habitat present adjacent to impact locations. The created wetlands have the closest CNDDDB record; a juvenile observed in 2000. There are 13 CNDDDB records within five miles of the property. The property is mapped as HCP/NCCP modeled potential migration and upland habitat and the adjacent tributary stream within the SBA is mapped as potential breeding habitat.
<b>Reptiles</b>						
<i>Anniella pulchra</i>	Northern California legless lizard (aka Silvery legless lizard in HCP/NCCP)			SSC	Occurs in moist warm loose soil with plant cover in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with sycamores, cottonwoods, or oaks.	<b>Low.</b> Potential habitat is present within creek habitat and at sandy soils located near rock outcrops but is outside of the known range of the species. The property is not mapped as HCP/NCCP suitable habitat.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Arizona elegans occidentalis</i>	California glossy snake			SSC	Inhabits arid scrub, rocky washes, grasslands, chaparral. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing.	<b>Low.</b> Scrub habitat is present on slopes near the RFG processing facility and within the SBA, however, the project location is outside of the known range of the species.
<i>Emys marmorata</i>	western pond turtle			SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams & irrigation ditches, usually with aquatic vegetation. Need basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5km from water for egg laying.	<b>Low.</b> Suitable pond habitat is present within the SBA in the created wetland and livestock ponds, and suitable egg-laying habitat surrounds these features. Project impact locations are not adjacent to these areas so impacts to breeding habitat are unlikely. There are four CNDDDB records within five miles of the property. The nearest record is 3 miles away to the east in a pond on the bay. Tributary streams within the Special Buffer Area are mapped as HCP/NCCP movement habitat. The created wetland and livestock ponds within the SBA are mapped as core habitat.
<i>Masticophis lateralis euryxanthus</i>	Alameda whipsnake	FT	FT		Chaparral; northern coastal sage scrub; coastal sage; and grassland communities.	<b>Low to Moderate.</b> There is no scrub habitat suitable to support this species present within the project impact locations. However there is scrub habitat on slopes near the RFG processing facility and within the SBA, and rock outcrops are present adjacent to the project impact locations. Grassland and stream corridors located within the project impact areas could be used for dispersal. There are 30 CNDDDB records within five miles of the property. The property is not mapped as HCP/NCCP core habitat or dispersal habitat.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Phrynosoma blainvillii</i>	coast horned lizard			SSC	Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills.	<b>Low to Moderate.</b> Grasslands and sandy soils near rock outcrops adjacent to the project area provide potential habitat and project site is within known range of the species. No impacts to rock outcrops or sandy soil will occur.
<i>Thamnophis gigas</i>	giant gartersnake	FT	ST		Associated with aquatic habitats. Often occurs in or near agricultural wetlands and other waterways such as irrigation and drainage canals; sloughs; ponds; small lakes; low gradient streams; rice fields; freshwater marshes; and adjacent uplands in the Central Valley.	<b>None.</b> Outside the known range for the species. No habitat suitable to support this species is present. No CNDDB records within five miles of the property.
<b>Birds</b>						
<i>Accipiter cooperii</i>	Cooper's hawk			WL (Nesting).	Associated with deciduous, mixed, and coniferous forest, and deciduous stands of riparian habitat in woodlands, riparian corridors, and along habitat edges, will nest in urban areas. They use mature trees with moderate to high crown-depths and canopy cover for nesting	<b>High (nesting and foraging).</b> Suitable foraging habitat is present. Trees located off-site on the adjacent golf course and eucalyptus and other trees within the SBA may provide potential nesting habitat. No direct impacts to nesting habitat will occur. Access to the project site could have the potential to impact active nests if present in the trees.
<i>Agelaius tricolor</i>	tricolored blackbird		ST (nesting colony)		Emergent wetlands; grasslands; and agricultural fields. Breeds near fresh water; preferably in emergent wetlands in cattails or tules; but also in thickets of willow;	<b>Low (nesting), high (foraging).</b> Foraging habitat present throughout the grasslands of the project area. Potential nesting habitat is present in the created wetland within the SBA and on adjacent riparian area near the



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
					wild rose; blackberry; or tall herbaceous species.	Contra Costa Canal although no direct or indirect impacts to nesting habitat will occur as part of the project. There are no CNDDDB records within five miles of the property. The created wetland within the SBA provides suitable nesting habitat and is mapped as HCP/NCCP potential nesting habitat. The entire project impact area is mapped as HCP/NCCP foraging habitat.
<i>Ammodramus savannarum</i>	grasshopper sparrow			SSC (nesting)	Breeds and forages in extensive meadows, fallow fields, and pastures.	<b>Moderate to high (nesting and foraging).</b> Grassland throughout and adjacent to the project impact locations provides suitable nesting and foraging habitat.
<i>Aquila chrysaetos</i>	golden eagle			FP (nesting and wintering)	Open to semi-open country; in prairies; tundra; open coniferous forest and barren areas; especially in hilly or mountainous regions. Typically nest on cliffs, steep escarpments, trees or in human-made structures, including windmills, observation towers, nesting platforms, and electrical transmission towers in grassland, chaparral, shrubland, forest, and other vegetated areas.	<b>Moderate to high (nesting and foraging).</b> Grassland throughout and adjacent to the project impact locations provides suitable foraging habitat. No large trees were observed that could support nesting directly within the impact areas, however large trees on the adjacent golf course located outside of the project area and eucalyptus trees within the SBA may provide potential nesting habitat. No direct impacts to nesting habitat will occur. Access to the project site could have the potential to impact active nests if present in the trees. There is one CNDDDB record within five miles of the property. The record is on the former Concord Naval Weapons Station where eagles have been seen foraging regularly during Audubon Christmas Bird Counts. The study area is mapped as HCP/NCCP suitable habitat.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Asio flammeus</i>	short-eared owl			SSC (nesting)	Requires dense vegetation; tall grasses, brush, ditches, and wetlands are used for resting and roosting cover. Found in open, treeless areas with elevated sites for perches, and dense vegetation for roosting and nesting.	<b>Low (nesting), high (foraging)</b> Suitable open foraging habitat is present throughout the project area and surrounding grasslands, dense brushy habitat for nesting is not present.
<i>Athene cunicularia</i>	burrowing owl			SSC (burrow sites and some wintering sites)	Open, dry annual or perennial grasslands with low-growing vegetation and on the margins of disturbed/developed habitats. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	<b>High (nesting and foraging).</b> Suitable foraging and nesting habitat present. Ground squirrel burrows of appropriate size for nesting observed. There are previous observations of burrowing owls on the property (Republic Services staff, personal communication). There are five CNDDDB records within five miles of the property. The nearest is approximately 1.3 miles away where an active burrow was observed in 1999 near the former Concord Naval Weapons Station. The property is mapped as HCP/NCCP suitable habitat.
<i>Buteo regalis</i>	ferruginous hawk			WL (Wintering).	An uncommon winter resident at low elevation grasslands throughout California. They frequent grasslands, sagebrush flats, desert scrub, and the periphery of pinyon-juniper habitats searching for prey from low flights over open areas.	<b>Moderate (winter foraging).</b> Suitable grassland habitat for foraging and wintering habitat is present throughout the project area and along the pipeline alignment. Depending upon the timing of impacts, potential to disturb wintering birds could occur.
<i>Buteo swainsoni</i>	Swainson's hawk		ST (nesting)		Nests in scattered trees or along riparian systems adjacent to agricultural fields or pastures; which are their primary foraging areas. Preferred nest trees are	<b>Low (nesting and foraging).</b> Suitable marginal nesting and foraging habitat is present although the site is not near known agricultural fields which are their primary foraging habitat. The property is not within

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
					valley oak; cottonwood; willow; sycamore; and walnut.	HCP/NCCP modeled potential foraging or breeding habitat.
<i>Charadrius montanus</i>	mountain plover			SSC (wintering)	Winter visitor to California, primarily from September to mid-March. Does not breed in California. Species of special concern status is for wintering habitat only. Strongly associated with short-grass prairie habitats, or their equivalents, that are flat and nearly devoid of vegetation.	<b>Low.</b> Grassland habitat on the property is currently grazed with patches of low grassland but property has several steep hills. Historical records from Contra Costa County are considered rare.
<i>Circus hudsonius</i>	northern harrier			SSC (nesting)	Sloughs; wet meadows; marshlands; swamps; prairies; plains; grasslands; and shrublands; large forest openings; open; low woody or herbaceous vegetation for nesting and hunting; nest on ground.	<b>Low (nesting), high (foraging)</b> Suitable foraging habitat is present throughout the project area. Riparian area near the Contra Costa Canal and golf course provides potential nesting habitat although direct impacts to nests will not occur as part of the project.
<i>Coturnicops noveboracensis</i>	yellow rail			SSC	Shallow marshes, and wet meadows; in winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields.	<b>None.</b> No habitat suitable to support this species is present.
<i>Elanus leucurus</i>	white-tailed kite			FP (nesting)	Open grasslands; meadows; or marshes for foraging close to isolated; dense topped trees for nesting and perching.	<b>High (nesting and foraging).</b> Suitable foraging habitat is present. No large trees were observed that could support nesting directly within the impact areas, however large trees located off-site on the adjacent golf course and eucalyptus and other trees within the SBA may provide potential nesting habitat. No direct impacts to nesting habitat will occur. Access to the project site



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
						could have the potential to impact active nests if present in the trees. There is one CNDDDB record within five miles of the property approximately 4.5 miles away. The observation is a nesting record from 1985.
<i>Eremophila alpestris actia</i>	California horned lark			WL	Associated with grasslands with low, sparse vegetation (Wiens et al. 1987) and can be found from the coast and deserts near sea level to alpine habitat above treeline in the Sierra Nevada. Nests are built on the ground in depressions often next to grass tufts.	<b>High for nesting and foraging.</b> Observed foraging during field surveys. Suitable nesting habitat and foraging habitat present throughout the project area and within the pipeline alignment.
<i>Geothlypis trichas sinuosa</i>	saltmarsh common yellowthroat			SSC (nesting)	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	<b>None.</b> No habitat suitable to support this species is present. There are three CNDDDB records within five miles of the property. All records occur within saltwater marsh habitat along Suisun Bay.
<i>Laterallus jamaicensis coturniculus</i>	California black rail		ST		Tidal salt marshes of the northern San Francisco Bay; primarily in San Pablo and Suisun Bays. Prefers marshes close to the water (bay or river); large; away from urban areas; and saline to brackish with a high proportion of Salicornia; Scripus maritime; Juncus; and Typha.	<b>None.</b> No habitat suitable to support this species is present. There are eight CNDDDB records within five miles of the property. All records occur within saltwater marsh habitat along Suisun Bay
<i>Lanius ludovicianus</i>	Loggerhead Shrike			SSC (nesting)	Nests in tall shrubs and dense trees; forages in grasslands, marshes, and ruderal habitats.	<b>Moderate (nesting), high (foraging).</b> Trees in the Special Buffer Area and at the RNG Processing Facility serve as suitable nesting

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
						habitat. Grassland and barbed wire indicative of suitable foraging habitat.
<i>Melospiza melodia mailliardi</i>	song sparrow ("Modesto" population)			SSC	Permanent resident, central lower basin of Central Valley, from Colusa south to Stanislaus County and east of Suisun Marshes. Nests and forages in fresh-water marshes and riparian thickets. Requires dense vegetation for nesting sites, song perches, and cover for refuge from predators.	<b>Not expected.</b> Outside of the known range of the Modesto subspecies population. Riparian area near the Contra Costa Canal and golf course provides potential nesting habitat, and the created wetlands within the SBA provide suitable habitat although no impacts to these habitats will occur as part of the project. There is one CNDDDB record approximately five miles from the property that is from museum collections with unknown accuracy and is estimated to be on the edge of the known range.
<i>Melospiza melodia maxillaris</i>	Suisun song sparrow			SSC	Permanent resident, tidal marshes surrounding Suisun Bay, from vicinity of confluence of Sac and SJ rivers west to Carquinez Straits. Nests and forages in tidal marshes only. Requires dense vegetation for nesting sites, song perches, and cover for refuge from predators.	<b>Not expected.</b> Outside of known range of Suisun population and lacks tidal marsh habitat.
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail	FE	SE		Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	<b>None.</b> No habitat suitable to support this species is present. There is one CNDDDB record within five miles of the property. The record occurs within saltwater marsh habitat along Suisun Bay.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Sternula antillarum browni</i>	California least tern	FE	FE	FP	Abandoned salt ponds and along estuarine shores in San Francisco Bay. Feeds primarily in shallow estuaries or lagoons where small fish are abundant. Nests on barren to sparsely vegetated site near water; usually on sandy or gravelly substrate.	<b>None.</b> No habitat suitable to support this species is present. There are two CNDDB records within five miles of the property. Both records occur within saltwater marsh habitat along Suisun Bay.
<b>Mammals</b>						
<i>Antrozous pallidus</i>	Pallid bat			SSC	Regionally found in low elevation arid or semi-arid areas near water. Their day roost is often in a warm horizontal opening (e.g. rock cracks, attics); the night roost is often in the open, near foliage; and the hibernation roost is often in buildings, caves, or cracks in rocks.	<b>Moderate.</b> Intact grassland with adjacent rock outcrops, trees and water sources that supports potential habitat for roosting and foraging. Potential roost sites occur in rock outcrops and trees adjacent to the project impact areas. Direct impacts to rock outcrops will be avoided.
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat			SSC	Found in pine forests and arid desert scrub, almost always near hibernation caves and mines, or near roosting areas. Prefer large open areas for roosting.	<b>Moderate.</b> Intact grassland with adjacent rock outcrops, trees and water sources that supports potential habitat for roosting and foraging. Potential roost sites occur in rock outcrops and trees adjacent to the project impact areas. Direct impacts to rock outcrops will be avoided.



Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Lasiurus blossevillii</i>	western red bat			SSC	Typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores).	<b>Moderate.</b> Riparian corridor near Contra Costa Canal and streams in the SBA provide potential roost habitat although direct impacts to these areas will not occur as a result of project activities. There is one CNDDDB record approximately five miles away in Antioch from 1998 when bats were detected; exact location and details on habitat are unknown.
<i>Neotoma fuscipes annectens</i>	San Francisco Dusky-footed woodrat			SSC	Oak and conifer woodlands; scrub communities; riparian habitats. Prefers forest habitats with moderate canopy, year-round greenery, a brushy understory, and suitable nestbuilding materials. Well-developed understory at base of a single evergreen may be suitable for a single individual.	<b>Not expected.</b> Riparian corridor near Contra Costa Canal is present but lacks moderate canopy and appropriate forest/woodland/brushy understory. There is one CNDDDB record approximately five miles from the property of a nest observed near Mitchell Canyon.
<i>Nyctinomops macrotis</i>	big free-tailed bat			SSC	Roosts in desert and arid grassland areas where rocky out-crops, canyons, or cliffs provide ideal roosts. Occasionally in buildings.	<b>None.</b> Species' range does not include northern California. Observations here are considered vagrants or extralimital records.
<i>Reithrodontomys raviventris</i>	Salt-marsh harvest mouse	FE	FE	SFP	Salt and brackish marshes of San Francisco; San Pablo; and Suisun Bay. Pickleweed is primary habitat. Requires upland areas for flood escape.	<b>None.</b> No habitat suitable to support this species is present. There are ten CNDDDB records within five miles of the property. All records occur within saltwater marsh habitat along Suisun Bay/Sacramento Delta.

Scientific Name**	Common Name	Status*			Habitat	Potential for Occurrence within Project Impact Area
		FESA	CESA	CDFW		
<i>Sorex ornatus sinuosus</i>	Suisun shrew			SSC	Occurs in tidal and brackish marsh communities along the north shore of San Pablo and Suisun bays. In general, salt marsh shrews prefer areas of low, dense vegetation, which provide adequate cover and nesting places along with a plentiful supply of invertebrates	<b>None.</b> No habitat suitable to support this species is present.
<i>Taxidea taxus</i>	American badger			SSC	Open areas; plains and prairies; farmland and woodland edges. Constructs deep burrows for the pursuit of prey and for sleeping.	<b>High.</b> Active burrow observed in the SBA during surveys for the proposed Project.
<i>Vulpes macrotis mutica</i>	San Joaquin kit fox	FE	ST		Grasslands and scrublands and agricultural mosaics of row crops; irrigated pastures; orchards; vineyards; and grazed annual grasslands.	<b>Moderate.</b> Grassland habitat and burrows of suitable size observed during surveys. There are four CNDDDB records within five miles of the project site. The nearest record is from 1992 of a foraging adult on East Bay Regional Park District lands. The property is mapped as HCP/NCCP core habitat.

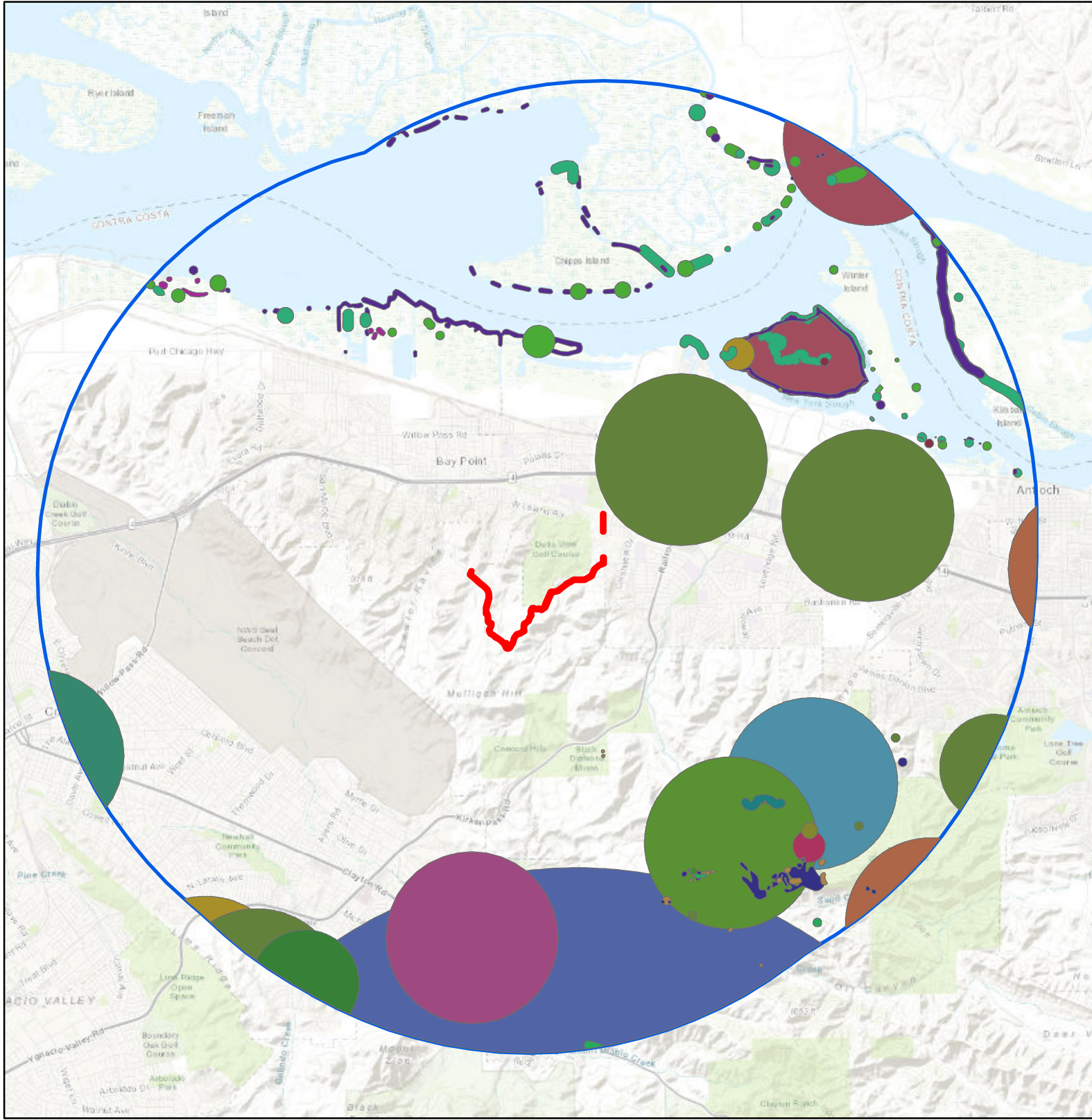
\*Status:

Federal Endangered Species Act (FESA) Designations: (FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed for listing as Endangered, (FPT) Federally Proposed for listing as Threatened, (FPD) Federally proposed for delisting, (FC) Federal candidate species

California Endangered Species Act (CESA) / Native Plant Protection Act (NPPA) Designations: (SE) State Endangered, (ST) State Threatened, (SCE) Candidate Endangered, (SCT) Candidate Threatened, (SR) State Rare.

California Department of Fish and Wildlife (CDFW) Designations:(SSC) Species of Special Concern, (FP) Fully Protected Species, (WL) Watchlist Species

\*\*Species list developed from CNDDDB Records, IPaC species list, East Contra Costa County HCP/NCCP species accounts and CDFW Special Animals List.



- |                                       |                          |                             |
|---------------------------------------|--------------------------|-----------------------------|
| Pipeline Alignment                    | Delta tule pea           | Suisun Marsh aster          |
| Pipeline 5 mile Buffer                | Diablo helianthella      | big tarplant                |
| Antioch Dunes evening-primrose        | Hall's bush-mallow       | caper-fruited tropidocarpum |
| Blennosperma vernal pool andrenid bee | Hospital Canyon larkspur | chaparral ragwort           |
| Bolander's water-hemlock              | Jepson's coyote-thistle  | large-flowered fiddleneck   |
| Brewer's western flax                 | Mason's lilaeopsis       | showy golden madia          |
| Contra Costa goldfields               | Mt. Diablo buckwheat     | slender silver moss         |
| Contra Costa manzanita                | Mt. Diablo fairy-lantern | soft salty bird's-beak      |
| Contra Costa wallflower               | Mt. Diablo manzanita     |                             |
| Delta mudwort                         | San Joaquin spearscale   |                             |

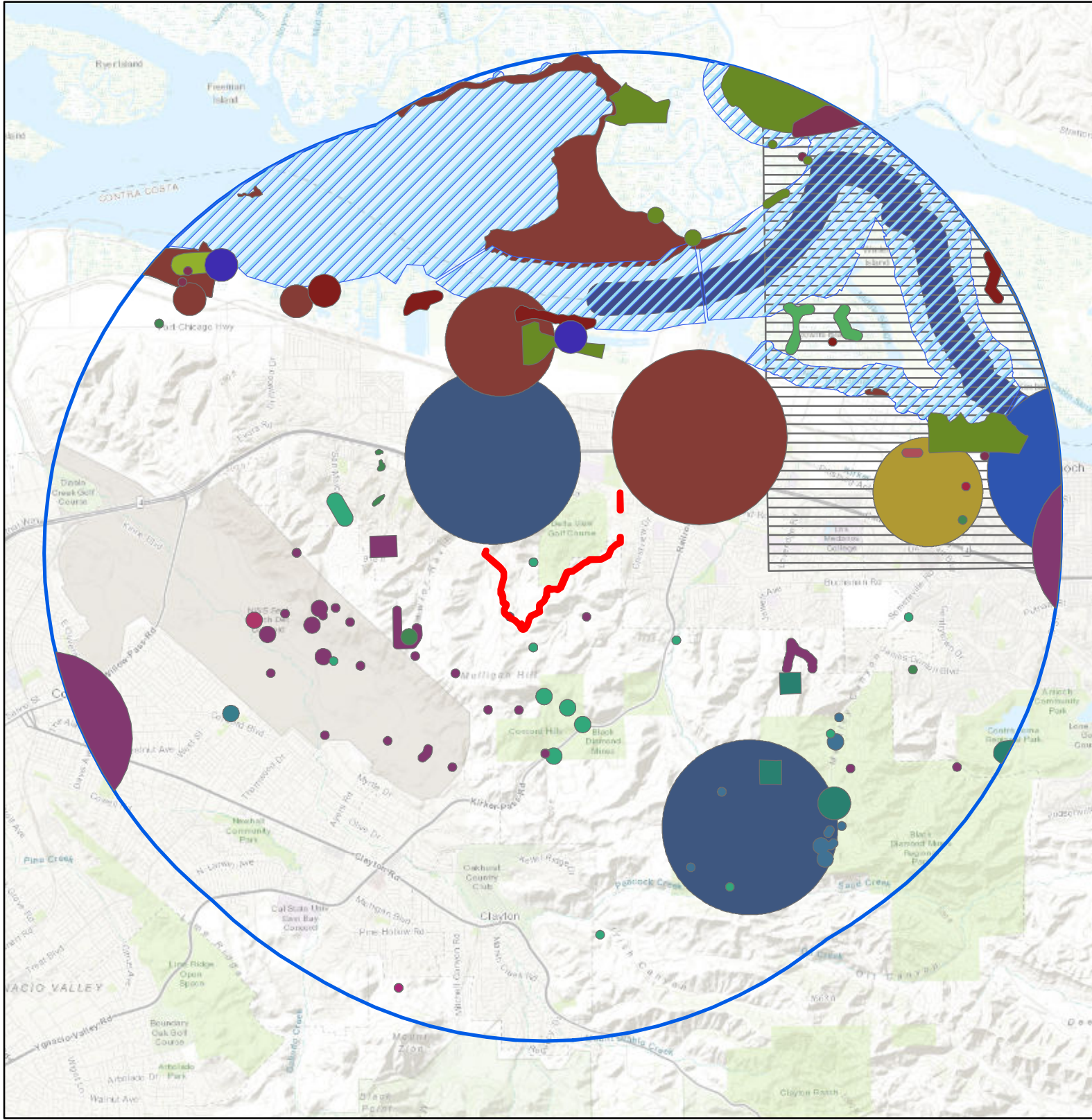
Ameresco Keller Canyon LLC  
 RNG Gas Processing and  
 Pipeline Project

Figure 4-3 CNDDDB Plants

April 2020







- |                             |                                    |                                     |
|-----------------------------|------------------------------------|-------------------------------------|
| Pipeline Alignment          | Lange's metalmark butterfly        | salt-marsh harvest mouse            |
| Pipeline 5 mile Buffer      | San Francisco dusky-footed woodrat | saltmarsh common yellowthroat       |
| Alameda whipsnake           | San Joaquin kit fox                | song sparrow ("Modesto" population) |
| California Ridgway's rail   | Suisun song sparrow                | steelhead - Central Valley DPS      |
| California black rail       | burrowing owl                      | vernal pool fairy shrimp            |
| California least tern       | golden eagle                       | western bumble bee                  |
| California red-legged frog  | longfin smelt                      | western pond turtle                 |
| California tiger salamander | northern California legless lizard | western red bat                     |
| Crotch bumble bee           | pallid bat                         | white-tailed kite                   |

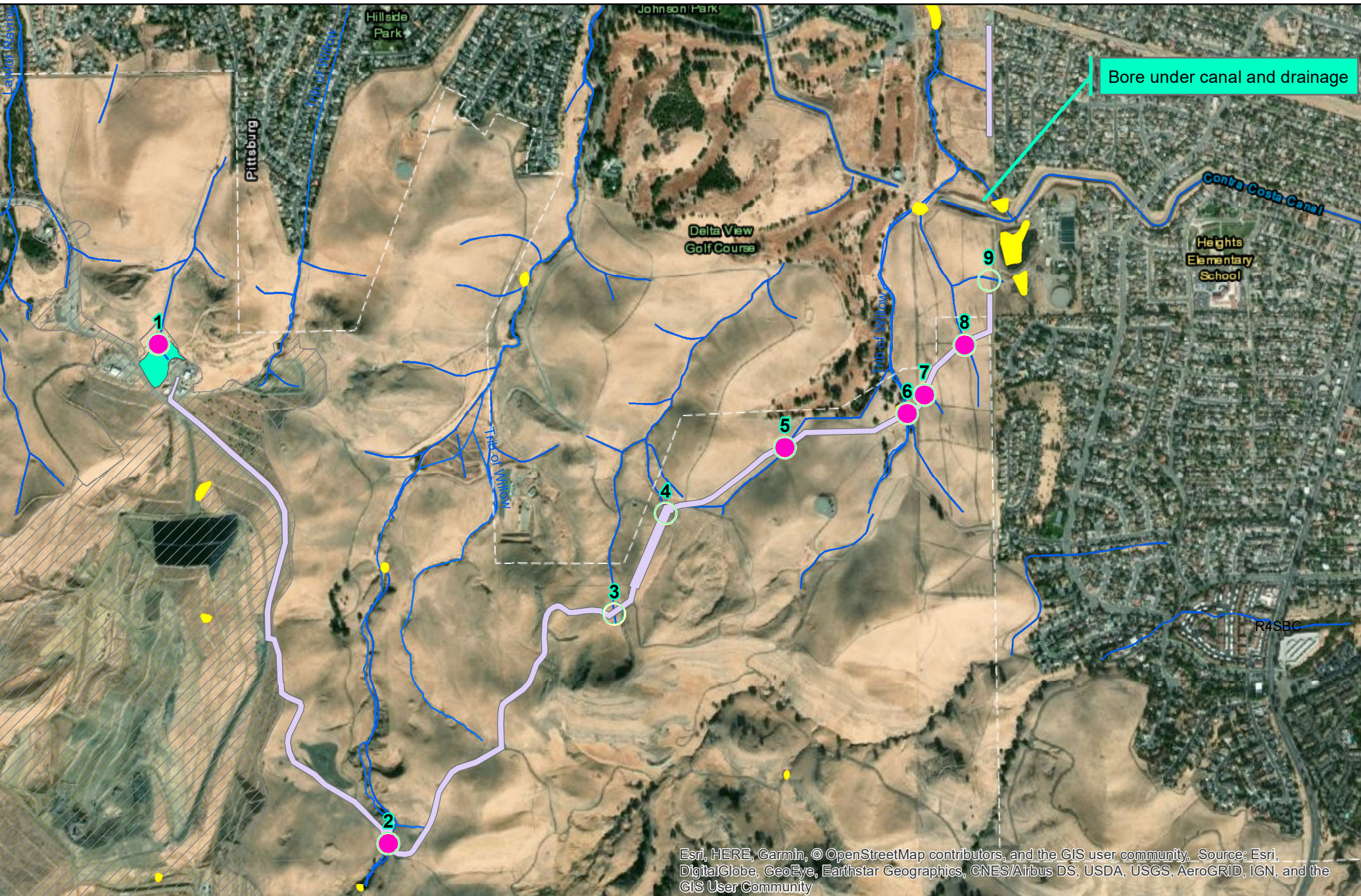
Ameresco Keller Canyon LLC  
Gas Processing and  
Pipeline Project

Figure 4-4 CNDDDB Animals










April 2020

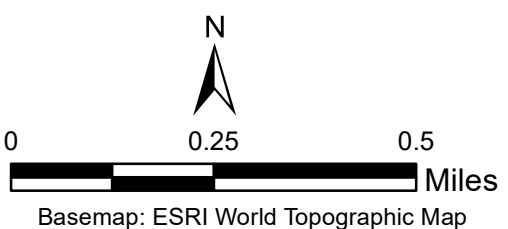






Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community, Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

-  Field Delineated Stream Crossings
-  Evaluated Potential Stream Crossings
-  Proposed Pipeline Workspace
-  RNG Processing Facility
-  Active Landfill
-  County Mapped Creeks
-  NWI Wetlands 2018
-  NWI Waters 2018
-  Neighboring Watershed



Ameresco Keller Canyon LLC  
 RNG Processing Facility and Pipeline Project  
 Figure 4-5: Wetland Delineation Study Area



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>5. CULTURAL RESOURCES – Would the project:</b>				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

- a) *Would the project cause a substantial adverse change in the significance of a historical resource pursuant to California Environmental Quality Act Guidelines Section 15064.5? (**Less than significant with mitigation**)*

A records search and literature review were conducted for the project site and a 0.5-mile radius surrounding it in November 2018 at the Northwest Information Center (NWIC) of the California Historical Resources Information System. In addition, FirstCarbon Solutions (FCS) conducted a series of three linear surveys in December 2018, May 2019, and March 2020 for unrecorded cultural resources along the length of the proposed underground four-inch diameter pipeline. The NWIC records search showed six cultural resources recorded within 0.5 mile of the project area, four of which are historical in nature. None of the cultural resources are within the footprint of the proposed RNG processing facility or the proposed pipeline alignment. The closest historical resource is P-07-000375, a designated historical ranch complex located 0.4 mile to the northwest of the pipeline alignment. Of 35 area-specific survey reports on file with the NWIC for the 0.5-mile search radius, eight reports address the project area, and none identified any historical resources that may be adversely affected by pipeline construction. This was confirmed by the three FCS linear surveys that came to the same conclusion.

Construction of the proposed project would involve grading and other earthwork, and therefore, it is possible that buried historical resources could be present and accidental discovery could occur. Historical resources can include but are not limited to wood, stone, foundations, and other structural remains; debris-filled wells or privies; and deposits of wood, glass, ceramics, and other refuse. **Damage or destruction of these historic resources during project construction would be a potentially significant impact.** Consequently, the applicant is required to implement the following standard DCD mitigation measures. Implementation of these mitigation measures would reduce impacts to less than significant levels.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Mitigation Measures

**Cultural Resources 1:** *The following measures shall be implemented during project construction.*

1. *A program of on-site education to instruct all construction personnel in the identification of prehistoric and historic deposits shall be conducted by a certified archaeologist prior to the start of any grading or construction activities.*
2. *If archaeological materials are uncovered during grading, trenching, or other on-site excavation, all work within 30 yards of these materials shall be stopped until a professional archaeologist who is certified by the Society for California Archaeology (SCA) and/or the Society of Professional Archaeology (SOPA), and the Native American tribe that has requested consultation and/or demonstrated interest in the project site, have had an opportunity to evaluate the significance of the find and suggest appropriate mitigation(s) if deemed necessary.*

b) *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to California Environmental Quality Act Guidelines Section 15064.5? **(Less than significant with mitigation)***

As discussed in Environmental Checklist Section 5.a above, six resources have been recorded within a 0.5-mile radius of the project site including two significant prehistoric resources: P-07-000272, a prehistoric settlement site, and P-07-000374, an important prehistoric petroglyph site. While these resources are located outside of the proposed pipeline alignment and would most likely be unaffected by pipeline construction, the presence of nearby prehistoric sites increases the potential for potentially significant sub-surface features to be encountered during ground disturbance. This is especially true where the proposed pipeline alignment is located in the SBA and southern portion of the PG&E property. These areas are largely undisturbed, obscured by foliage, contain features such as seasonal drainages that may have been utilized in antiquity, and are in closer proximity to the two prehistoric resources recorded within the search radius.

Similar to historical resources, grading and other earthwork associated with project construction could encounter previously undiscovered archaeological resources and therefore, it is possible that buried archaeological resources could be present and accidental discovery could occur. Archaeological resources can include but are not limited to stone, bone, wood, or shell artifacts or features, including hearths and structural elements. **Damage or destruction of these archaeological resources during project construction would be a potentially significant impact.** Implementation of **Cultural Resources 1** would reduce this impact to a less than significant level.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- c) *Would the project disturb any human remains, including those interred outside of formal cemeteries? (Less than significant with mitigation)*

No human remains or cemeteries are known to exist within or near the project area, proposed site of the RNG processing facility, or the proposed pipeline alignment; however, there is a possibility that human remains could be present within the project area and accidental discovery could occur. Consequently, construction activities on the project site could result in a **potentially significant impact due to disturbance of human remains**. Thus, the applicant is required to implement the following standard DCD mitigation measure. Implementation of this mitigation measure would reduce the impact to a less than significant level.

Mitigation Measure

**Cultural Resources 2:** *Should human remains be uncovered during grading, trenching, or other on-site excavation(s), earthwork within 30 yards of these materials shall be stopped until the County coroner has had an opportunity to evaluate the significance of the human remains and determine the proper treatment and disposition of the remains. Pursuant to California Health and Safety Code Section 7050.5, if the coroner determines the remains may those of a Native American, the coroner is responsible for contacting the Native American Heritage Commission (NAHC) by telephone within 24 hours. Pursuant to California Public Resources Code Section 5097.98, the NAHC will then determine a Most Likely Descendant (MLD) tribe and contact them. The MLD tribe has 48 hours from the time they are given access to the site to make recommendations to the land owner for treatment and disposition of the ancestor's remains. The land owner shall follow the requirements of Public Resources Code Section 5097.98 for the remains.*

Sources of Information

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project.*
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project.*
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description.*
- FirstCarbon Solutions, 2020. *Cultural Resources - Ameresco IS-MND Section 5.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>6. ENERGY – Would the project:</b>				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

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

The proposed project would use energy during project construction and project operation.

**Construction**

The proposed project consists of constructing a RNG processing facility to the northwest of the existing LFGTE plant and a new pipeline leading from the RNG processing facility to a PG&E valve lot located to the northeast of the KCL in the City of Pittsburg. The construction period for the proposed project is expected to be between 12 to 14 months. During construction, there would be energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment, and the use of electricity for building construction, lighting, and other construction uses. Fossil fuels to power construction vehicles and other energy-consuming equipment would be used during grading, paving, and building construction. The types of equipment could include gasoline- and diesel-powered construction and transportation equipment. Incorporation of the applicable LP89-2020 COAs and application of the BAAQMD Basic Construction Mitigation Measures, as described in Environmental Checklist Section 3.a above would reduce energy use through limiting idling of vehicles and equipment and requiring equipment to be properly maintained. In addition, the applicant is required to implement the Department’s standard construction restrictions that include, but are not limited to, limiting all construction activities and use of large trucks and heavy equipment to daylight, non-holiday weekday hours. With incorporation of the applicable LP89-2020 COAs, the BAAQMD Basic Construction measures, and the Department’s standard construction restrictions into the proposed project, the impact from the construction-related energy use would be less than significant.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Operation

During the operation of the project, energy would be consumed as part of the RNG processing operations. Processing operations for the project would involve energy consumption for the various equipment at the RNG processing facility, along with outdoor parking lot and security lighting. This future energy use would add to the energy use of the existing LFGTE plant. The proposed project would be designed and constructed in accordance with the 2019 California Green Buildings Standards Code, which includes specific requirements for nonresidential construction to reduce the amount of energy required for lighting and heating, as well as to promote energy conservation. As a result, while there would be an incremental increase in energy use with the proposed project, such increase would be considered to be less than significant. The proposed project would enable the applicant to more fully utilize the landfill gas generated at KCL that would otherwise be burned in the flares. Accordingly, there would be a less than substantial effect on operational energy and impacts related to operational energy use would be less than significant.

- b) *Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less than significant)*

The State of California has routinely adopted legislation to address climate change and clean energy production that has resulted in efforts to increase the efficiency of vehicles, buildings, and appliances and to provide energy from renewable sources. Locally, the Contra Costa County Board of Supervisors adopted the *Contra Costa County Climate Action Plan* in December 2015. The proposed project is a renewable energy project that is authorized by various State of California legislation and is proposed in accordance with the Keller Canyon Landfill Land Use Permit LP89-2020 COA 20.13 (Methane Recovery). The Project is also wholly consistent with the goals, objectives, and policies of the adopted *Climate Action Plan*. Thus, the proposed project would not impede any State or local initiatives for increasing renewable energy or efficiency.

Sources of Information

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Energy - Ameresco IS-MND Section 6*.
- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020*.
- Contra Costa County, 2015. *Climate Action Plan*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>7. GEOLOGY AND SOILS – Would the project:</b>				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

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

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- 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? (Less than significant)*

The California Geological Survey (CGS) has delineated Alquist-Priolo (A-P) zones along the known active faults in California. There are no active faults on the project site, and the nearest known active fault is the Concord fault, which passes approximately six miles southwest of the site. A bedrock fault is shown to cross the pipeline corridor. Tetra Tech completed Geotechnical Feasibility reports for the proposed RNG processing facility and the pipeline and concluded that the most recent displacement on the Kirker Pass fault occurred prior to the Holocene Epoch (i.e. more than 11,700 years before present). It is interpreted as a tear fault associated with the north-northeast dipping Clayton fault, which is approximately two miles south of the project site. The Clayton fault is a thrust fault that passes along the southwest toe of the Los Medanos. Based on the preponderance of evidence, which has included the subsurface investigation and field geologic mapping of the project engineering geologist, the risk of surface fault rupture on the Kirker Pass fault is rated “low.” Thus, the risk of surface fault rupture can be considered to be less-than-significant.

- ii) *Strong seismic ground shaking? (Less than significant with mitigation)*

Due to the location of the site with respect to active San Francisco Bay Region faults, and the proximity of the known active faults, strong to violent ground shaking poses a potential hazard to improvements. The risk of structural damage from earthquake ground shaking is controlled by building and grading regulations. The California Building Code (CBC) mandates that for structures requiring building permits (including the proposed structures, retaining walls over three feet in height and most types of accessory structures), the design must take into account both foundation conditions, proximity of active faults and their associated ground shaking characteristics. Design-level geotechnical reports must include CBC seismic design parameters. Those parameters are used by the structural engineer in the design of civil engineering structures. With conservative design and quality construction, ground shaking damage can be kept to a practical minimum. It should be recognized that mitigation of ground shaking damage to acceptable limits that is based solely on compliance with the California Building Code (CBC) assumes that the ground is stable. However, ground conditions within the project site are not isotropic and homogeneous. For example, the pipeline corridor traverses three deep-seated landslides. The data gathered by Tetra Tech, which includes slope stability analysis, indicates these landslides are dormant. The risk of reactivation of the entire slide mass is considered less-than-significant. However, **strong ground shaking could trigger reactivation of shallow slope failures within the dormant landslide, resulting in a potentially significant impact.** Thus, the applicant is required to implement the following mitigation



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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measures. Implementation of these mitigation measures would reduce the impact to a less than significant level.

Mitigation Measures

**Geology 1:** *To mitigate the potential impact of future ground movement/ reactivation of landslide associated with a significant seismic event, implementation of the following measures shall be required:*

- A. *Avoid crossing the lower elevations of the slide, where down cutting and potential regressive slope failures adjacent to canyon bottoms.*
- B. *Cross landslides where topography is relatively gentle.*
- C. *Minimize earthwork in the landslide area by orienting the pipeline crossing so that it parallels the topographic contour.*
- D. *Implement a ground movement monitoring program that shall include at least bi-annual monitoring (i.e. before and after the rainy season), and after significant earthquake in accordance with the provisions of an “Inspection and Monitoring Program.” That program shall specify the qualifications of the inspector, identify the segments of the pipeline to be inspected, and provide an inspection form that shall identify the date of the inspection; name, title and contact information for the inspector; descriptions of the features observed; recommendations of inspector for supplemental/ special geotechnical investigations or other corrective work; and indicate the entity/ staff position that is to receive the inspection for Ameresco Keller Canyon RNG, LLC (or its successor). Copies of all inspection reports shall be kept on file by the operator of the facility and shall be made available for review by representatives of Contra Costa County (e.g. during routine mitigation monitoring by the County).*
- E. *Include an automatic shut off valve and other safety measures in the pipeline design.*

iii) **Seismic-related ground failure, including liquefaction? (Less than significant with mitigation)**

In 2019 the California Geological Survey (CGS) issued a Seismic Hazard Zone (SHZ) map of the Honker Bay Quadrangle. The provisions of the SHZ Mapping Act can be found in the California Public Resources Code, Chapter 7.8, Sections 2690-2699.6. This law is similar in many respects to the Alquist-Priolo Earthquake Fault Zone Mapping Act, which has been implemented by the County for the past 40+ years. However, SHZ maps identify areas that are considered to

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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be at risk of earthquake triggered landslides and liquefaction. The SHZ map identifies a small portion of the proposed RNG processing facility site is an at-risk area for liquefaction. (The only portion of the site considered to be at-risk of liquefaction is located in the axis of the existing drainage swale). Similarly, the proposed pipeline corridor bisects limited sections of drainage channels that are indicated to be at-risk of liquefaction. Where granular, relatively loose alluvial deposits are encountered during subsurface exploration, the SHZ Mapping Act requires a rigorous evaluation of liquefaction potential that follows guidelines presented in CGS Special Publication 117A. These guidelines have been adopted by the California Mining & Geology Board as representing competent professional practice. The project geotechnical engineers are required to utilize the earthquake-related parameters and technical data provided in the SHZ Report #127. Where potentially liquefiable sands are confirmed to be present, Policy 10-20 of the General Plan Safety Element requires that structures be sited, designed and constructed to minimize the damage hazard.

Tetra Tech performed a screening investigation to evaluate liquefaction potential. Specifically, they logged three borings that were extended to bedrock within the site for the proposed RNG processing facility. The surficial deposits penetrated by the borings consisted chiefly of very stiff and hard clays and silts, along with some interbedded medium-dense to dense clayey sands and silty sands that were interpreted as colluvial deposits that were too cohesive and/or too dense to liquefy, and these deposits were substantially above the elevation of water table. For completeness, Tetra Tech included analysis of the medium dense sand lens that was penetrated between depths of 15 to 20 feet below the ground surface (boring B-102). Using field and laboratory test data, and assuming a worst case for the elevation of the water table (i.e. six feet below the ground surface), the liquefaction potential of the sand body was analyzed using a methodology compliant with Special Publication 117A, and confirmed that the sand layer was not susceptible to liquefaction.

For the pipeline component of the project, Tetra Tech logged 20 borings and 21 test pits. The data gathered indicate that surficial deposits along the pipeline corridor tend to be thin, clayey and cohesive. No clean, loose to medium dense sands were encountered that were potentially liquefiable. Sieve testing indicated that the clay fraction ranged from 99 percent (by weight) to 50 percent (by weight). The lowest clay content sample was just over 30 percent clay, which is still too cohesive to be a candidate for liquefaction potential. Tetra Tech indicates that perhaps in the lower portion of the drainage channels (far outside of the pipeline project area) may contain potential liquefiable fluvial deposits, but the clayey alluvial fan and soil creep deposits in the in area of the pipeline are fine-grained, poorly sorted and too cohesive to be candidates for liquefaction.

Review of the Tetra Tech Geotechnical Feasibility reports by the County Peer Review Geologist indicates the sand body analyzed from the proposed RNG processing facility site is

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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not sufficiently documented to allow for peer review of the analysis. In the Tetra Tech report, the peer reviewer is provided with an explanation of the methodology used in the analysis, some of the data inputs into the analysis, and the results of the analysis. Nevertheless, some of data inputs and intervening steps leading to the conclusions of Tetra Tech are not provided. The Peer Review Geologist considers the assessment of liquefaction to be adequate for a preliminary evaluation of liquefaction, but that preliminary analysis needs to be confirmed/ modified prior to issuance of the first construction permit for the proposed RNG processing facility. Accordingly, there is a **potentially significant impact due to seismic related ground failure at the proposed RNG processing facility site**. Consequently, the applicant is required to implement the following mitigation measures. Implementation of these mitigation measures would reduce the impact from seismic related ground failure to a less than significant level.

With respect to the pipeline corridor, the Peer Review Geologist concurs with the finding of Tetra Tech that the screening investigation of liquefaction potential along the pipeline corridor confirms the colluvial deposits are too cohesive to present a hazard of liquefaction. No further evaluation of liquefaction potential is warranted for the pipeline component of the project.

Mitigation Measures

**Geology 2:** *To mitigate the confirm/ modify the preliminary assessment of liquefaction for the RNG processing facility, the following measures shall be implemented:*

- A. *The project geotechnical engineer shall present an updated evaluation of liquefaction potential of the sand body penetrated by boring B-102 from 15 to 20 feet below the ground surface, based on the methodology and parameters required by the CGS for projects located in the Seismic Hazard Zone (SHZ). The seismic parameters peak used in the analysis shall match those provided by SHZ Report 127; the analysis shall reference the methodology selected by the project geotechnical engineer; provide justification the parameters that were inputs into the computer model run(s); and shall clearly demonstrate the analysis is consistent with the standards required for projects in the SHZ.*
  
- B. *The liquefaction analysis presented in response to item 2.A above shall be submitted for review at least 30 days prior to submitting an application for a grading or building permit for the RNG processing facility. That report shall also provide final recommendations for site grading, drainage and foundation design, including recommendations for reinforced earth, retaining walls, and foundations of proposed structures. It shall also present plan review comments of the project geotechnical*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*engineers, and geologists, outline the recommended observation and testing services during construction.*

*C. The report required by items 2.A and 2.B above shall be subject to review by the County Peer Review Geologist, and review/ approval by the CDD.*

*iv) Landslides? (Less than significant with mitigation)*

The SHZ map of the Honker Bay Quadrangle identifies areas that are considered to be at-risk of earthquake triggered landslides by the CGS on the north-facing flank of the Los Medanos Hills. No landslide hazard areas are indicated on the SHZ map that would affect construction of the proposed RNG processing facility. The Tetra Tech investigation confirms that landslides do not present a hazard to the RNG processing facility site. However, three landslide areas are delineated that extend into the pipeline corridor. The original geologic map prepared by Tetra Tech for the pipeline corridor delineate three landslides that are to be traversed by the pipeline. They are designated landslides QIs#2, QIs#3 and QIs#4 on Plate 1a of the Geotechnical Feasibility report for the pipeline. Each landslide was explored by the project engineering geologist using large diameter boreholes, which allowed the geologist to enter the borehole and map features on the walls. The goal of the engineering geologic investigation was to select an alignment for the pipeline that would avoid landslides wherever possible. Where routing the pipeline through a slide area was unavoidable, the approach was to (i) avoid areas of Holocene age landslides and slumps, (ii) crossing the ancient/ dormant slide where topography was relatively flat, (iii) gather sufficient subsurface and laboratory data to characterize the depth of landslides and engineering properties of slide debris, (iv) perform preliminary evaluation of slope stability, and (v) identify mitigation measures to address any significant impacts that were confirmed to be present. As a result of this investigation the original pipeline alignment was significantly modified.

The slope stability analysis evaluated the global stability of the three landslides under static conditions using the computer program Slope/W. To evaluate the performance of the landslides under earthquake ground seismic shaking, Tetra Tech utilized a displacement analysis model. To assess satisfactory performance, the criteria employed by Tetra Tech were as follows: (i) static safety factor of at least 1.3, and (ii) a seismically induced permanent displacement of the slope that is no greater than 12 inches. Tetra Tech report found that the static safety factors for the three landslides (QIs #2, QIs #3 and QIs #4) all exceeded the stability threshold of 1.3; the displacement analysis determined that QIs #3 and QIs #4 exceeded the threshold value of 12 inches. The County Peer Review Geologist indicated that: (i) the pipeline does not fall under the authority of the SHZ Mapping Act because it is not a structure for human occupancy; (ii) the static slope stability analysis was based on unusually complete subsurface and laboratory data, and geologic cross-sections of the slides that were



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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the basis of the analyses, and (iii) the displacement analysis does not imply that the entire landslide mass would be mobilized. However, there is a **potential for portions of the ancient landslide to be reactivated, which could result in a potentially significant impact on the pipeline within the slide area.** Thus, the applicant is required to implement the mitigation measures of **Geology 1** and the following **Geology 3** mitigation measures. Implementation of the Geology 1 and Geology 3 mitigation measures would reduce the impact to a less than significant level.

Mitigation Measures

**Geology 3:** *To mitigate the potential impact of future ground movement/ reactivation of landslide associated with a significant seismic event, the Geology 1 mitigation measures shall be implemented. In addition, the following measures are required:*

- A. *The project engineering geologist shall view where landslide deposits are in contact with colluvium of bedrock. This shall occur prior to placement of any bedding/ backfill in the following segments of the trench to determine if weak soil conditions are encountered that would warrant special engineering at such interfaces (e.g. over-excavation of any soft material at the slide/ bedrock contact, and replacement with reinforced earth or other special engineering). The findings of the project engineering geologist shall be documented in the final grading report. The project engineering geologist shall view and document exposed conditions in the pipeline trench where it crosses the boundary of landslides QIs #2, QIs #3 and QIs #4.*
  
- B. *The project engineering geologist shall view exposed conditions in the immediate area of the trench pipeline crossing of the Kirker Pass fault. The fault is a geologic contact, so there is potential for contrasting engineering properties of the rock units on opposite sides of the fault, along with the engineering properties of the fault zone. The fault zone area is a potentially weak, marginally stable area that can be expected to include highly fractured rock, shear planes, possible gouge zone, and possible seepage zone. These are adverse conditions could influence local slope stability. The final grading report shall include mapping of the fault zone and provide an explanation of any special recommendations/ special engineering incorporated into the design.*

b) *Would the project result in substantial soil erosion or the loss of topsoil? (Less than significant with mitigation)*

The soil series in the project area is the Altamont clay/ Altamont-Fontana Complex. The Soil Survey of Contra Costa County indicates that where the soils are bare, they are subject to medium

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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to rapid runoff and that hazard of erosion is moderate to high. With respect to short-term erosion, a routine provision for grading permits in Contra Costa County is a requirement for submittal of an Erosion Control Plan (ERP). This plan is required to be submitted by the applicant prior to issuance of a grading permit. The ERP is subject to technical review by the Department of Conservation and Development, Building Inspection Division (BID). Normally refinements to the plan are required as the winter rainy season approaches. This occurs during late summer, when it is known what the status of the project would be on October 1<sup>st</sup>. Additional detail is provided to the ERP at that time, including such items as provisions for (i) storage of extra erosion control materials on site and (ii) monitoring of the performance of disturbed areas during/ immediately following significant rain storms. If erosion control facilities are damaged or failing to perform as intended, the erosion control measures being implemented on the site are refined to correct the deficiency. Implementation of the ERP would reduce the impact of short-term erosion control to a less than significant level.

In addition to the routine erosion control measures identified above that are required by the BID), there are two locations along the proposed pipeline corridor identified by Tetra Tech that require special care to control erosion, soil creep, and scour protection at incised drainage swale crossings). Thus, there is a **potential for substantial soil erosion, which could result in a potentially significant impact at the two identified locations along the pipeline corridor**. area. Thus, the applicant is required to implement the following mitigation measures. Implementation of the mitigation measures would reduce the impact to a less than significant level.

Mitigation Measures

**Geology 4:** *To mitigate the potential for future headward erosion, soil creep, and shallow sloughing to undermine the pipeline, implementation of scour protection measures shall be implemented where the pipeline crosses seasonal water courses.*

- A. *Where feasible, the pipeline shall be buried below the potential scour depth.*
- B. *Scour assessment shall be performed by the project geotechnical engineer at locations specified in the project geotechnical engineer’s reports. Typical scour protection measures shall be considered for use, including structural and/ or biotechnical erosion control. The selection of the scour protection measures shall be based upon completion of the scour assessment and shall consider environmental constraints.*
- C. *During construction, the scour assessment shall be determined by the project geotechnical engineer and may include a plan view, typical section(s), and specifications for the proposed stabilization/ erosion control measures.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- c) *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (Less than significant with mitigation)*

Scientific and historical data indicate liquefaction is a hazard where relatively clean, loose, granular deposits are present. These conditions were not confirmed to be present within the pipeline corridor, but one boring in the area of the proposed RNG processing facility encountered a medium-dense sand that was considered to be a possible candidate for liquefaction, assuming that the sand was saturated. The geotechnical/ geologic investigation of the pipeline corridor encountered bedrock at/ near the ground surface. Where surficial deposits were present on the site, they tended to be relatively thin and in the upper reaches of drainage swales. The deposits were chiefly fine-grained, poorly sorted, and most were interpreted as older (Pleistocene) colluvium. The preponderance of evidence indicates that the risk of liquefaction and associated lateral spreading failures are less-than-significant. Another hazard evaluated by Tetra Tech was *dynamic settlement*. Under conditions of strong earthquake shaking, relatively loose, dry sands can consolidate, triggering subsidence/ differential settlement. The subsurface data gathered by Tetra Tech did not indicate the presence on any loose, dry sands within the proposed RNG processing facility site, and none were encountered during the investigation of the pipeline corridor. Consequently, the risk of dynamic settlement is considered to be less-than-significant. Landslides, soil creep and erosion are potential hazards whenever improvements are constructed within steep hillside areas. The engineering geologic investigation indicates no landslide hazards in the area of the RNG processing facility, but the original geologic map of the site prepared by Tetra Tech confirmed the presence of four deep-seated landslides that are dormant at present, along with more than 10 shallow- to moderated-depth landslides on the slopes on the project site. Some of these smaller landslides are clearly of Holocene age, and fence posts and leaning trees are evidence of pervasive soil creep. Consequently, there is **a potential for liquefaction at the proposed RNG processing facility site and for landslides and soil creep along the pipeline corridor area, which could result in potentially significant impacts.** Implementation of mitigation measures **Geology 1, Geology 2, Geology 3, and Geology 4** would reduce potential impacts to a less-than-significant level.

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

The Soil Survey of Contra Costa County indicates the soil series identified within the project areas are rated *highly expansive and highly corrosive*. Laboratory testing performed by Tetra Tech indicates the soils are *moderately to highly expansive*, and over the long-term the soils are considered to be corrosive. Final design recommendations to mitigate the potential hazard posed by these adverse soil conditions should be provided in a pre-construction geotechnical report. For

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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the proposed RNG processing facility, the applicant may elect to utilize non-expansive soil on building pads and as the design of the project proceeds more detail would be required on the future loads to be imposed by the processing facility structures. Regarding corrosive soils, excessive sulfate in the soil (or groundwater) has potential to result in a reaction between cement in concrete and the soil. The regulatory framework includes standards for evaluation of sulfate levels, and how they relate to cement reactivity with soils and/or groundwater. Similarly, iron/steel in contact with the ground is potentially subject to corrosion, depending on chloride ion concentrations. Preliminary testing has been performed for the proposed RNG processing facility and pipeline project, but that testing was not intended to be the basis for final design recommendations. Based on testing and the experience of Tetra Tech, the native soils are anticipated to have a *very severe* corrosion potential to buried ferrous metals. Thus, the **expansive and corrosive soils on the project site could result in potentially significant impacts on the proposed RNG processing facility and the pipeline**. Consequently, the applicant is required to implement the following mitigation measures. Implementation of these mitigation measures would reduce the impacts of expansive and corrosive soils to less than significant levels.

Mitigation Measures

**Geology 5:** *To mitigate the potential impact of expansive and corrosive soils, implementation of the following measures shall be required:*

- A. *For the RNG processing facility, additional soil expansion and corrosion hazard testing shall be required for the on-site and any import earth materials by the project geotechnical engineer. The findings of the testing shall be documented in the final grading report, which shall provide specific standards and criteria for the geotechnical aspects of the RNG processing facility.*
- B. *The final grading report required by Geology 5.A shall be subject to review by the Peer Review Geologist, and review and approval by the CDD.*
- C. *For the pipeline, a California licensed corrosion engineer shall be retained by the applicant to identify suitable types of piping and necessary protection for underground metal conduits and fittings.*
- D. *During pipeline construction, the corrosion potential of the on-site soils shall be verified for each encountered soil type*
- E. *Any import fill materials shall be tested to confirm that their corrosion potential. All import must be approved by the project geotechnical engineer prior to transporting to the project site.*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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F. *The corrosion engineer shall review available information on the corrosion hazard and may require additional testing. The corrosion engineer shall document the specific long-term corrosion control design recommendations, and any monitoring recommendations, in a wet signed and stamped letter-report. That report shall be submitted to the CDD prior to placing any pipe.*

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

The proposed RNG processing facility is immediately northwest of the existing LFGTE plant. A new employee restroom would be provided for the two new employees expected to operate and monitor the RNG processing facility. As discussed in Environmental Checklist Section 19.c, a septic system with a leach field was constructed for the existing LFGTE plant in 2009 under Contra Costa Environmental Health Permit 07-000-774565, as required by LP89-2020 COA 30.20 (On-site Septic System). The new restroom would tie into this existing septic system. Similarly, personnel who would monitor the underground pipeline would be able to use existing wastewater facilities on the KCL site and/or at the RNG processing facility. By utilizing existing wastewater facilities, use of new septic tanks would not be required, and therefore, there would be a less than significant impact related to the use of septic tanks or alternative wastewater disposal systems.

f) *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (Less than significant)*

The proposed RNG processing facility site is located in an area of industrial facilities bounded to the southeast by the existing LFGTE plant and on the west and south by the paved landfill haul road used by trucks hauling debris to the landfill disposal area. When those adjacent facilities were constructed in the late 1980s- early 1990s, the industrial facilities area was graded. The earthwork performed at that time resulted in topographic highs being lowered in elevation, and engineered fill placed as needed to create level padded lands, and therefore, nearly 100 percent of this area was previously disturbed. As a result, the potential to disturb unique paleontological or geological features at this location is negligible.

With respect to the pipeline corridor, the westernmost 0.4 mi long segment is within the KCL Primary Project Area. East of the Primary Project Area, a proposed 2.0-mile-long pipeline segment would traverse the SBA. The SBA is an undeveloped open space hillside area used for cattle grazing. There are dirt ranch roads that provide access for emergency/firefighting equipment, and monitoring of landfill debris by KCL staff. The pipeline follows the alignment of rural roads.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Elsewhere in the SBA, the pipeline alignment is guided by such factors as landslides/slope stability and topography.

The design of the pipeline installation requires excavation of a trench that ranges from four to 10 feet in depth. Due to the shallow depth of the pipeline trench, any rock exposed in the walls or floor of the trench can be anticipated to be weathered. Typically, the weathering process leaches the calcareous shells of the foraminifera (protozoans with calcareous tests), with the calcareous material in solution and moving downward/ down gradient. Ultimately, with evaporation, the calcareous material would form of calcareous veining or in-filling voids. Thus, the potential for discovery of scientifically significant fossils in shallow trenches that penetrate only soil and weathered rock is less-than-significant.

Unique geologic features are not ordinary rock outcrops. Examples of unique features known to occur in sedimentary rock include natural arches, spires, and balanced rocks. There are no features of this type on the site. In volcanic terrain, natural curiosities or wonders might include caldera, lava tubes, beautifully colored volcanic tuff, columnar jointed basalt, etc. There are many areas located in the SBA, that present medium- and long-range views of natural terrain features (e.g. ridge crests with natural vegetation, and topography modified by landslides, etc.). Construction of the pipeline through the SBA would not damage existing views. The adjoining PG&E portion of the pipeline is at lower elevations than the SBA. Much of this segment of the pipeline crosses a disturbed area, characterized by major overhead power lines, underground utilities, and the Contra Costa Canal. This segment of the pipeline is underlain by geologically recent alluvial deposits, artificial fill, along with non-marine bedrock of Latest Pliocene age. Consequently, the potential for unique paleontological resources or unique geologic features along the pipeline corridor would be less-than-significant.

**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Darwin Myers Associates, 2020. *Geologic Peer Review /Geotechnical Reports & CEQA Assessment, LP18-2022/APN 094-360-019, etc. & 094-080-012, Bay Point Area, Contra Costa County, DMA Project # 3006.20*.
- Tetra Tech BAS, 2019. *Geotechnical Feasibility Report, Ameresco Gas Processing Plant, Keller Canyon Landfill, Pittsburg, California, Tetra Tech Job #BAS 18-136E*.
- Tetra Tech BAS, 2020. *Geotechnical Engineering Report, Renewable Natural Gas Transmission Pipeline, Ameresco Keller Canyon, Pittsburg, California, Tetra Tech Job #BAS 18-136E*.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Contra Costa County General Plan, 2005-2020. *Safety Element*.
- California Building Code, 2019.
- Contra Costa County Grading Ordinance.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>8. GREENHOUSE GAS EMISSIONS – Would the project:</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

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

Greenhouse gases are gases that trap heat in the atmosphere and contribute to global climate change. Greenhouse gases include gases such as carbon dioxide, methane, nitrous oxide, and various fluorocarbons commonly found in aerosol sprays. Typically, a single project in the County would not generate enough greenhouse gas (GHG) emissions to substantially change the global average temperature; however, the accumulation of GHG emissions from all projects both within the County and outside the County has contributed and will contribute to global climate change.

In an effort to reduce California’s contribution to climate change, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires that California cap its GHG emissions at 1990 levels by 2020. Locally, the Contra Costa County Board of Supervisors adopted the *Climate Action Plan (CAP)* in December 2015. The CAP identifies how the County would achieve the AB 32 GHG emissions reduction target of 15 percent below baseline levels by the year 2020. The CAP applies to all unincorporated areas of the County, including Bay Point, the unincorporated community located closest to the proposed project. The CAP lays the groundwork for achieving long-term State GHG reduction goals for 2035.

The County’s CAP includes GHG reduction targets, strategies, and measures to reach the community-wide GHG reduction goal of 15 percent below baseline levels by 2020. In total existing actions, State programs, and GHG reduction measures in the CAP would reduce GHG emissions in the unincorporated County area by 86,300 MT CO<sub>2</sub>e in 2020 as shown in Table 8-1.

**GHG Emissions from Project Operation**

The proposed Ameresco RNGPFP represents a stationary source of potential GHGs. Stationary sources are non-moving, fixed-site producers of pollution such as power plants, chemical plants, oil refineries, manufacturing facilities, and other industrial facilities. In 2013, the unincorporated



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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areas of Contra Costa County had 20 stationary source facilities that were required to report emissions to the California Air Resources Board (CARB). The CARB is the State agency designated with monitoring and regulating sources of emissions of GHGs in order to reduce their emissions. Emissions from stationary source facilities and from the energy used by those facilities and other major industrial sites accounted for 93 percent of all emissions within the unincorporated County area in the baseline year of 2005 and 92 percent in 2013.

**Table 8.1. GHG Reduction Summary by Topic (MT CO<sub>2</sub>e)**

<b>Topic</b>	<b>2020</b>	<b>2035</b>
Energy Efficiency	7,510	14,000
Renewable Energy	9,090	15,470
Land Use and Transportation	12,630	23,830
Solid Waste	55,280	79,430
Water	1,210	940
Governmental Operations	580	450
<b>Total</b>	<b>86,300</b>	<b>133,670</b>

Source: Contra Costa County Final Climate Action Plan, December 2015, Table 4.2, page 74

The BAAQMD CEQA Air Quality Guidelines contain *Thresholds of Significance* for project level operational-related GHG emissions as follows:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,100 metric tons per year (MT/yr.) of CO<sub>2</sub>e; or 4.6 MT CO<sub>2</sub>e/SP/yr. (residents + employees). Land use development projects include residential, commercial, industrial, and public land uses and facilities; and
- For stationary-source projects, the threshold is 10,000 (MT/yr.) of CO<sub>2</sub>e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate.

The applicable BAAQMD emission threshold for the operation of the proposed RNGPFP is 10,000 metric tons per year (MT/yr.) of CO<sub>2</sub>e. If annual emissions of operational-related GHGs exceed this level, the proposed project would result in a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact to global climate change.

The Ameresco RNGPFP would process and consume GHGs that otherwise would be released to the atmosphere under current conditions. Thus, the project’s utilization of LFG that is already

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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being produced at KCL would have a beneficial impact on potential GHG emissions. (LFG at KCL is projected to increase over time as more waste is landfilled.) The RNG processing facility would process the LFG produced at KCL into commercial quality RNG that would be supplied to the local natural gas network operated by PG&E via underground pipeline, which would eliminate any need for transporting the gas via conventional gasoline or diesel vehicles. The RNG produced from the LFG is expected to be sold in the market for use by local trucks; more than half of all natural gas dispensed in California for transportation utilizes RNG to power trucks and buses.

The international reporting standard for carbon dioxide emissions is in metric tons. There are approximately 2,204 pounds per metric ton. Reducing 10 metric tons of CO<sub>2</sub>e is equivalent to:

- Saving 1,125 gallons of gasoline.
- Taking 2.1 passenger vehicles off the road.
- 1.4 homes' worth of electricity for one year.

Table 8-2 provides a comparison of GHGs generated by the baseline and proposed project conditions. Table 8-2 shows that in the first year of operation, the Ameresco RNGPFP is estimated to reduce annual GHG emissions of CO<sub>2</sub>e by approximately 50,257 metric tons, and CO<sub>2</sub> by approximately 50,044 metric tons per year, or approximately 39 percent compared to the baseline condition. Emissions of methane and nitrous oxides would be reduced by approximately 82 percent and 81 percent, respectively. The project's estimated GHG emissions reduction of 50,257 MTCO<sub>2</sub>e achieves approximately 91 percent of the CAP's Solid Waste reduction target for 2020, and approximately 70 percent of the 2035 target.

The proposed RNGPFP would not result in a net increase in GHG emissions, and the BAAQMD emission threshold of 10,000 metric tons per year (MT/yr.) of CO<sub>2</sub>e is not exceeded. The proposed project by design, implements local and regional policies for the reduction of GHGs, and therefore, represents a major improvement over current baseline conditions. As a result, there would be a beneficial project impact.

Construction-Related GHG Emissions

The proposed RNGPFP has the potential to emit construction-related GHGs. The BAAQMD CEQA Guidelines currently do not include any significance threshold for construction-related GHG emissions; however, the Guidelines require a quantification of GHG emissions and a determination of whether the Project is consistent with meeting AB 32 GHG reduction goals, including reducing total projected 2020 GHG emissions to 1990 levels, which would be a reduction of approximately 30 percent.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 8-2. Estimated Emissions of Greenhouse Gases**

<b>Equipment</b>	<b>Estimated Emissions</b>			
	<b>GHG</b>			
	<b>CO<sub>2</sub>e (lb/hr) (TPY)</b>	<b>CH<sub>4</sub> (lb/hr) (TPY)</b>	<b>N<sub>2</sub>O (lb/hr) (TPY)</b>	<b>CO<sub>2</sub> (lb/hr) (TPY)</b>
A-1 Flare	15,862	0.49	0.10	15,820
	69,832	2.13	0.42	69,649
A-2 Flare	16,809	0.52	0.10	16,764
	73,447	2.26	0.44	73,329
<b>Baseline Total</b> <sup>1</sup>	<b>32,671</b>	<b>1.01</b>	<b>0.20</b>	<b>32,584</b>
	<b>143,279</b>	<b>4.39</b>	<b>0.86</b>	<b>142,978</b>
Thermal Oxidizer	16,464	0.13	0.03	16,453
	72,111	0.56	0.11	72,065
Enclosed Flare <sup>2,3</sup>	17,355	0.26	0.05	17,334
	15,785	0.24	0.05	15,765
<b>Proposed Totals</b> <sup>4</sup>	<b>33,819</b>	<b>0.39</b>	<b>0.08</b>	<b>33,787</b>
	<b>87,896</b>	<b>0.80</b>	<b>0.16</b>	<b>87,830</b>
<b>Net Change (TPY)</b>	<b>-55,383</b>	<b>-3.59</b>	<b>-0.70</b>	<b>-55,148</b>
<b>Net Change (MTPY)</b>	<b>-50,257</b>	<b>-3.26</b>	<b>-0.64</b>	<b>-50,044</b>
<b>Percent Reduction (TPY)</b>	<b>39%</b>	<b>82%</b>	<b>81%</b>	<b>39%</b>

Source: Tetra Tech, May 2020

CO<sub>2</sub> – Carbon Dioxide; CH<sub>4</sub> – Methane; N<sub>2</sub>O – Nitrous Oxide; CO<sub>2</sub>e = Carbon Dioxide equivalent

lb/hr – pounds per hour; TPY – tons per year; MTPY – metric tons per year

Global Warming Potential (GWP)/CO<sub>2</sub>e are as follows: CH<sub>4</sub> = 25, CO<sub>2</sub> = 1, N<sub>2</sub>O = 310

<sup>1</sup> Baseline total flow based on 4,700 standard cubic feet per minute (scfm) of landfill gas (LFG) per size of proposed project of 4,700 scfm. Operations over 8,760 hours in a calendar year.

<sup>2</sup> The enclosed flare would operate on continuous pilot gas (8,760 hours a calendar year) and operate approximately 20 percent of the year on waste gas (1,752 hours a calendar year).

<sup>3</sup> Estimated emissions for enclosed flare based on estimates of high oxygen waste gas (1,752 hours a calendar year) and pilot gas (8,760 hours a calendar year).

<sup>4</sup> Proposed total flow based on 4,700 scfm of LFG for 8,760 hours in a calendar year for the thermal oxidizer.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Construction equipment and construction period for the Ameresco RNGPFP were assumed for each phase of construction as follows:

- Mass grading and fill of the proposed RNG processing facility site (45 days);
- Pipeline construction (120 days); and
- RNG processing facility construction (76 days).

Given these construction periods, the overall construction period is assumed to be eight to 12 months, with potentially all phases under construction concurrently.

Estimates of CO<sub>2</sub>e emissions for the proposed project were calculated in pounds per day using the CalEEMod model in accordance with BAAQMD CEQA Guidelines. The pounds per day estimates were then converted to total pounds emitted during the entire construction period, and the equivalent tons and metric tons. A summary of construction-related GHG emissions by construction phase is presented in Table 8-3.

Table 8-3 shows that a total of up to 629 MT of CO<sub>2</sub>e would be emitted over the entire eight to 12 month construction period. GHG emissions for on-site construction and off-site construction (traffic related to hauling, vendors, and workers) for each phase are estimated as follows:

- Phase 1: Mass Grading: 120.63 MT CO<sub>2</sub>e;
- Phase 2: Pipeline Construction: 227.823 MT CO<sub>2</sub>e; and
- Phase 3: RNG Processing Facility Construction: 281.094 MT CO<sub>2</sub>e.

As noted previously, the BAAQMD CEQA Guidelines do not currently include thresholds of significance for construction-related GHG emissions. When compared to the BAAQMD threshold of 10,000 metric tons per year of CO<sub>2</sub>e for stationary-source projects, the Project’s estimated 629 MT of CO<sub>2</sub>e is less than 6.5 percent of the stationary source threshold. The proposed project’s consistency with meeting AB32 goals and County CAP goals and strategies for GHG reduction were described previously related to the operational-level impacts. Based on these considerations, the potential impact of construction-related GHG emissions from the proposed project would be less than significant.

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

At a regional scale, the BAAQMD adopted the 2017 Bay Area Clean Air Plan: Spare the Air, Cool the Climate. The purpose of the Clean Air Plan is to bring the air basin into compliance with the requirements of federal and State air quality standards and achieve greenhouse gas reduction



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targets for 2030 and 2050. The Clean Air Plan included a number of pollutant reduction strategies for the San Francisco Bay air basin.

**Table 8-3. Summary of Construction-Related GHG Emissions (CO<sub>2</sub>e)**

	POUNDS/DAY CO <sub>2</sub> e	POUNDS CO <sub>2</sub> e EMITTED ENTIRE CONSTRUCTION	TONS CO <sub>2</sub> e	METRIC TONS CO <sub>2</sub> e
<b>ALL PHASES</b>	<b>18,226.292</b>	<b>1,386,713.383</b>	<b>693.357</b>	<b>629.180</b>

Phase 1 – Grading	Pounds/Day CO <sub>2</sub> e	Pounds CO <sub>2</sub> e Emitted 45 days Construction	Tons CO <sub>2</sub> e	Metric Tons CO <sub>2</sub> e
On-Site	2,460.427	110,719.215	55.360	50.236
Off-Site	3,429.777	154,339.952	77.170	70.027
<b>Total</b>	<b>5,890.204</b>	<b>265,059.167</b>	<b>132.530</b>	<b>120.263</b>

Phase 2 - Pipeline Construction	Pounds/Day CO <sub>2</sub> e	Pounds CO <sub>2</sub> e Emitted 120 days Construction	Tons CO <sub>2</sub> e	Metric Tons CO <sub>2</sub> e
On-Site	3,933.550	472,026.000	236.013	214.168
Off-Site	250.802	30,096.288	15.048	13.655
<b>Total</b>	<b>4,184.352</b>	<b>502,122.288</b>	<b>251.061</b>	<b>227.823</b>

Phase 3 - Plant Construction	Pounds/Day CO <sub>2</sub> e	Pounds CO <sub>2</sub> e Emitted 76 Days Construction	Tons CO <sub>2</sub> e	Metric Tons CO <sub>2</sub> e
2021 (On-Site & Off-Site)	4,098.665	311,498.517	155.749	141.333
2022 (On-Site & Off-Site)	4,053.071	308,033.411	154.017	139.761
<b>Total</b>	<b>8,151.736</b>	<b>619,531.928</b>	<b>309.766</b>	<b>281.094</b>

Source: Tetra Tech, CalEEMOD Results, May 25, 2020

As discussed in Environmental Checklist Section 8.a above, Contra Costa County has an adopted *Climate Action Plan* that includes a number of GHG emission reduction strategies designed to implement AB32.

As a renewable energy source, the proposed RNGPFP is consistent with the BAAQMD Clean Air Plan and the CAP by implementing the following CAP goals:

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Goal 2: Renewable Energy, Increase the Production of Renewable Energy from Small-Scale and Commercial-Scale Renewable Energy Installations
  - Measure RE 1: Alternative Energy Installations
  - Measure RE 2: Alternative Energy Facilities
- Goal 3: Land Use and Transportation
  - Measure LUT 2: Alternative-Fuel Infrastructure, Expand the Use of Alternative Fuels in Vehicle Travel
- Goal 4: Solid Waste, Reduce Waste Disposal
  - Measure W 2: Landfill Management, Reduce Fugitive Methane Emissions and Other GHG Emissions from Solid Waste Landfills.

The proposed RNGPFP would facilitate County-wide GHG emission reduction goals by substantially reducing the emissions of GHG. The proposed project would be in conformance with applicable County and State GHG emission reduction strategies.

**Sources of Information**

- Environmental Management et al., 2020. *Greenhouse Gases - Ameresco IS-MND Section 8.*
- Bay Area Air Quality Management District, 2017. *2017 Bay Area Clean Air Plan: Spare the Air, Cool the Climate.*
- Bay Area Air Quality Management District, 2017. *Air Quality Guidelines; May 2017.*
- Contra Costa County, 2015. *Climate Action Plan.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>9. HAZARDS AND HAZARDOUS MATERIALS – Would the project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

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

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Hazardous material is defined generally in the County Code Chapter 84-63, Article 84-63.422 as “any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment, and includes any material that is listed in the Code of Federal Regulations at CFR Title 49, Section 172.01 (Hazardous Materials Table) as amended from time to time.

Regulatory Setting

The generation, transportation, treatment, storage, and disposal of hazardous waste is governed by the federal Resource Conservation and Recovery Act of 1976 (RCRA). Under RCRA, individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements. In California, the Department of Toxic Substances Control (DTSC) regulates the generation, transportation, treatment, storage, and disposal of hazardous material waste. Hazardous waste regulations establish criteria for the following:

- Identifying, packaging, and labeling hazardous wastes;
- Establish the management of hazardous waste;
- Establish permit requirements for hazardous waste treatment, storage, disposal, and transportation; and
- Identify hazardous wastes that cannot be disposed of in landfills.

These regulations also require hazardous materials users to prepare written plans, such as Hazardous Materials Business Plans, that describe hazardous materials inventory information, storage and secondary containment facilities, emergency response and evacuation procedures, and employee hazardous materials training program. A number of agencies participate in enforcing hazardous materials management requirements, including DTSC, the RWQCB, and the Contra Costa Health Services Hazardous Materials Program (CCHSHMP).

The U.S. Department of Transportation regulates hazardous materials transportation on all interstate roads. Within California, the State agencies with primary responsibility for enforcing federal and State regulations and for responding to transportation emergencies are the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans). Together, federal and State agencies determine driver-training requirements, load-labeling procedures, and container specifications. Although special requirements apply to transporting hazardous materials, requirements for transporting hazardous waste are more stringent, and hazardous waste haulers must be licensed to transport hazardous waste on public roads.



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The CCHSHMP provides comprehensive environmental regulatory compliance inspection services, performs plan reviews and inspections associated with the construction, upgrading, and closure of hazardous materials storage facilities and equipment. Under the authority granted by the State, the CCHSHMP administers the following:

- Aboveground Petroleum Storage;
- California Accidental Release Prevention (CalARP);
- Enforcement;
- Green Business Program;
- Hazardous Materials Business Plans;
- Hazardous Waste Generator Program;
- Hazardous Waste Tiered Permitting;
- Incident Response;
- Industrial Safety Ordinance (ISO);
- Storm Water; and
- Underground Storage Tanks.

Since 2009, Ameresco has operated a LFGTE power plant that processes the LFG by filtration and drying to create fuel used to fire internal combustion generators to produce electricity. The proposed Ameresco RNGPPF would produce RNG and is subject to County Code and implementation requirements of various programs administered by the Contra Costa Health Services Department that pertain to the definition, use, and disposal of hazardous materials, and potential release or threatened of hazardous materials. County regulations, standards, and guidelines are prescribed by:

- Contra Costa County Contra Costa County Code, Chapter 450-8 Risk Management;
- Contra Costa County Code, Chapter 84-63 Land Use Permits for Development Projects Involving Hazardous Waste or Hazardous Materials;
- Contra Costa County Hazardous Materials Area Plan, May 2016; and
- Contra Costa Health Services Hazardous Materials Program.

Potential Hazards

The potential for significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials is related to the facility equipment, safety

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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design features, and the nature of potentially hazardous materials used in the facility. Potentially hazardous materials associated with the RNG processing facility include following:

- Lubricating Oil. Rotating RNG processing machinery require oil for proper lubrication. The system includes oil-filled equipment and on-site storage of replacement oil in 55-gallon drums. Total volume of lubricating oil stored on site would not exceed 275 gallons.
- Waste oil. A double-wall waste oil tank would be provided to handle oil change-outs and other maintenance activities associated with oil lubricated equipment. The waste oil tank would be approximately 1,000 gallons in capacity. The tank would be periodically pumped out by an approved waste hauler when it is full.
- Condensate. Untreated LFG would be cooled to condense water vapor from the LFG for removal from the gas stream. The removed condensate would be collected in a small holding tank (less than 500 gallons) and then pumped back to KCL for disposal.
- Propylene Glycol. Lubrication oil coolers would require chilled water in the cooling loop. The chilled water would contain a small percentage (less than 50 percent) of propylene glycol as a freeze and corrosion inhibitor. The system would include propylene glycol filled equipment and on-site storage of replacement glycol and used glycol. Total volume would not exceed 275 gallons.

The proposed underground four-inch diameter pipeline for conveying the RNG to PG&E would be constructed on existing private landfill property and on contiguous existing PG&E property that is currently approved for, and being utilized by, existing gas and electrical transmission lines. The proposed pipeline has a nominal diameter of four inches and would be approximately 3.4 miles in length. Notably, public access onto the landfill property is strictly controlled and public access to the PG&E property is prohibited.

Regulations for gas transmission pipelines establish pipe strength requirements based on population density near the pipeline. Locations along gas pipelines are divided into classes from 1 (rural) to 4 (densely populated) and are based upon the number of buildings or dwellings for human occupancy. Allowable pipe stresses, as a percentage of specified minimum yield strength (SMYS), decrease as class location increases from Class 1 to Class 4 locations. The proposed pipeline is designed to meet the most stringent class requirement (Class 4) even though the pipeline location allows higher pipe stresses. By designing the pipeline to meet Class 4 standards with a resulting lower allowed pipe stress, the pipeline provides the greatest level of safety for the nearby community.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Consistency Measures

By design, the proposed RNGPFP would be consistent with local plans and policies related to hazardous materials and fire protection. Consistency measures that Ameresco would incorporate into the design, construction, and operation of the RNGPFP include the following. These measures are designed to minimize the potential for significant impacts associated with the proposed project.

*General*

- 1 The applicant shall coordinate with the Contra Costa Health Services Department on compliance with applicable regulations and/or programs pertaining to identification, use, disposal of hazardous materials, emergency response, and notification. These include regulations and programs prescribed by County Code Chapter 450-8 Risk Management; County Code Chapter 84-63 Land Use Permits for Development Projects Involving Hazardous Waste or Material; the Contra Costa County Hazardous Materials Area Plan (May 2016); and documents approved by the Contra Costa Health Services Hazardous Materials Program.

*RNG Processing Facility*

- 2 In accordance with LP89-2020 COA 36.10 (Notification of Plant Upset or Accidental Release) pertaining to the existing LFGTE plant, the operator shall notify the DCD immediately of any RNG processing facility upset that result with accidental leakage or release of processed gas to the atmosphere. A written report of the cause of any plant upset and the corrective measures taken by the facility operator, shall be provided to the DCD within 72 hours after resolving an emergency.
- 3 In accordance with LP89-2020 COA 36.6 (Equipment and System Monitoring), the plant process shall be automatically controlled by a plant-wide programmable logic controller (PLC) control system to operate, monitor, and maintain the RNG process under normal conditions. The control logic includes alarms and shutdowns to safely shut down the process if process conditions are outside the design basis. Any potential waste gas process streams shall be combusted in the plant thermal oxidizer and/or enclosed flare.
- 4 A new automated notification system shall be installed for monitoring the proposed RNGPFP. The system shall notify the operator of an abnormal condition during both attended and non-attended operation and shall provide visual and audible warnings to assist operator response.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- 5 On loss of power or instrument air or other plant upset, the following safety and design measures shall be implemented:
  - Fail-Safe mode of operation shall shut down the processing facility;
  - Emergency stop-push buttons shall be strategically located at the plant entrance/exit to allow shutdown of the facility;
  - Hazardous gas detectors shall be strategically located in the process area to detect gas leaks from the facility; and
  - Seismic sensors shall be installed and in the event of a large earthquake the RNG processing equipment shall be shut down and pipeline valves shall be closed.
  
- 6 A fire detection system shall be provided in accordance with LP89-2020 COA 36.5 (System Safety) and shall include manual pull stations, smoke detectors and rate of rise detectors in electric/control room, methane detectors, and alarm strobes/horns.
  
- 7 In the event of planned maintenance, process upset or other event, the RNG processing facility shall be either manually or automatically shut down and LFG shall be redirected to the existing landfill flares as necessary.
  
- 8 The existing Emergency Response Plan for the power plant shall be updated in accordance with LP89-2020 COA 36.9 (Emergency Response) to include the proposed RNG processing facility equipment, potential hazardous materials, and appropriate response procedures.
  
- 9 The requirements of the Keller Canyon Landfill Stormwater Pollution Prevention Plan (SWPPP) shall be implemented in accordance with LP89-2020 COA 36.11 (Stormwater Pollution Prevention Plan) for water resources protection in the event of a spill of coolant, lubricant, or other products or by-products of the RNG processing facility.
  
- 10 The potential hazards previously identified in the existing LFGTE plant are similar to those anticipated in the proposed RNG processing facility. The existing LFGTE plant includes a hazardous management business plan prepared in accordance with LP89-2020 COA 36.10 (Notification of Plant Upset or Accidental Release). The plan shall be updated to address new aspects of the RNG processing facility equipment and operation. The current plan addresses, business activities, safe handling practices, hazardous material inventory, emergency response and employee training plans.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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*RNG Pipeline*

- 11 The pipeline shall be designed to meet the most stringent design, pipeline class, and safety standards of Class 4 requirements in accordance with 49 CFR.
- 12 Emergency shut-off valves, pressure monitoring devices and other control equipment shall be incorporated into the design of the pipeline. The system shall include devices required by 49 CFR 192 and as deemed appropriate by the Applicant. These devices shall be installed on the pipeline at locations and distance intervals specified in federal regulations.
- 13 The pipeline system shall be designed to handle a maximum allowable operating pressure (MAOP) of 680 pounds per square inch gauge (psig). Pressure and flow shall be monitored and any change outside of normal operating parameters shall shut off the pipeline and when necessary shut down the RNG processing facility.
- 14 The location of the pipeline throughout its route shall be marked by required above-ground signage and other notification at locations and distance intervals specified in federal regulations.
- 15 An appropriate cathodic protection system shall be designed and installed on the pipeline. This system shall protect the pipeline from corrosion, foreign currents, etc. All system components including pipeline crossings, electrical systems in the area, and isolation requirements shall be considered and included in the design and installation.

The consistency measures 1 through 15 above would minimize potential foreseeable hazards during operation or accidental release of hazardous materials in the event of a plant upset. The proposed project involves processing of LFG through the cooling, filtering, compressing, membrane separation, and adsorption. The processing of LFG does not involve chemical reactions. No runaway temperatures (i.e. uncontrolled) can occur. Potential excess pressures are handled by pressure relief valves. Based on these considerations, potential hazards to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

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

Human exposure to a hazardous substance could occur through accidental release of a hazardous substance into the environment can cause contamination of soil, surface water, and groundwater,

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in addition to any toxic fumes that might be generated. If not cleaned up properly, the hazardous substances can migrate into the soil or enter a local stream or channel, causing contamination of soil and water. Human exposure to contaminated soil or water can have potential health effects depending on a variety of factors, including the nature of the contaminant and the degree of exposure.

As discussed in Environmental Checklist Section 9.a above, the design, construction, and operation of the proposed RNG processing facility and pipeline would be subject to federal, State, and local regulation. The proposed RNG processing facility would be located northwest of the existing LFGTE plant in a location that would be approximately 0.32 mile from the nearest residences. Thus, the risk of accidental release of hazardous materials at the proposed RNG processing facility would be less than significant.

On the other hand, sections of the pipeline would be on existing PG&E property within approximately 50 feet from the nearest residences. Thus, the proposed pipeline is designed to meet the most stringent class requirement (Class 4) under federal law.

Pipeline Hazard Analysis

A hazard analysis of the proposed pipeline was conducted in accordance with applicable federal, state, and local regulations. The analysis includes assessment of three related and overlapping factors: High Consequence Area, Class Location, and Potential Impact Radius.

*High Consequence Area (HCA)*

High Consequence Areas are segments of pipelines in which the surrounding areas are more densely populated. HCAs are required to have more stringent requirements to design, construct, and manage the integrity of the pipeline. For the proposed RNG pipeline, federal regulations at 49 CFR 192 were used to determine the HCA. The only HCA identified for this pipeline coincides with the identified Class 3 location where the pipeline would be in PG&E property, within approximately 50 feet of single-family residences and the City of Pittsburg Water Treatment Plant. The HCA designation does not alter the design requirements for the system, because the pipeline would be designed to meet the most stringent requirements of Class 4.

*Class Location*

Class Location is a measure of human activity near a pipeline. It is used to define design criteria, safety factors, and other construction related considerations. Class Locations for the proposed pipeline have been determined using the methodology defined in 49 CFR 192. According to federal classification, the pipeline would be on Class1/non-HCA locations over first 2.6 miles of

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the pipeline route through the SBA. The pipeline would be considered to be in a Class 1 location due to a lack of buildings for human occupancy. Once the pipeline is in PG&E property, it would run parallel to an existing PG&E gas pipeline and terminate at the Ameresco interconnect station adjacent to the existing PG&E valve lot. According to federal classification, this 0.8-mile section of pipeline would be in a Class 3/HCA location due to the existence of single-family residences and buildings for human occupancy. Despite these different class designations, the pipeline would be designed to exceed the most conservative requirements stipulated by 49 CFR 192 in the interest of public safety. As stated previously, the entire pipeline would be designed and constructed to meet Class 4 requirements as described in Consistency Measure 11.

*Potential Impact Radius (PIR)*

Potential Impact Radius (PIR) is a calculation that determines the size of the area that would be impacted if there were to be an incident. The PIR is defined as the radius of a circle within which the potential failure of a pipeline could have significant impact on people or property and are related to identifying HCAs as defined by 49 CFR 192 and the Pipeline and Hazardous Materials Safety Administration. The PIR for the proposed pipeline was calculated as 72 feet.

Figure 9-1 illustrates the relationship of the PIR to the proposed pipeline. Figure 9-2 (9100) illustrates the 72-foot PIR for the entire pipeline system. The PIR is shown in orange shading. A detailed illustration of the 72-foot PIR for the PG&E property from the point where the pipeline would enter PG&E property to a point just north of the Contra Costa Canal is shown on Figure 9-3 (9101). The section of pipeline from north of the Contra Costa Canal to the PG&E STANPAC facility is shown on Figure 9-4 (9102).

While the PIR is typically used to determine the safety factors that would be applied to the pipeline design, it is not as applicable for identifying the potential for extreme case failures. PIR refers to the area that may be impacted due to a catastrophic failure of the pipeline, such as a rupture or an explosion. The proposed pipeline would have a PIR that is less (i.e. shorter in length) than that of the existing PG&E underground gas infrastructure and would be situated farther away from residences than the existing gas infrastructure. Thus, the PIR for the proposed pipeline does not pose any additional risk to the nearby area.

Pipe Leakage vs. Rupture of the Proposed Pipeline

As described earlier, the pipeline would be constructed to the most stringent standards of Class 4. The pipeline material, strength, welding techniques, and construction inspection/quality assurance would meet all applicable State and federal regulations. The pipeline segment to be located on the landfill property would be constructed at an average depth of four feet. For the pipeline segment to be constructed in PG&E property, the pipeline would be constructed at a

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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minimum depth of four feet, to a depth of up to 50 feet in order to meet minimum clearance specifications for the Contra Costa Canal. Generally, the deeper the pipe is buried in combination with low SMYS results in a higher probability of pipe leakage versus rupture.

Potential rupture failure is a function of pipeline design, MAOP, hoop stress i.e. the percent SMYS of the pipe, pipeline material, installation and welding techniques, the age and condition of the pipe, extent of internal pipe corrosion, and the depth at which the pipeline would be buried. Generally, pipelines operating at a sufficiently low hoop stress (below 20% to 30% SMYS) are less likely to fail in rupture mode and more likely to fail in leak mode. The proposed pipeline would be designed to operate at approximately 18.5 percent SMYS. Other factors related to susceptibility of pipe rupture versus leakage included the following:

- Low temperatures;
- Internal corrosion;
- History of pipe seam failures;
- History of pressure surges;
- Pre-1980 vintage pipe;
- Bare pipe or cathode protection not monitored and not piggable;
- Pressure test of < 1.4 MAOP; and
- Soil movement mechanism (e.g. seismic).

Most of the factors listed above do not apply to the proposed RNG pipeline. The proposed pipeline system would be tested to 1.5 times the MAOP (greater than the 1.4 MAOP threshold) and the potential for soil movement would be addressed by the consistency measures described in Environmental Checklist Section 9.a related to seismic design and post-earthquake event monitoring.

*Design Criteria*

The design of the pipeline would meet and/or exceed all regulatory requirements and/or industry standards. Design criteria provided below meet the regulations required for the proposed project. Those items that exceed stipulated requirements are identified.

- The pipeline will be designed to meet or exceed Class 4 requirements for its entire length from the RNG processing facility to the PG&E valve lot. This design criterion is above and beyond the required criteria for the project.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- The pipe itself will be designed to operate under 20 percent SMYS, which places the proposed pipeline in a lower risk category per federal Pipeline and Hazardous Materials Safety Administration guidelines, and requires less stringent test requirements; however, the pipeline will be tested to 1.5 times the MAOP or approximately 1,020 psig in accordance with regulations governing design to meet higher risk. If flanges and/or flanged assemblies are required, they may be the pressure limiting factors of the system. The design will ensure that the flanged systems and any other appurtenances meet the design requirements.
- The system will be designed to handle a MAOP of 680 psig to be consistent with the PG&E pipeline that would receive the RNG. Relief systems at the discharge of the gas compression and before entering the pipeline would be included as required to ensure the pipeline does not experience an over-pressurized event.
- The system will be designed to operate under ambient temperature conditions of – 20° F to 150° F.
- The pipeline will be buried to a minimum of four feet below grade. This exceeds the three feet specified in regulations. The pipeline will have at least five feet between adjacent structures/facilities.
- The pipe to be used in the project will be 4.500" OD, 0.237" WT, GR B. With a MAOP of 680 psig, this corresponds to the pipeline operating at approximately 18.5 percent of SMYS.
- Emergency shutoff valves, pressure monitoring devices, and other control equipment will be incorporated into the design of the system as required by required by 49 CFR 192 or as deemed appropriate by the applicant.
- The RNG transported through the pipeline will be continuously monitored before it enters the pipeline to verify it meets gas quality standards required to prevent internal corrosion of the pipeline. No internal corrosion monitoring facilities have been included in the design. No special metallurgy (for hydrogen sulfide or other potential corrosives) will be specified or included in the design.
- To prevent galvanic corrosion of the pipeline, an appropriate cathodic protection system will be designed and installed on the pipeline. Cathode protection is a method used to protect steel pipeline from corrosion, foreign currents, etc. All system components including pipeline crossings, electrical systems in the area, and isolation requirements will

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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be considered for cathode protection and included in the design and installation as needed.

- The pipeline design will include appropriate roping (bending stress) and wheel loading calculations.
- The appropriate pipeline coating system, Fusion Bond Epoxy, will be specified.
- The applicant will work with PG&E engineers to meet tie-in requirements into their system(s) as required by agreement and the CPUC. PG&E will organize and implement any clearance requirements for their systems.

*Pipeline Operations and Maintenance Manual*

In addition to the design criteria, the applicant would incorporate the pipeline system into its Operation and Maintenance Manual (O&M manual) before the new pipeline system is placed in operation and would fully train operators on the pipeline system. Operators would be trained on how the pipeline system is to function and how to make adjustments or corrections to the system in upset or emergency conditions. Required maintenance and inspection of the system would take place as required by the O&M manual.

*Pipeline System Sensors*

Sensors in the pipeline system would detect an incidence of pipe leakage or rupture. Should either of these events occur, the system would shut down accordingly and the system operators would be notified. Ruptures or explosions are almost always possible only when a pipeline operates at a stress level higher than 20 percent SMYS. In the proposed project, the pipeline would be designed to operate at less than 20 percent (at approximately 18.5 percent) SMYS, and therefore, any incidents that might be possible would almost always be a leak rather than a rupture.

A leak would be significantly less consequential than a rupture. In general, natural gas is believed to be less hazardous to the public than petroleum products because it is transported at lower pressures and, when released, rises and dissipates into the atmosphere. In the case of the proposed project, at 680 psig the gas would rise and dissipate rapidly during a pipe leak. Further, gas has a higher flashpoint and is not as flammable compared to petroleum products such as gasoline. Natural gas dissipates in air while petroleum products/vapors collect low on the ground where the vapors have the potential to be ignited.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Factors Affecting Pipeline Safety

Factors that affect potential safety impacts of the proposed pipeline include the following:

- All federal, State, and industry standards will be met or exceeded;
- The design will be governed by Class 4 criteria, which is more conservative than the pipeline's actual classification and provides a higher safety factor;
- The pipeline will be designed around the conventional wisdom that a pipeline operating under 20 percent SMYS would leak rather than rupture, allowing any damage to be detected and repaired before a rupture or fire could occur;
- The route of the pipeline will be located either within existing landfill property or in an existing electric and gas utility property;
- The pipeline will be buried deeper than required, and inspection and testing during construction will be extensive, including x-ray tests of 100 percent of welds;
- The pipeline will be designed to allow internal inspection on a regular basis to reduce the possibility of unmitigated internal corrosion of the pipe; and
- The applicant will apply its significant experience with safely operating pipelines that carry RNG in many locations across the country.

Given these factors, the potential impacts of the pipeline due to accidental release of hazardous materials, explosion, or wildfire from foreseeable upset and/or accident conditions (such as pipeline rupture) would be less than significant.

- c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? **(No impact)***

Fourteen (14) schools are in the Pittsburg area within a 4-mile radius surrounding the project site; however, there are no schools within one-quarter mile of the proposed project. The closest schools are Royal Oaks Academy (private) and Rancho Medanos Junior High School, located approximately 1.2 miles and 1.6 miles, respectively, from the project site. Thus, the proposed project would have no significant impacts associated with safety hazards due to proximity within one-quarter mile of an existing or proposed school.

- d) *Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? **(No impact)***

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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A review of regulatory databases maintained by County, State, and federal agencies found no documentation of hazardous materials violations or discharge on the subject property. Thus, there would be no impact.

- e) *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No impact)*

The project is not located within 2 miles of an airport. The nearest airport is Buchanan Field Airport, which is approximately 6.6 miles west of the project site. Therefore, the project would have no impact.

- f) *Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than significant)*

The Ameresco RNGPFP would be located on portions of the KCL Primary Area, the SBA, and the contiguous PG&E-owned utility corridor. Operational access to the RNGPFP would be from the KCL driveway at 901 Bailey Road, which is a major arterial in the Pittsburg area. Operation of the RNGPFP would be conducted by two employees, and therefore, the impact of RNGPFP operation on emergency response or emergency evacuation via Bailey Road would be minimal.

During the 12 to 14-month construction period, there would be one staging location on KCL property and two locations on the PG&E property for which access may be required from the landowners or City of Pittsburg. The locations include:

- John Henry Johnson Parkway to Ripple Rouge Road (near the Diablo Valley Radio Controllers' miniature airstrip) to access a laydown area on KCL property;
- Through an existing access gate located near the intersection of Alta Vista Circle and Alta Vista Court to provide access to the PG&E property; and
- Via the parking lot of the former Delta View Golf Course, located at the end of Golf Club Road to provide access to the PG&E valve lot.

The proposed project would not require any road closures or change road configurations. Thus, construction of the proposed project would not impair implementation of or physically interfere with any emergency response plans. Accordingly, the proposed project would have a less than significant impact on emergency response of emergency evacuation.

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



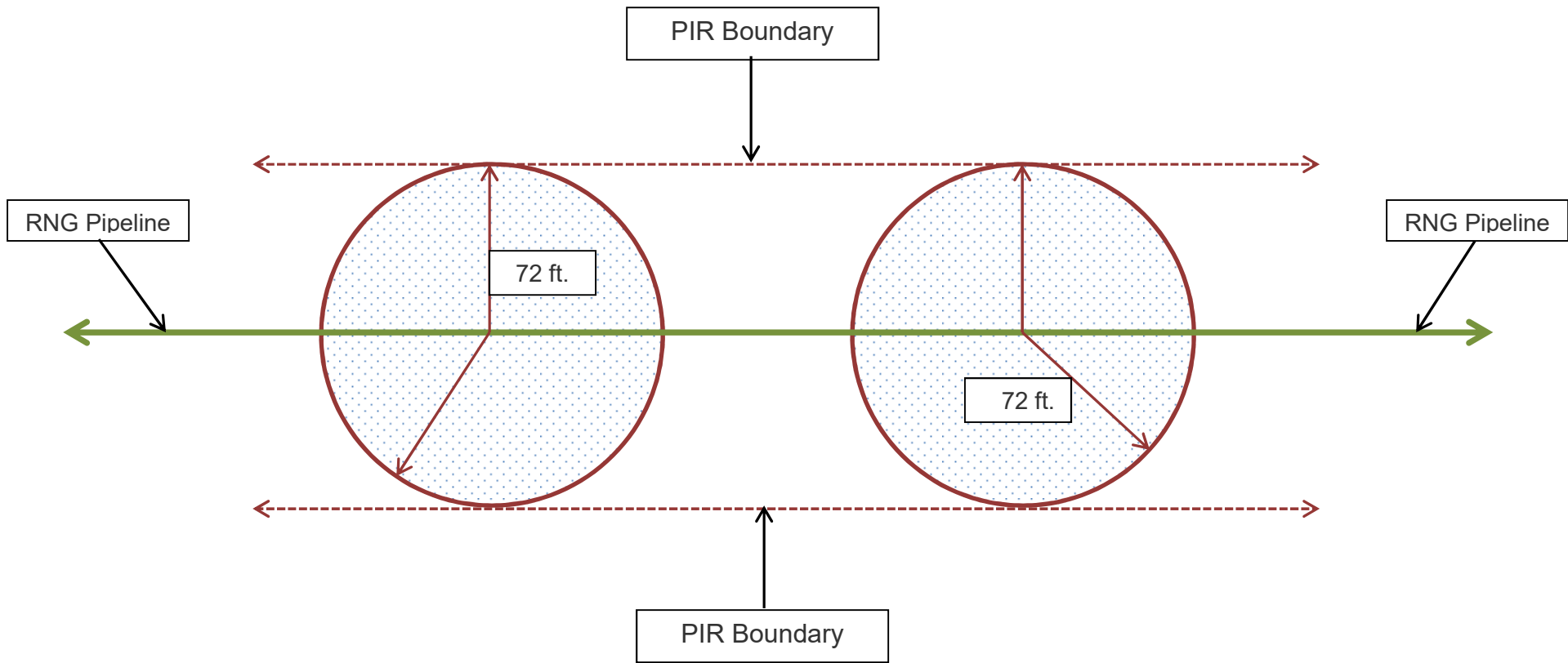
Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The project site is 1.7 miles northwest of the Concord Hills and six miles north of Mount Diablo State Park. The project site, and the neighboring open space and park lands are in a high fire hazard severity zone. However, the potential for wildfires originating from the RNG processing facility or pipeline is greatly minimized by the consistency measures discussed in Environmental Checklist Section 9.a and the design criteria described in Environmental Checklist Section 9.b. In addition, due to its location in a high fire hazard severity zone, project implementation would conform to California Building Code Chapter 7A (Materials and Construction Methods for Exterior Wildfire Exposure) and California Fire Code Chapter 47 (Requirements for Wildland-Urban Interface Fire Areas), which would reduce the risk of loss, injury or death from wildland fires. With implementation of these consistency measures and design criteria, and adherence to the applicable requirements of California Building Code Chapter 7A and California Fire Code Chapter 47, the potential for the Project to expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires would be less than significant.

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- Contra Costa County General Plan, 2005-2020. *Transportation and Circulation Element*.
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- U.S. Code of Federal Regulations (CFR) Part 49, Sections 192.50 and 192.903.

**Figure 9-1**  
**Ameresco Keller Canyon RNG Pipeline**  
**Potential Impact Radius (PIR) of 72 feet**



Source: Ameresco, May 2020.





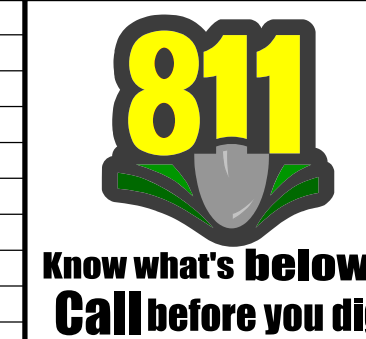
FIGURE 9-2

PIPELINE DESIGNED FOR CLASS 4 - POTENTIAL IMPACT RADIUS = 72 FT.

SCALE: 1" = 400'

LEGEND:	
— G —	-- (E) PG&E GAS TRANSMISSION
— G —	-- (P) 4" RNG
— G —	-- PIR AREA - PIPELINE DESIGNED FOR CLASS 4

		A	4/15/20	LPK	POTENTIAL IMPACT RADIUS EXHIBIT						
		REV.	DATE	BY	ORDER	ENG	DATE	BY	DWG NO.	TITLE	
BOM NO.		DESCRIPTION (HORIZONTAL DISTANCE)			QTY	REVISIONS				REFERENCE DRAWINGS	
SUMMARY OF MATERIALS						REVISIONS				REFERENCE DRAWINGS	



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 RNG PROCESSING FACILITY AND PIPELINE

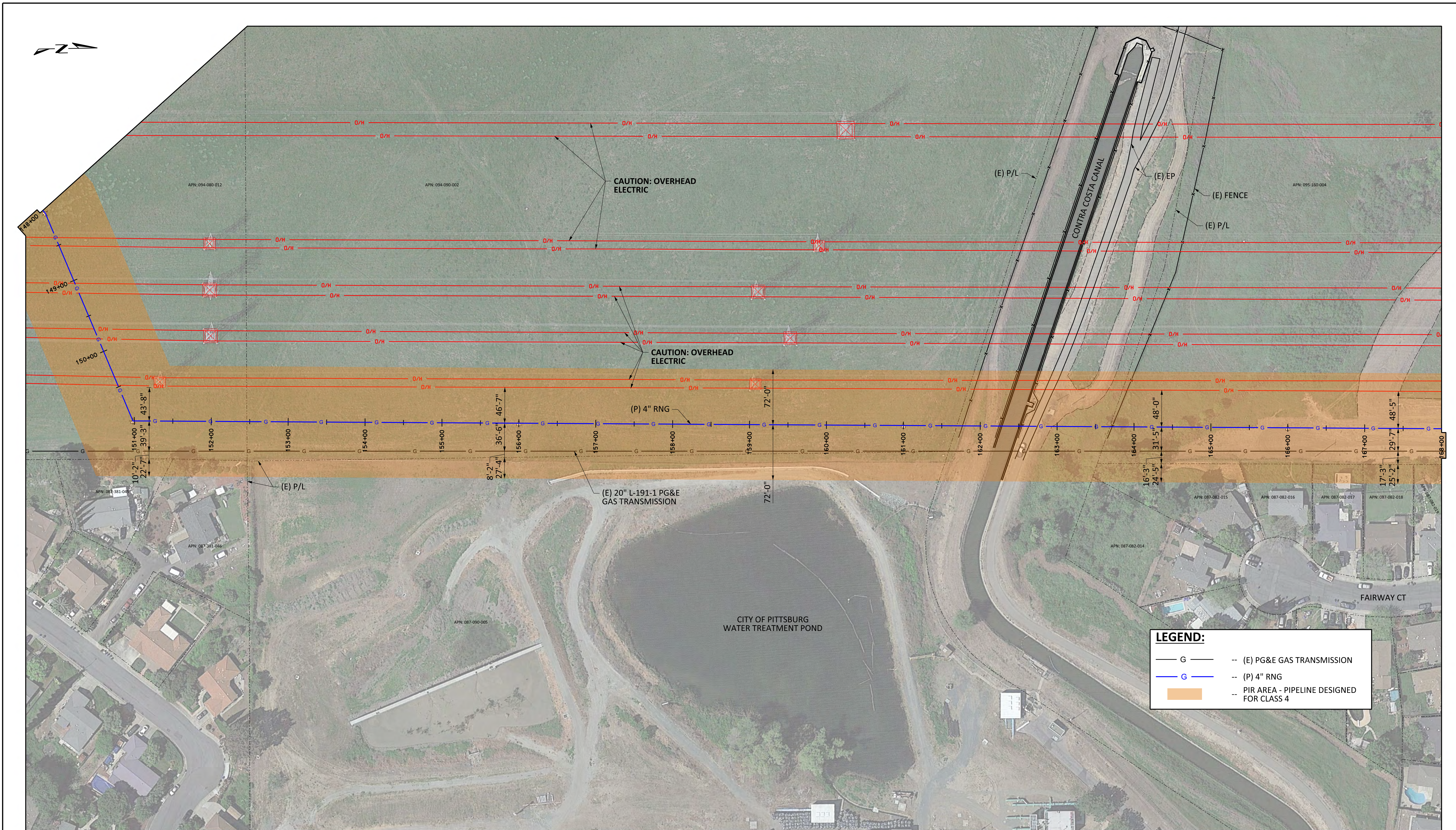
PITTSBURG, CONTRA COSTA COUNTY CALIFORNIA

DRAWN BY: L. KISELINSKI  
 CHECKED BY: R. WAMBLE

SCALE: AS SHOWN  
 DATE: 4-15-2020

PROJECT ENG / PROJECT MGR: JARED SHANKS/HAYTHAM HANTASH  
 FILE NO.: 9100





**FIGURE 9-3 PIPELINE DESIGNED FOR CLASS 4 - POTENTIAL IMPACT RADIUS = 72 FT.**  
SCALE: 1" = 60'

BOM NO.		DESCRIPTION (HORIZONTAL DISTANCE)		QTY	REV.	DATE	BY	ORDER	ENG	DATE	BY	APPROVED	DESCRIPTION	DWG NO.	TITLE
SUMMARY OF MATERIALS					REVISIONS					REFERENCE DRAWINGS					



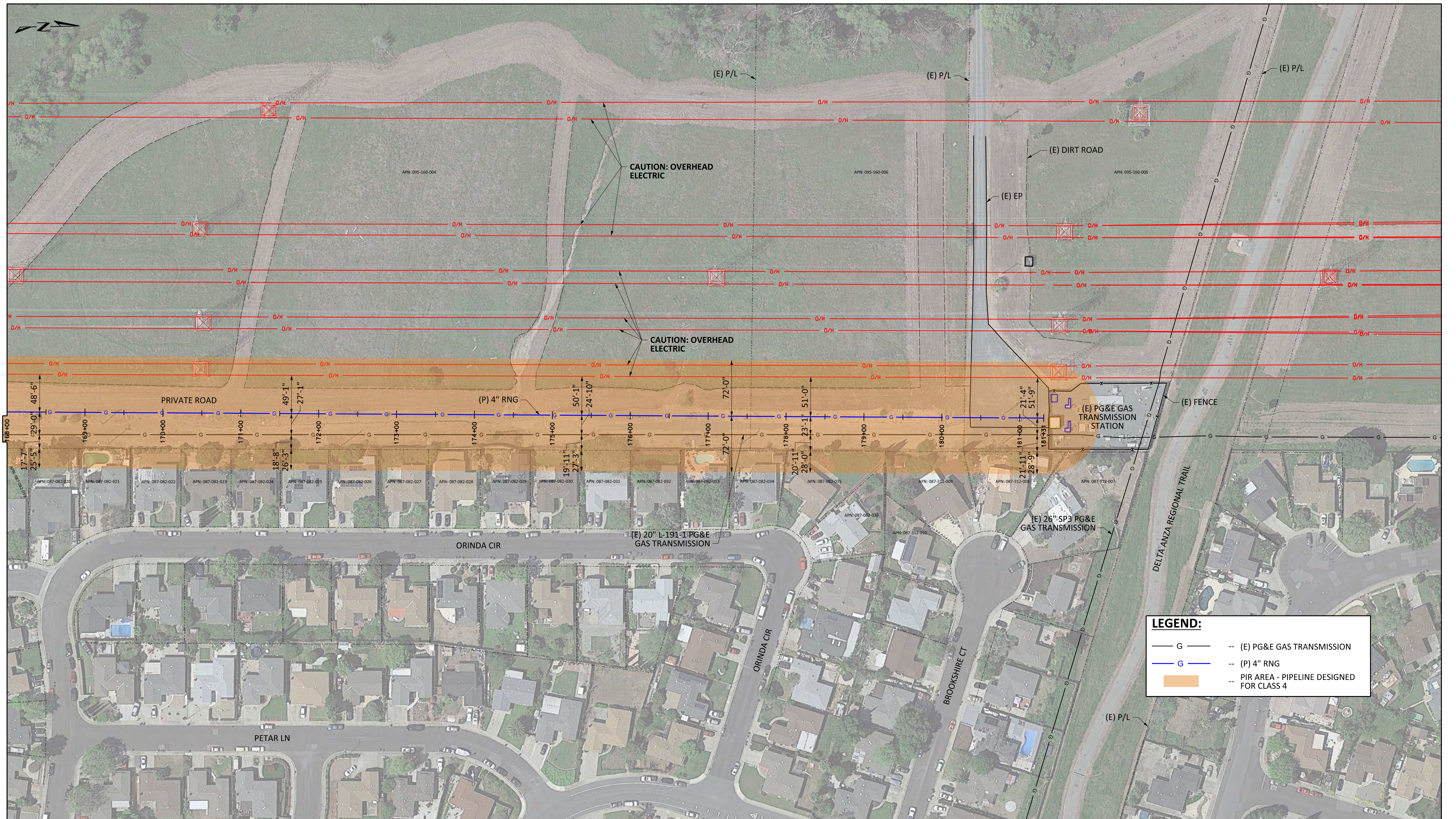
**AMERESCO KELLER CANYON RNG LLC  
RNG PROCESSING FACILITY AND PIPELINE**

PITTSBURG, CONTRA COSTA COUNTY CALIFORNIA

DRAWN BY: L. KISELINSKI CHECKED BY: R. WAMBLE SCALE: AS SHOWN DATE: 4-15-2020

PROJECT ENG / PROJECT MGR: JARED SHANKS/HAYTHAM HANTASH FILE NO.: 9101



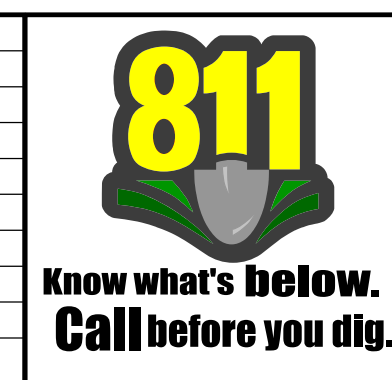


**FIGURE 9-4**

**PIPELINE DESIGNED FOR CLASS 4 - POTENTIAL IMPACT RADIUS = 72 FT.**

SCALE: 1" = 60'

SUMMARY OF MATERIALS			REVISIONS			REFERENCE DRAWINGS						
BOM NO.	DESCRIPTION (HORIZONTAL DISTANCE)	QTY	REV.	DATE MADE	BY	ORDER	ENG	DATE APPROVED	BY	DESCRIPTION	DWG NO.	TITLE



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**AMERESCO**  
Green • Clean • Sustainable

**AMERESCO KELLER CANYON RNG LLC  
RNG PROCESSING FACILITY AND PIPELINE**

PITTSBURG, CONTRA COSTA COUNTY CALIFORNIA

DRAWN BY: L. KISELINSKI  
CHECKED BY: R. WAMBLE  
PROJECT ENG./PROJECT MGR: JARED SHANKS/HAYTHAM HANTASH

SCALE: AS SHOWN  
DATE: 4-15-2020  
FILE NO.: 9102



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>10. HYDROLOGY AND WATER QUALITY – Would the project:</b>				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially alter the existing drainage pattern of 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

- a) *Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality? (Less than significant)*

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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The proposed RNG processing facility site is located in the northern portion of the Keller Canyon watershed. The KCL comprises its own watershed encompassing approximately 573 acres. All of the active KCL area runoff is collected and conveyed to the existing KCL terminal detention basin located approximately 750 lineal feet east of, and down slope, of the proposed RNG processing facility site. The terminal detention basin greatly reduces the volume of peak runoff leaving the Keller Canyon watershed. Development of proposed RNG processing facility site would add approximately 84,000 square feet (1.9 acres) to the Keller Canyon watershed.

As detailed below under Drainage Control Measures, the drainage system for the proposed processing facility would be designed to convey storm runoff to the existing terminal detention basin. During operation, the RNG processing equipment would not generate any form of wastewater. Also, as described below, the Ameresco RNGPFP would implement applicable measures from Keller Canyon Landfill Waste Discharge Requirements (WDR) Order No. 01-040 and National Pollution Discharge Elimination System (NPDES) Permit #2-7S006887 as amended.

Drainage Control Measures

By design, the proposed RNGPFP would be consistent with local plans and policies related to water quality and drainage. If the proposed project is approved, drainage control measures that the applicant would incorporate into the design, construction, and operation of the RNGPFP include the following. These measures are designed to minimize the potential for significant impacts associated with the proposed project.

- 1 For the RNG processing facility site, a new central stormwater drainage system shall be designed and constructed to convey surface runoff safely and efficiently from the project site to the existing KCL terminal detention basin.
  
- 2 For the RNG processing facility project site and pipeline, components of the Surface Water Management and Sediment Control Plan as described in LP89-2020 COA 18.4 shall be implemented as appropriate. Components will include a Stability Analysis of proposed cut and fill slopes, and implementation of Best Management Practices (BMPs) designed to prevent substantial erosion on slopes on the project site and reduce the amounts of water-borne materials from reaching surface waters. BMPs to be implemented that are in accordance with those identified in COA 18.4 include the following.
  - a) Primary grading for the RNG processing facility building site, and the construction of site slopes shall be performed during the April through October low rainfall season.
  
  - b) If grading must be done during rainy periods, or if erosion is occurring on previously graded areas, the applicant shall take corrective actions for temporary flow



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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restriction, which may include the installation of ground cloth or the placement of hay bales.

- c) The applicant shall plant ground cover on graded areas which are not to be developed within 90 days. The ground cover shall be consistent with the Keller Canyon Landfill Landscaping Plan.
  - d) Ditches and swales for conveying surface runoff shall be lined or planted to limit erosion.
  - e) Erosion to ditches or gullies used to convey runoff shall be corrected by use of appropriate measures such as energy dissipators or rip rap.
- 3 For the RNG processing facility project site and pipeline, applicable measures from WDR Order No. 01-040 and NPDES Permit #2-75006887 as amended shall be incorporated into construction documents and the KCL SWPPP.
  - 4 For the portion of the project area in PG&E property for which horizontal directional drilling (HDD) shall be performed, a frac-out plan shall be prepared to address the unintentional return of drilling fluids to the ground surface during HDD. The frac-out plan shall address at a minimum: a description of work, training, equipment, drilling procedures, and agency coordination and notification. The frac-out plan shall be approved by the appropriate agencies. The applicant shall obtain an approved frac-out plan prior to the issuance of a grading permit or building permit, whichever occurs first.

With these drainage control measures applied by the applicant, the proposed project would have less than significant impacts on water quality or waste discharge.

- b) *Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? (Less than significant)*

The proposed project would have no impacts associated with groundwater pumping. Any water necessary for the proposed RNG processing facility would be supplied by an existing 342,300-gallon water tank located south of, and adjacent to, the processing facility site.

Regarding groundwater recharge, at the RNG processing facility site, an earth fill embankment would be constructed to form a relatively flat pad for the RNG processing equipment. The equipment would be mounted on skids with individual concrete slab foundations and surrounded by gravel-covered access corridors and a maintenance road. As a result, the proposed RNG

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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processing facility would increase the amount of impervious surface on the site by less than the 84,000 square feet (1.9 acres), which is the area of the pad. Final grading would ensure positive drainage to a central drainage pipe that would convey surface runoff to the existing terminal detention basin. As discussed in Environmental Checklist Section 10.a above, the proposed project would convey storm runoff from the new pad to the existing terminal detention basin. The detention basin, by design, retains stormwater and has sufficient capacity to accept runoff from increased impervious surface area at the proposed RNG processing facility site. Thus, directing all storm runoff from the RNG processing facility to the detention basin would ensure that the project would have a less than significant impact on groundwater recharge.

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

i) *Result in substantial erosion or siltation on- or off-site? (Less than significant)*

As stated in Environmental Checklist Section 10.b above, the proposed RNG processing facility would increase the amount of impervious surfaces on the site by approximately 84,000 square feet (1.9 acres). Storm runoff from this area would be conveyed to the existing terminal detention basin of the landfill. Thus, the proposed RNG processing facility would not substantially alter the existing drainage pattern of the processing facility site. Further, as described in the preceding Environmental Checklist Section 10.a, the applicant would incorporate drainage control measures into the design, construction, and operation of the RNGPFP to minimize the potential for significant impacts. Accordingly, the proposed project would direct runoff from new impervious surfaces to existing drainage facilities and would not cause substantial erosion or siltation.

ii) *Substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site? (Less than significant)*

A hydrologic analysis was completed in 2019 to evaluate the project's potential to substantially increase the rate or amount of surface runoff that could result in on or off-site flooding. This analysis utilized a HEC-HMS hydrologic model that was prepared in 2011 to examine the feasibility of modifying the landfill stormwater handling system by adding an up-stream basin and modifying the terminal detention basin. That project has been set aside and there are currently no plans to modify the stormwater handling system in this manner. The 2011 model, however, is representative of the baseline conditions for the proposed RNGPFP. The 2011 HEC-HMS model was used to assess the area of the sub basin that includes the proposed RNG processing facility and pipeline. The proposed RNG processing facility site would mostly be impervious area, which would be consistent with surface assumptions in the

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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2011 base model. The hydrologic model assumes very little infiltration and no initial rainfall absorption prior to runoff. Thus, the 2011 and the 2019 updated model very conservatively assumes the entire area is impervious. The soils within the landfill drainage are primarily clay-rich, adobe soils that are characterized by high runoff and extremely low permeability. All runoff calculations shown in Table 10-1 assume low rainfall infiltration and high runoff. The results of the modeling for the output of the existing terminal detention basin with the addition of the proposed RNG processing facility area are shown in Table 10-1.

**Table 10-1. Results of Hydrologic Modeling for Proposed RNG Processing Facility**

Recurrence Interval	Existing Conditions (cfs)	Post Project (cfs)	Change (cfs)	Change (%)
2 - year	90.1	90.3	0.2	0.2
5 - year	111.8	112.1	0.3	0.3
10 - year	142.5	143.7	1.2	0.8
25 - year	178.8	180.2	1.4	0.8
50 - year	244.4	247.4	3.0	1.2
100 - year	281.2	283.9	2.7	0.9
1,000 - year	531.0	536.6	5.6	1.0

Source: Questa Engineering, October 2019

The results of the 2019 hydrologic modeling shown in Table 10-1 show that the proposed RNG processing facility site would increase surface runoff by a maximum of approximately 1.2 percent for the 50-year recurrence interval. All runoff from the proposed RNG processing facility would be collected and directed into the existing drainage system of the landfill. The 1.2percent or lower increase in surface runoff would not be a substantial increase in the rate or amount of surface runoff, and therefore, would have a less than significant impact on the existing landfill drainage system and would not result in on or off-site flooding.

- iii) *Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? (Less than significant)*

As discussed in Environmental Checklist Section 10.c.ii above, there would be no substantial increase in the rate or amount of surface runoff in a manner that would result in on or off-site flooding. Only a minor addition of a central drainage pipe would be needed to safely and efficiently convey runoff to the existing terminal detention basin. The results of the 2019 hydrologic modeling study shown in Table 10-1 demonstrate that the pad area for the



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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proposed RNG processing facility, would increase surface runoff leaving the pad area by approximately 1.2 percent for the 50-year recurrence interval.

The estimated 1.2 percent or lower increase in peak flows resulting from the installation of the proposed RNG processing facility would have a less than significant impact on the existing landfill drainage system in general, and on drainage conditions downstream of the proposed RNG processing facility in particular. The estimated 1.2 percent or lower increase in peak flows does not warrant any special mitigation or significant modification of the existing drainage system beyond that which is currently in place for the landfill. The proposed additional impervious surface area of approximately 84,000 square feet (1.9 acres) to the Keller Canyon watershed would not have significant impacts on the operation of the existing terminal detention basin.

*iv) Impede or redirect flood flows? (Less than significant)*

The project site is not within a 100-year flood hazard area. The project site is located FEMA (Federal Emergency Management Agency) Flood Map 06013C0118G. As shown on the FEMA Flood Map, land in the KCL Primary Project Area, SBA, and PG&E utility corridor is classified as being in Zone X, which is considered to be an area of minimal flood hazard. Thus, the proposed project would have a less than significant impact on flood flows.

*d) In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation? (No impact)*

As discussed in Environmental Checklist Section 10.c.iv above, the project site is not within a 100-year flood hazard area. The project site is also not in an area that would be susceptible to inundation by seiche or tsunami. The California Geological Survey (2009) has projected and mapped the tsunami hazard posed by a tidal wave that passes through the Golden Gate and into San Francisco Bay, San Pablo Bay and Carquinez Strait. As mapped, the tsunami hazard in Contra Costa County is limited to the lowland areas immediately adjacent to these waterways. A seiche is a water wave in a standing body of water such as a large lake or reservoir that is caused by an earthquake, a major landslide, or strong winds. This hazard does not exist within the project vicinity as there are no large lakes or reservoirs in the area.

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

As discussed in Environmental Checklist Section 10.a above, by design, the proposed Ameresco RNGPFP would implement applicable measures from Keller Canyon Landfill Waste Discharge Requirements (WDR) Order No. 01-040 and National Pollution Discharge Elimination System

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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(NPDES) Permit #2-7S006887 as amended. Also, there is no groundwater management plan in effect for the KCL. Thus, the proposed project would not conflict with a water quality control plan or groundwater management plan.

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- Contra Costa County General Plan, 2005-2020. *Safety Element*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>11. LAND USE AND PLANNING – Would the project:</b>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

a) *Would the project physically divide an established community? (No impact)*

As discussed in Section 8 (Description of Project), the Ameresco RNGPFP is a proposed renewable natural gas processing facility and pipeline that includes construction and operation of a proposed RNG processing facility and an underground RNG transmission pipeline. The footprint of the proposed RNG processing equipment would cover an area of approximately 48,000 square feet (1.1 acres) on a new level pad of approximately 84,000 square feet (1.9 acres). The estimated total length of the underground pipeline is approximately 3.4 miles. The pipeline would be a four-inch diameter steel-wrapped pipe buried underground with four feet of minimum cover.

As described in Section 9 (Surrounding Land Uses and Setting), the RNGPFP would be located almost entirely on KCL property. The KCL property is approximately 2,345 acres, which consists of a Primary Project Area of approximately 1,596 acres and an SBA of approximately 750 acres. The SBA includes two non-KCL parcels including a 155.8-acre open space parcel and a 4.59-acre water tank parcel; however, only the KCL-owned parcels in the SBA are considered for the proposed project. A portion of the RNG transmission pipeline would be in PG&E property east of, and contiguous to, the SBA. The PG&E property consists of five parcels that total approximately 212 acres, including four parcels in the City of Pittsburg that total approximately 52 acres and one parcel of approximately 160 acres in unincorporated Contra Costa County.

Land immediately surrounding the Ameresco RNGPFP includes the above described KCL Primary Project Area and SBA and the adjoining PG&E utility corridor. The Concord Hills open space is adjacent to KCL to the south and southeast. The nearest developed non-landfill land uses are single-family residences located off the KCL property approximately 0.32 mile northeast of the proposed project site; single-family residences located approximately 0.40 mile west of the proposed project site west of Bailey Road; and single-family residences and the City of Pittsburg Water Treatment Plant located east of the project site and adjacent to the PG&E utility corridor.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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The proposed RNGPFP would not alter KCL operations, use of the PG&E utility corridor, or any off-site uses, and therefore would not divide an established community. Thus, there would be no impact.

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

As stated in Environmental Checklist Section 11.a above, the Ameresco RNGPFP includes a proposed RNG processing facility and an underground RNG transmission pipeline. As discussed in Section 8 (Description of Project), the RNGPFP would significantly increase the utilization of LFG produced at KCL for energy, by processing the landfill gas to sufficient quality to allow it to be placed into the regional natural gas network. The RNG pipeline would carry the RNG from the new processing facility to a connection with the PG&E natural gas transmission pipeline network northeast of the site.

As described in Section 9 (Surrounding Land Uses and Setting), the RNGPFP would be located almost entirely on KCL property, which includes a Primary Project Area and an SBA. The Primary Project Area has a LF, Landfill, General Plan Land Use designation and is in the A-3 Heavy Agricultural District. Along with open space, active landfill operations occur within the Primary Project Area, which includes landfill infrastructure, administration, operations, and waste disposal. The SBA has an OS, Open Space, General Plan Land Use designation and is in the A-4 Agricultural Preserve District. The SBA is conserved open space located directly east of, and contiguous to, the Primary Project Area. The SBA serves to “buffer” or isolate the landfill from surrounding land uses and is reserved for uses consistent with open space, agriculture, and non-waste disposal landfill infrastructure as determined by Contra Costa County.

The adjacent PG&E parcel to the east of the SBA in the County has an OS, Open Space, General Plan Land Use designation and is in the A-2 General Agricultural District. The adjoining PG&E property to the north is in the City of Pittsburg and has a Pittsburg General Plan designation of Utility/ROW and is in the Pittsburg OS Open Space District. The PG&E property is open space land that serves as a north-south utility corridor and contains large electrical transmission lattice towers, overhead high-voltage electrical transmission lines, and an underground gas transmission pipeline.

Within the KCL Primary Project Area, the proposed project would improve and expand the methane recovery for the production of energy that is required in LP89-2020 and other existing permits, and is consistent with the General Plan LF designation and the A-3 District. As discussed in Environmental Checklist Section 8.b above, the proposed project would be consistent with the BAAQMD Clean Air Plan and the County’s CAP. The underground transmission pipeline would

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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traverse portions of the SBA and the PG&E utility corridor. Development Rights to the SBA were conveyed by the landfill owner to Contra Costa County in 1996. Installation of landfill infrastructure i.e. the pipeline, in the SBA is an allowable landfill infrastructure use under the Development Rights, subject to the approval of the DCD Director. The portion of the underground transmission pipeline within the PG&E utility corridor would be a use that is similar to the existing PG&E underground transmission pipeline. Thus, the proposed project would not have a significant impact.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Land Use - Ameresco IS-MND Section 11*.
- Contra Costa County Board of Supervisors, November 19, 1996. Acceptance of Development Rights for Special Buffer Area, Keller Canyon Landfill.
- Contra Costa County General Plan, 2005-2020. *Open Space Element*.
- Contra Costa County General Plan, 2005-2020. *Land Use Element*.
- Contra Costa County Code, Title 8, *Zoning Ordinance*.
- City of Pittsburg, 2011. *Land Use Map, General Plan Pittsburg 2020*.
- City of Pittsburg, 2010. *Chapter 2 Land Use, General Plan Pittsburg 2020*.
- <http://cityofpittsburg.maps.arcgis.com/apps/webappviewer/index.html?id=54f347e4fe8b405ab2b93b922bcce89c>, 2020. *Pittsburg Zoning Districts (2010) Map*.
- City of Pittsburg, 2016. *Chapter 18.58, Open Space District (OS), Pittsburg Municipal Code*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>12. MINERAL RESOURCES – Would the project:</b>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

- a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (No impact)*

Known mineral resource areas in the County are shown on Figure 8-4 (Mineral Resource Areas) of the Contra Costa County General Plan Conservation Element. No known mineral resources have been identified in the project vicinity, and therefore the proposed project would not result in the loss of availability of any known mineral resource.

- b) *Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No impact)*

The project site is not within an area of known mineral importance according to the General Plan Conservation Element, and therefore, the project would not impact any mineral resource recovery site.

**Sources of Information**

- Contra Costa County General Plan, 2005-2020. *Conservation Element.*



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>13. NOISE – Would the project result in:</b>				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

- a) *Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than significant with mitigation)*

The proposed RNGPFP would be located almost entirely within the KCL property. Pursuant to LP89-2020 COA 9.1 (Hours of Operation) and COA 9.2 (Operating Days) landfill operation is limited to 7:00 a.m. to 7:00 p.m. Monday through Saturday, except on holidays. The landfill is closed on Sundays.

Given its location, the RNGPFP would also be subject to the LP89-2020 Conditions of Approval, and therefore, if the proposed project is approved, the following LP89-2020 COAs related to noise control will be incorporated into the project.

- 1 COA 21.1 (Noise Control Objective). The applicant shall manage the facility in a manner that minimizes noise impacts to area residents.
- 2 COA 21.2 (Noise Monitoring Program). The applicant shall prepare and implement a noise monitoring and abatement program, which shall be approved by the County Department of Conservation and Development and Contra Costa Environmental Health. The program shall monitor noise levels at sensitive receptor locations, one West of Bailey Road and

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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South of West Leland Road, one near Bailey north of West Leland, and another in the Jacqueline Drive area south of West Leland Road. The DCD Director may specify other monitoring locations. Noise monitoring reports shall be submitted to the DCD on a quarterly basis unless otherwise specified by the DCD Director. If the monitoring noise levels at the Landfill boundary line or other monitored location exceed 60 dBA during daylight hours, or 50 dBA during the evening or at night, the County may require the operator to institute additional noise reduction measures to bring noise emanating from the Landfill to the forementioned levels or less.

- 3 COA 21.8 (Gas Flare Muffling). If flaring is used to dispose of Landfill gas, the flares shall be contained in noise and glare-reducing housing. The housing shall be subject to the approval of the Contra Costa Environmental Health, DCD, and the Bay Area Air Quality Management District.
- 4 COA 20.23 (Speed Limits). The applicant shall enforce speed limits set by the Contra Costa Environmental Health on internal site roads. The maximum internal on-site speed limit shall be 20 mph unless otherwise specified by Contra Costa Environmental Health.
- 5 COA 20.24 (Equipment Maintenance). The applicant shall maintain gas processing equipment in optimum working order to ensure that equipment emissions are controlled. Equipment shall be fitted with spark arrestors so potential for causing fires is minimized. Equipment shall not be left idling when not in use. Maintenance records shall be kept on all pieces of gas processing equipment.
- 6 COA 32.1 (Hours of Construction). The applicant developer shall restrict outdoor construction activities on the KCL property to the period from 8:00 a.m. to 6:00 p.m. Monday through Saturday.
- 7 COA 32.2 (Exemption). The applicant may request, in writing, and the DCD Director may grant, exemptions to Condition 32.1 for specific times for cause. An example is the placing of concrete.

Other noise control measures that will be incorporated into the proposed project, if approved, including the following.

8. Operators in the RNG processing facility shall be required to wear appropriate hearing protection devices in conformance to OSHA requirements.
9. Acoustic shrouding shall be installed and maintained on RNG processing equipment such as compressors and feed blowers.
10. Pile driving, blasting, and helicopters shall not be used as methods of construction.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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As described in Section 8 (Description of Project), the proposed RNG processing facility would be located on a portion of the KCL Primary Project Area adjacent to, and northwest of, the existing LFGTE plant. The new underground RNG transmission pipeline would start at the RNG processing facility, traverse through the SBA, and into the contiguous PG&E-owned utility corridor. Within this utility corridor, the pipeline would go under the Contra Costa Canal and would terminate in an Ameresco interconnect station that would then connect with the existing PG&E gas transmission pipeline at a PG&E-owned valve lot.

Existing Community Noise Environment

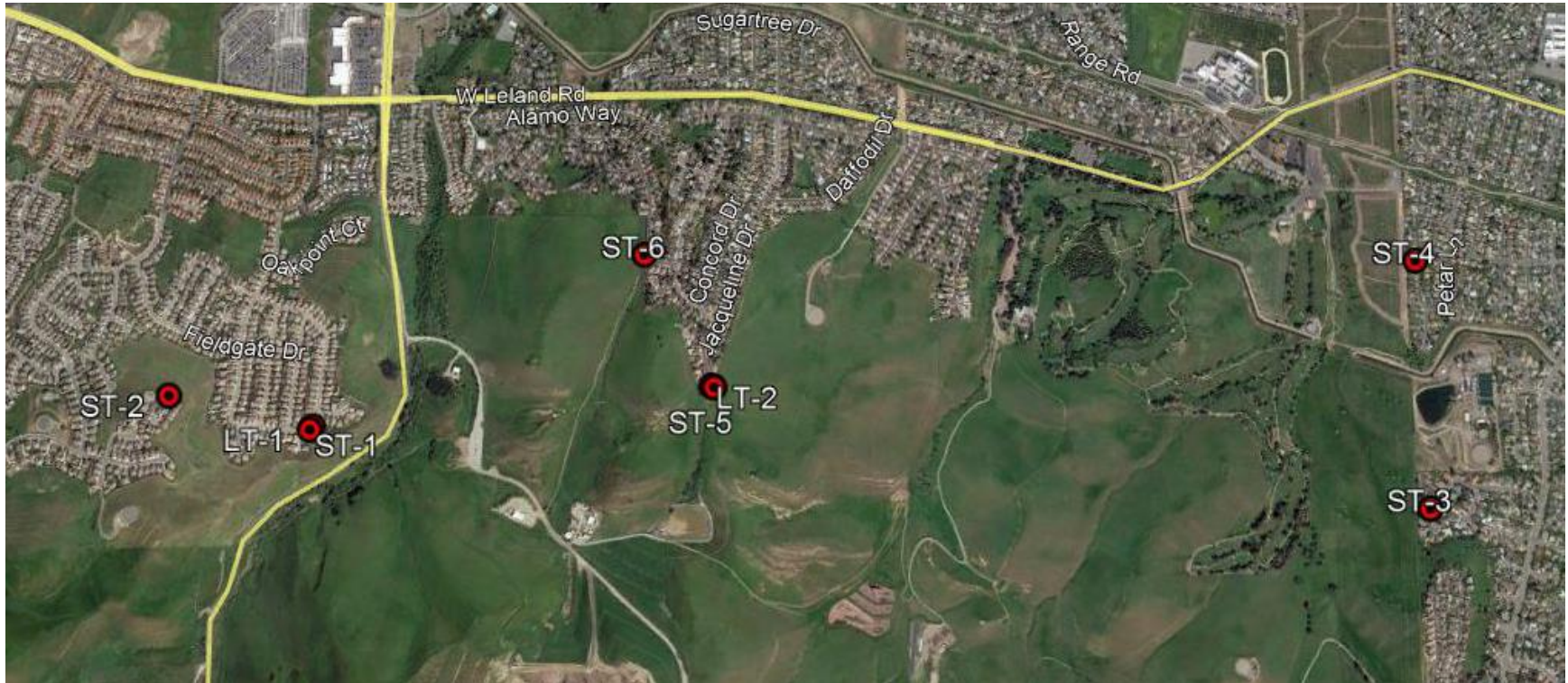
To assess ambient noise levels at locations that may be affected by the proposed RNGPPF, Illingworth and Rodkin (IR) conducted a noise monitoring survey in the project vicinity in February 2019. IR took noise measurements at various community locations, as shown on Figure 13-1. As illustrated on the Figure, the project site is bordered by residential neighborhoods to the west, north, and east, and open land to the south. The residential locations are noise sensitive locations for the noise monitoring survey. The existing LFGTE plant is located on the western side of the site, with the landfill to the south. Commercial land uses are located to the northwest of the project site, at the intersection of Bailey and West Leland Roads.

The IR community noise monitoring survey included two long-term noise measurements (LT-1 and LT-2 on Figure 13-1) to quantify the daily trend in noise levels at noise sensitive locations near the project site.

1. Long-term noise measurement LT-1 was made in front of a residence at 1287 Brooktrail Drive, approximately 2,850 feet (0.54 mile) west of the existing LFGTE plant. This location is approximately 175 feet south of Summitridge Court (discussed in Environmental Checklist Section 3.c). The primary noise sources at this location included distant and local traffic, a nearby water feature, distant construction, and other local community noise sources. Hourly average noise levels at this location ranged from 43 to 57 dBA  $L_{eq}$  during the day, and from 40 to 50 dBA  $L_{eq}$  at night. The day-night average noise level was 55 dBA DNL on February 23, 2019, and 51 dBA DNL on February 24, 2019.
  
2. Long-term noise measurement LT-2 was made at the end of Jaqueline Drive, near the residence at 2308 Jaqueline Drive, approximately 1,730 feet (0.33 mile) northeast of the existing LFGTE plant. The primary noise sources at this location included distant traffic and occasional distant aircraft overflights. Hourly average noise levels at this location ranged from 39 to 50 dBA  $L_{eq}$  during the day, and from 32 to 48 dBA  $L_{eq}$  at night. The day-night average noise level was 51 dBA DNL, on February 23, 2019 and February 24, 2019.



**Figure 13-1. Noise Monitoring Locations in Nearby Neighborhoods**



Source: Illingworth & Rodkin, March 2020

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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In addition to the two long-term noise measurements, six attended short-term noise measurements (ST-1 through ST-6 on Figure 13-1) were made at both long-term sites and at additional representative noise sensitive locations in the site vicinity to provide qualitative and quantitative information about the existing noise environment in nearby residential areas. A summary of the short-term measurement results is shown in Table 13-1.

1. Short-term noise measurement ST-1 was made adjacent to long-term noise measurement location LT-1 in front of a residence at 1287 Brooktrail Drive. As detailed above, the primary noise sources at this location included distant and local traffic, a nearby water feature, distant construction, and other local community noise sources.
2. Short-term noise measurement ST-2 was made in in front of a residence at 462 Oak Crest Place. The primary noise sources at this location included distant and local traffic, local community noise sources, and occasional distant aircraft overflights. The 10-minute average noise level measured at this location between 1:40 p.m. and 1:50 p.m. on February 22, 2019 was 48 dBA  $L_{eq}$ .
3. Short-term noise measurement ST-3 was made in in front of a residence at 3818 La Miranda Place. The primary noise sources at this location included distant and local traffic and occasional distant aircraft overflights. The 10-minute average noise level measured at this location between 2:20 p.m. and 2:30 p.m. on February 22, 2019 was 47 dBA  $L_{eq}$ .
4. Short-term noise measurement ST-4 was made in in front of a residence at 34 Orinda Circle. The primary noise sources at this location included distant and local traffic, local community noise sources, yard work, and occasional distant aircraft overflights. The 10-minute average noise level measured at this location between 2:20 p.m. and 2:30 p.m. on February 22, 2019 was 44 dBA  $L_{eq}$ .
5. Short-term noise measurement ST-5 was made adjacent to long-term noise measurement location LT-2 at the end of Jaqueline Drive, near the residence at 2308 Jaqueline Drive. As detailed above, the primary noise sources at this location included distant traffic and occasional distant aircraft overflights.
6. Short-term noise measurement ST-6 was made across the street from a residence at 2251 Santa Maria Drive. The primary noise sources at this location included distant and local traffic, local community noise sources, local agricultural noise (cows), and occasional distant aircraft overflights. The 10-minute average noise level measured at this location between 2:50 p.m. and 3:00 p.m. on February 22, 2019 was 51 dBA  $L_{eq}$ .

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 13-1. Summary of Short-Term Noise Measurement Data (dBA)**

<b>Noise Measurement Location</b>	<b>L<sub>(1)</sub></b>	<b>L<sub>(10)</sub></b>	<b>L<sub>(50)</sub></b>	<b>L<sub>(90)</sub></b>	<b>L<sub>eq</sub></b>	<b>DNL<sup>1</sup></b>
ST-1: In front of 1287 Brooktrail Drive (2/22/2019, 1:10 p.m. - 1:20 p.m.)	57	48	42	39	46	51
ST-2: In front of 462 Oak Crest Place (2/22/2019, 1:40 p.m. - 1:50 p.m.)	56	50	47	46	48	51
ST-3: In front of 3818 La Miranda Place (2/22/2019, 2:20 p.m. - 2:30 p.m.)	61	46	36	34	47	52
ST-4: In front of 34 Orinda Circle (2/22/2019, 2:20 p.m. - 2:30 p.m.)	54	52	42	39	44	51
ST-5: In front of 2308 Jacqueline Drive (2/22/2019, 2:50 p.m. - 3:00 p.m.)	46	44	37	35	40	51
ST-6: Across from 2251 Santa Maria Drive (2/22/2019, 2:50 p.m. - 3:00 p.m.)	63	55	42	39	52	53

<sup>1</sup> Calculated based on comparison between the short-term and long-term noise data.

Source: Illingworth & Rodkin, March 2020

The primary noise source in the surrounding neighborhoods is intermittent traffic on local roadways. Distant traffic from Highway 4 and major arterials also contributes to background noise levels. In general, noise levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA are typical values for primary/major arterials, and 75 to 80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In this context, the surveyed neighborhoods have relatively low ambient noise levels. Aside from traffic noise, localized community noise sources (dog barks, neighborhood activity, garage door opening, local water features, yard work, etc.) and distant aircraft overflights contribute to the noise environment.

#### RNG Processing Equipment Noise

In addition to the community noise monitoring survey, on-site noise measurements were recorded in February 2019. Figure 13-2 shows the locations of noise measurements made to confirm existing equipment noise levels at the LFGTE plant. The results of the on-site measurements are summarized in Table 13-2.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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**Figure 13-2. Ameresco LFGTE Plant On-Site Equipment Noise Measurements**



Source: Illingworth & Rodkin, March 2020

The RNG processing facility would operate 24 hours per day, 7 days a week in conjunction with the existing LFGTE plant, except during maintenance periods. The footprint of the RNG processing equipment would cover an area of approximately 48,000 sq. ft. and would be located adjacent to, and northwest of, the LFGTE plant. The entire facility would operate automatically with only minor adjustments by operations personnel. Proposed noise generating equipment includes compressors, coolers, vacuum pumps, a thermal oxidizer, and feed blowers. A list of equipment proposed for the site, the numbers of units proposed, and the noise output of the units are shown in Table 13-3.

<b>Environmental Issues</b>	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

**Table 13-2. Noise levels Generated by Existing On-Site LFGTE Plant Equipment**

Existing LFGTE Plant Equipment		Noise Level at Distance from Source, $L_{eq}$ dBA				
		3 feet	5 feet	15 feet	50 feet	100 feet
Internal Combustion Engine Generator (3.8 Megawatts)	With LFGTE Plant Door Open, In Line with Door		104	94	88	82
	With LFGTE Plant Door Closed, In Line with Door				78	71
	With LFGTE Plant Door Open, at Angle from Door					73
	With LFGTE Plant Door Closed, at Angle from Door					68
Turbines		86				
Compressor		82				

Source: Illingworth & Rodkin, March 2020

**TABLE 13-3. Noise Levels for Proposed Equipment at 3 feet**

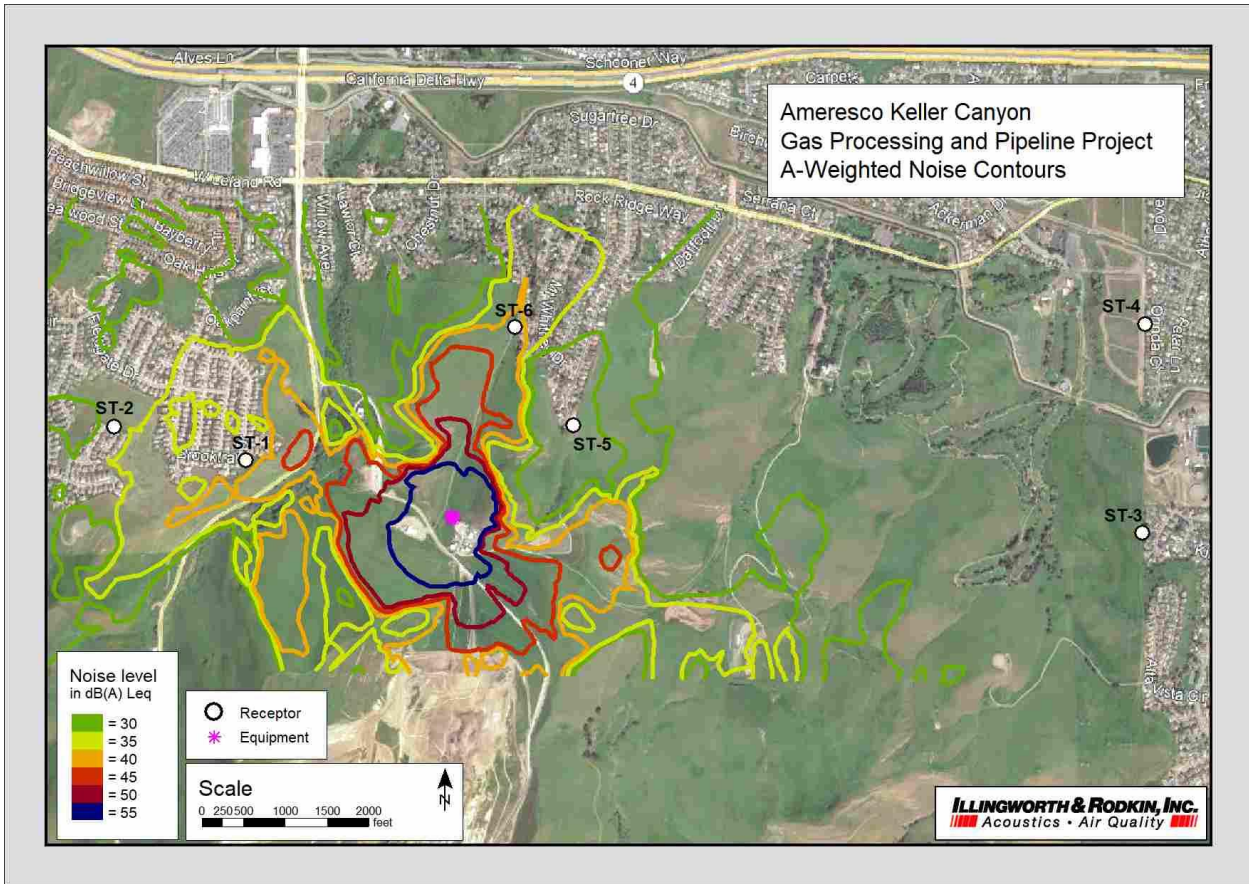
Equipment	Number of Units Proposed	Noise Level per Unit at 3 feet, dBA
Feed Compressor Oil Cooler	4	81.7 dBA
Feed Compressor	4	75 dBA
Feed Blowers	3	80 dBA
Recirculation Compression Aftercooling	1	81.7 dBA
Recirculation Oil Cooler	2	81.7 dBA
Recirculation Compressors	2	75 dBA
Stage 2 Compressors	2	81.6 dBA
Stage 2 Compressor Oil Cooler	2	81.7 dBA
HX-380 Second Stage Aftercooler	1	81.6 dBA
Thermal Oxidizer	1	85 dBA
NRU Vacuum Pumps	2	83 dBA
Product Compressor/Aftercooler	2	72 dBA
Stage 3 Compressors	2	75 dBA

Source: Illingworth & Rodkin, March 2020 provided by Ameresco Keller Canyon RNG LLC.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

Noise levels were modeled at the short-term noise measurement locations, considering the shielding effects of the topography of the area. The closest residences to the equipment at the proposed RNG processing facility are located approximately 2,100 feet (0.40 mile) to the west on Summitridge Court (near ST-1), approximately 1,700 feet (0.32 mile) to the northeast on Jacqueline Drive (near ST-5), and approximately 2,450 feet (0.46 mile) and within line of sight of residences to the north on Santa Maria Drive (near ST-6). The calculations assume operation of all proposed equipment simultaneously. Noise levels resulting from project operations at the nearest receptors are shown on Figure 13-3 and in Table 13-4. As shown, noise levels of the proposed equipment would range from 24 to 40 dBA  $L_{eq}$  at the short-term noise measurement locations, with the highest noise levels experienced in locations with line of sight to the facility (ST-6). The resulting DNL levels, assuming all equipment operating continuously for 24-hr/day, would range from 30 to 47 dBA DNL.

**Figure 13-3. Noise Contours Generated by Proposed RNG Processing Facility**



Source: Illingworth & Rodkin, March 2020



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**TABLE 13-4. Noise levels Generated by Proposed Equipment**

Receiver	Project Generated $L_{eq}$ , dBA	Project Generated DNL <sup>1</sup> , dBA
ST-1	38	45
ST-2	34	40
ST-3	25	32
ST-4	24	30
ST-5	27	34
ST-6	40	47

<sup>1</sup> Assumes continuous simultaneous operation of all equipment, 24-hr/day

Source: Illingworth & Rodkin, March 2020

Table 13-5 shows existing ambient and calculated DNL noise levels resulting from proposed RNG processing facility, with all equipment operating simultaneously 24-hr/day. Ambient DNL levels are based on noise measurements and observations made during the noise monitoring survey

**TABLE 13-5. Estimated Increase in DNL Resulting from Project Operations**

Receiver	Ambient DNL, dBA	Project Generated DNL <sup>1</sup> , dBA	Existing + Project DNL <sup>1</sup> , dBA	DNL Increase <sup>2</sup> , dBA
ST-1	51	45	52	0.9
ST-2	51	40	51	0.4
ST-3	52	32	52	0.0
ST-4	51	30	51	0.0
ST-5	51	34	51	0.1
ST-6	53	47	54	0.9

<sup>1</sup> Assumes continuous simultaneous operation of all equipment, 24-hr/day.

<sup>2</sup> Results were rounded to the nearest decibel. In some cases, this can result in relative changes that may not appear intuitive. For example, the difference between 64.4 (64) and 64.5 (65) is 0.1 (0), not 1.

Source: Illingworth & Rodkin, March 2020

As indicated in Table 13-5, project operations would result in DNL noise levels increases of 0 to 1 dBA at the nearest surrounding residences. The noise levels generated by the RNG processing facility at the community noise measurement locations would not exceed the County's daytime (60 dBA  $L_{eq}$ ), nighttime (50 dBA  $L_{eq}$ ) thresholds set by LP89-2020 COA 21.2. Equipment noise levels would typically not be audible or distinguishable above other ambient sources at the nearest residences except at the most exposed residences during the quietest nighttime hours. Further, activities at the proposed RNG processing facility are not expected to expose persons to, or generate, noise levels in excess of the Community Noise Exposure Levels shown on Figure 11-6 of the General Plan Noise Element. Figure 11-6 shows 60 dBA as normally acceptable and 70 dBA as conditionally acceptable for single-family residences. In addition, the applicant will apply the relevant noise control measures LP89-2020, if the proposed project is approved. Thus, noise effects of project operations would be less than significant.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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Project-Generated Traffic Noise

As discussed in Section 8 (Description of Project), operation of the proposed RNG processing facility would be overseen by two operators for 40 hours per week. Accordingly, there would not be any substantial change in facility access or traffic patterns associated with the RNGPPP and project-generated traffic noise would be less than significant.

Noise during Project Construction

Noise levels during construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, the distance between construction noise sources and noise-sensitive receptors, any shielding provided by intervening structures or terrain, and ambient noise levels. Construction activities for the RNG processing facility include site clearing, grading and earthwork, installation of electrical grounding grids, placement of concrete pads, installation of processing equipment, construction of gravel roads, and installation of permanent storm water control features. Noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), when construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction durations last over extended periods of time.

Construction equipment noise varies greatly depending on the construction activity performed, type and specific model of equipment, and the condition of equipment used. Typical noise levels for different construction equipment at a distance of 50 feet are shown in Table 13-6. If the project is approved, the applicant will implement the noise control measures described above, including not using pile driving, blasting, or helicopters as methods of construction. Thus, most demolition and construction noise would range from 80 to 90 dBA at 50 feet from the source. Construction-generated noise levels drop off at a rate of approximately 6 dBA per doubling of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

Residences are located as close as approximately 1,700 feet (0.32 mile) to the northeast and approximately 2,100 feet (0.40 mile) to the west of the proposed RNG processing facility. With the drop off in noise levels with increasing distance from noise sources, construction activities at the RNG processing facility site would be anticipated to generate noise levels in the range of 50 to 60 dBA at a distance of 1,600 feet, not taking any shielding from intervening terrain or structures into account. At a distance of 2,000 feet, construction activities would be anticipated to generate noise levels in the range of 48 to 58 dBA. Noise levels would be lower at more distant and/or shielded receptor locations. Accordingly, noise impacts during construction of the proposed RNG processing facility would be less than significant.

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>

**Table 13-6. Construction Equipment 50-foot Noise Emission Limits**

<b>Equipment Category</b>	<b>L<sub>max</sub> Level (dBA)<sup>1,2</sup></b>	<b>Impact/Continuous</b>
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Bar Bender	80	Continuous
Boring Jack Power Unit	80	Continuous
Chain Saw	85	Continuous
Compressor <sup>3</sup>	70	Continuous
Compressor (other)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Insitu Soil Sampling Rig	84	Continuous
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tractor	84	Continuous
Truck (dump, delivery)	84	Continuous
Vacuum Excavator Truck (vac-truck)	85	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: <sup>1</sup> Measured at 50 feet from the construction equipment, with a “slow” (1 sec.) time constant.

<sup>2</sup> Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.

<sup>3</sup> Portable Air Compressor rated at 75 cfm or greater and that operates at greater than 50 psi.

Source: Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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With respect to installation of the RNG transmission pipeline, most of the pipeline installation would be located 2,000 (0.38 mile) to 4,500 feet (0.85 mile) from the nearest residences; however, within the PG&E utility corridor, the pipeline would be installed approximately 50 feet from residences to the east (ST-3 and ST-4 on Figure 13-1). The four-inch diameter steel pipeline would be installed to a typical depth of four feet utilizing an excavator except where horizontal directional drilling (HDD) is required to allow the pipeline to pass beneath the Contra Costa Canal. HDD may require drilling to a depth of approximately 44 feet to meet clearance requirements.

After the pipeline is installed, the trench would be backfilled and restored to its original contours. As shown in Table 13-6, an excavator would be anticipated to generate a maximum noise level of 85 dBA  $L_{max}$  during operation at a distance of 50 feet. Noise levels on an hourly average would be considerably lower and would be 77 dBA  $L_{eq}$  at a distance of 50 feet. Pipeline construction would be anticipated to occur for relatively short periods of time in any specific location as construction proceeds along the project’s alignment. Nevertheless, noise levels could exceed ambient levels by as much as 26 dBA in the PG&E utility corridor at the nearest residences during daytime periods of construction. As a result, **noise from pipeline installation that exceeds the normally acceptable 60 dBA noise level for single-family residences could result in a potentially significant impact.** Consequently, the applicant is required to implement the following mitigation measure for project-related noise, in addition to applying the noise control measures described above.

Mitigation Measures

**Noise 1:** *The following noise reduction measures shall be implemented during pipeline installation and shall be included on all sets of construction drawings.*

1. *The applicant shall make a good faith effort to minimize project-related disruptions to adjacent properties, and to uses on the site. This shall be communicated to all project-related contractors.*
2. *A publicly visible sign shall be posted on the property with the telephone number and person to contact regarding construction-related complaints. This person shall respond and take corrective action within 24 hours. The Department of Conservation and Development phone number shall also be visible to ensure compliance with applicable regulations.*
3. *Additional noise reduction measures shall be implemented during pipeline installation in the PG&E utility corridor:*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- a. *Per City of Pittsburg Municipal Ordinance Section 18.82.040 Noise, no construction event or activity occurring on the PG&E property adjoining existing residential uses shall generate loud noises in excess of 65 decibels measured at the property line, except between the hours of 8:00 a.m. and 5:00 p.m.*
- b. *Per City of Pittsburg General Plan Noise Element Policy 12-P-9, the applicant shall restrict outdoor construction activities in the PG&E utility corridor to the period from 8:00 a.m. to 5:00 p.m. Monday through Friday.*
- c. *In addition to the foregoing, the applicant shall provide notification to occupants of property directly adjacent to the PG&E utility corridor two weeks prior to, and 24-hours prior to, scheduled construction activity in the PG&E utility corridor.*

Implementation of the **Noise 1** mitigation measures would reduce the noise impact from pipeline installation to a less than significant level.

- b) *Would the project result in generation of excessive groundborne vibration or groundborne noise levels? (Less than significant)*

Future construction of the RNGPFP, including the proposed RNG processing facility and the underground RNG transmission pipeline would not include any components (e.g., pile-driving) that would generate excessive ground-borne vibration levels. Additionally, normal operation of the RNG processing facility and transmission pipeline would not generate ground-borne vibrations during project operations.

Construction activities would include site clearing, earthwork, construction of the proposed RNG processing facility, and installation of an underground RNG transmission pipeline to connect to the PG&E valve lot. As discussed in Environmental Checklist Section 13.a, pile driving and blasting, which can cause excessive vibration, would not be used as methods of construction. Table 13-7 presents typical vibration levels that could be expected from construction equipment at a distance of 25 feet (excluding pile driving and blasting). Project construction activities may generate substantial vibration in the immediate vicinity of work areas, but vibration levels would vary at off-site receptor locations depending on distance from the source of the vibration, soil conditions, construction methods, and equipment used.

The nearest off-site residences are located approximately 1,700 feet (0.32 mile) to the northeast and approximately 2,100 feet (0.40 mile) to the west of the proposed RNG processing facility. At these distances, vibration levels would not be discernible from ambient conditions (0.002 in/sec PPV or less). Thus, project-generate ground-borne vibration levels for the RNG processing facility would not exceed the Federal Transit Administration’s vibration-induced architectural damage

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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threshold of 0.2 PPV, and therefore, would have a less than significant ground-borne vibration impact.

**Table 13-7. Vibration Source Levels for Construction Equipment**

Equipment	PPV at 25 ft. (in/sec)
Vibratory Roller	0.210
Hoe Ram	0.089
Large bulldozer	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003

Source: Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, September 2018.

During installation of the underground RNG transmission pipeline within the PG&E utility corridor, construction would be located as close as 50 feet from residences to the east (ST-3 and ST-4 on Figure 13-1). At a distance of 50 feet, use of an excavator would be anticipated to generate a vibration level of about 0.031 in/sec PPV (similar to a hoe ram or large bulldozer). Vibration levels may be perceptible to occupants during short periods when construction is located directly adjacent to structures but would be below the Federal Transit Administration’s vibration-induced architectural damage threshold of 0.2 PPV. Thus, vibration levels associated with installation of the underground pipeline would be less than significant.

- c) *For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (No impact)*

There is no currently operating private airstrip in the vicinity of the project site. Thus, the proposed project would not expose people to airstrip-related noise.

The nearest public use airport is the Buchanan Field Airport, which is approximately 6.6 miles west of the project site, and the nearest public airport is the Oakland International Airport, located 24.8 miles to the southwest. Accordingly, the project site would not be located within an area where there would be excessive airport-related noise.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.



<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Illingworth & Rodkin, 2020. *Noise - Ameresco IS-MND Section 13*.
- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020*.
- Contra Costa County General Plan, 2005-2020. *Noise Element*.
- Federal Transit Administration, 2018. *Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123*.
- Caltrans, 2013. *Transportation and Construction Vibration Guidance Manual*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>14. POPULATION AND HOUSING – Would the project:</b>				
a) Induce substantial unplanned population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

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

As described in Section 8 (Description of Project), the proposed RNGPFP would more fully utilize LFG and convert it into a renewable gas product at a new processing facility and transmit the RNG product to PG&E via an underground transmission pipeline. As discussed in Environmental Checklist Section 11 (Land Use and Planning), the proposed project would not change any of the uses on the project site or in the vicinity. In addition, no off-site improvements such as new roads or other infrastructure is proposed with the project. Further, operation of the RNGPFP would be conducted by two employees, and therefore, the RNGPFP would not significantly increase the population in the unincorporated Pittsburg area.

- b) *Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? (No impact)*

As discussed in Environmental Checklist Section 14.1 above, the proposed project would add a RNG processing facility and a RNG transmission pipeline to the project site. There are currently no persons residing on the project site, and here are no housing units. Accordingly, the proposed project would not displace any person from the project site.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project.*
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project.* Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description.*

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>15. PUBLIC SERVICES – 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:</b>				
a) Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

*Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:*

a) **Fire Protection? (Less than significant)**

Fire protection and emergency medical response services in the project vicinity are provided by the Contra Costa County Fire Protection District (CCCYPD). Fire protection at the project site would be provided by Fire Station 87 located at 800 West Leland Road, approximately 1.0 mile to the northeast, and by Fire Station 86 located at 3000 Willow Pass Road, approximately 1.7 miles to the north. If necessary, additional fire protection support would be provided by Fire Station 84 located at 1903 Railroad Avenue, approximately 2.7 miles to the northeast, and by Fire Station 8 located at 4647 Clayton Road, approximately 4.0 miles to the southwest. (Distances are from the proposed RNG processing facility.)

The proposed project would add a RNG processing facility adjacent to the northwest of the existing LFGTE plant and an underground RNG transmission pipeline. The project site is located in the designated area for landfill infrastructure and control systems, and therefore the applicant shall comply with applicable LP89-2020 COAs. Existing LP89-2020 permit conditions include meeting the requirements of the CCCYPD for on-site fire protection water supply (COA 30.8, On-Site Water Storage), (COA 30.18, Smoking Prohibitions), equipping the landfill facilities with fire extinguishers (COA 30.13, Fire Extinguishers), and maintaining a 60-foot fire break around the perimeter of the landfill and any buildings or structures (COA 30.12, Fire Breaks). As discussed in Environmental Checklist Section 9.a, the proposed project would provide a fire detection system that would include manual pull stations, smoke detectors, rate of rise detectors in the electric/control room, methane detectors, and alarm strobes/horns.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Consistent with LP89-2020 COA 30.17 (Emergency Equipment Access), an existing paved cul-de-sac provides access and circulation for large vehicles to/from the other existing industrial facilities located near the proposed site of the RNG processing facility. The industrial facilities include large storage tanks, the Ameresco LFGTE plant, and landfill flare station.

Pursuant to LP89-2020 COA 30.8 (On-Site Water Storage), an existing water supply tank for landfill operations is located southeast of the proposed RNG processing facility. Water supply for firefighting would be sourced from this existing tank. The total capacity of the water supply tank is approximately 342,300 gallons. The net capacity for stored water reserved for firefighting is approximately 235,800 gallons, or about 69 percent of total stored water.

Consistent with LP89-2020 COA 30.5 (Fire Protection Component), two existing fire hydrants are located within 325 feet of the RNG processing facility site for use in a fire event: One hydrant is located adjacent to the water supply tank; a second hydrant is located southwest of the water supply tank alongside the access road near the landfill maintenance building. If the proposed project is approved, the applicant will implement the following additional fire protection measure.

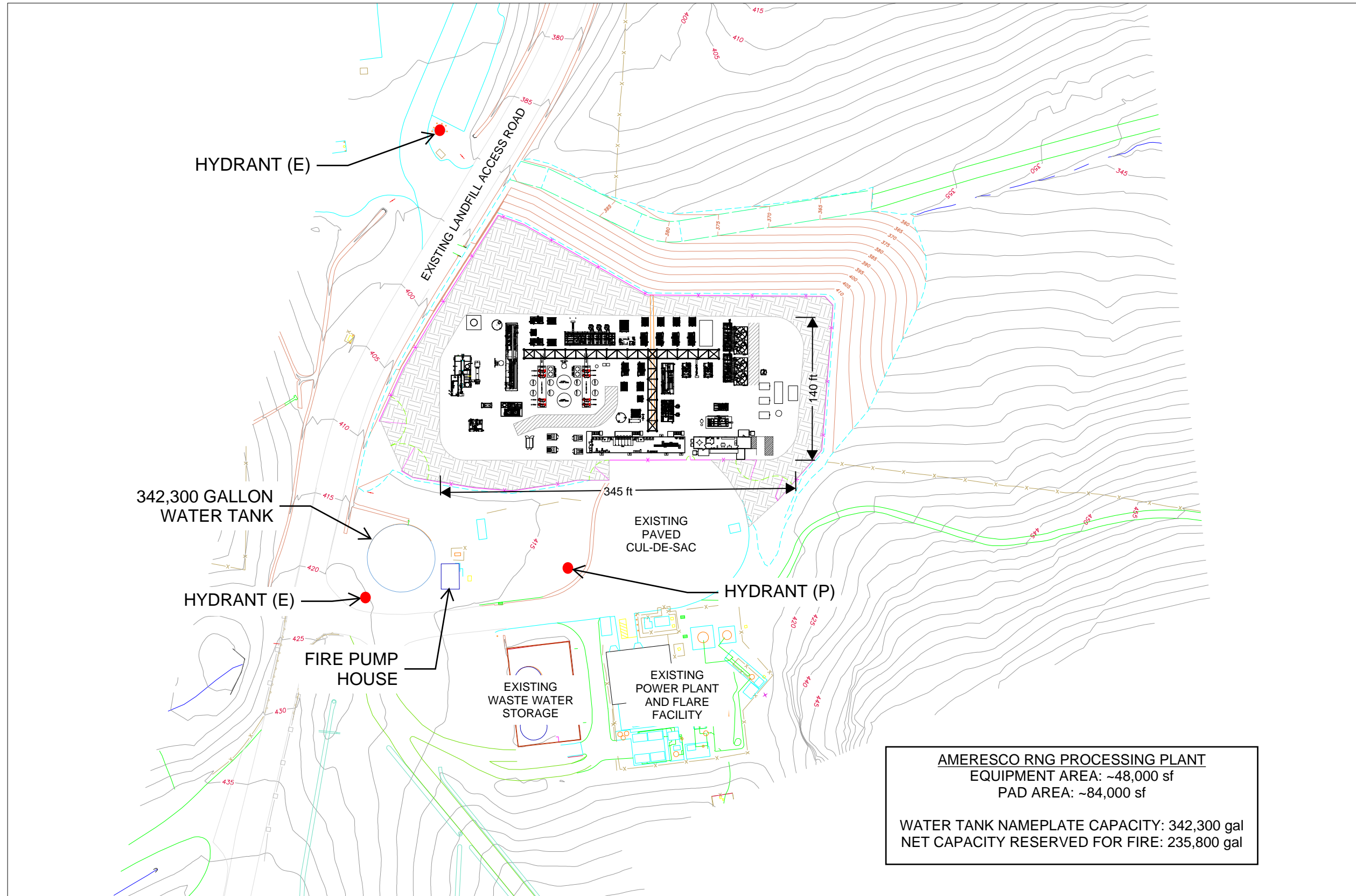
1. The applicant shall construct a new fire hydrant in a location near the mid-southeastern boundary of the RNG processing facility enclosure. The precise location and specifications of the new hydrant shall be coordinated with the CCCFPD to ensure compliance with the California Fire Code.

As described above, the proposed third hydrant would be located off the edge of the cul-de-sac, approximately near the mid-point of the east boundary of the RNG processing facility enclosure. The gas processing equipment would be accessible via the existing cul-de-sac. Fire apparatus would be able to connect hoses to any one or all of the hydrants to extinguish fires. Figure 15-1 illustrates the access and water supply system, two existing hydrants, and location of the proposed new hydrant. As a result, the project would have a less than significant impact on fire protection services.

b) *Police Protection? (Less than significant)*

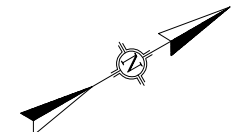
Police protection services at KCL are provided by the landfill operator pursuant existing LP89-2020 permit conditions, including managing KCL in a manner that prevents unauthorized access (COA 27.1, Security Objective), perimeter security fencing (COA 27.2, Security Fencing), 24-hour private security protection (COA 27.3, Security Staffing), and maintenance of security lighting (COA 27.4, Security Lighting). Implementation of the RNGPFP would not significantly impact the provision of security in KCL, and thereby would have a less than significant impact on police protection.

C:\Land Projects\2006\Ameresco Keller Canyon\dwg\2020 Figures\ RNG PLANT-FIG 5-6 (rev2020-8) (eq ATSI Rev X-040120).dwg



**FIGURE 15-1**  
**ACCESS AND WATER SUPPLY SYSTEM FOR FIRE PROTECTION**

0 50 100  
 APPROX.  
 SCALE IN FEET



**BRYAN A. STIRRAT & ASSOCIATES**  
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 LAFAYETTE, CA 94549  
 909-655-3271

**AMERESCO**  
 Green • Clean • Sustainable

AMERESCO KELLER CANYON  
 RNG PROCESSING FACILITY  
 SITE PLAN

DATE:	03 MAY 2020
DRAWN BY:	EBT
REVIEW BY:	AS / JAS
REV:	2020-8 / ATSI 040120



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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c) *Schools? (No impact)*

The Mt. Diablo Unified School District (MDUSD) and the Pittsburg Unified School District (PUSD) provide public education services from kindergarten to 12th grade to students in the KCL area. Nearby MDUSD schools include Delta View Elementary School located at 2916 Rio Verde, approximately 1.9 miles to the west, and Bel Air Elementary School located at 663 Canal Road, approximately 1.1 miles to the north. Nearby PUSD schools include Willow Cove Elementary School located at 1880 Hanlon Way, approximately 1.4 miles to the northeast, Ranchos Medanos Junior High School located at 2301 Range Road, approximately 1.5 miles to the northeast, Heights Elementary School located at 40 Seeno Avenue, approximately 2.0 miles to the east, and Los Medanos Elementary School located at 610 Crowley Avenue, approximately 2.0 miles to the northeast. (Distances are from the proposed RNG processing facility.) The RNGPFP would not include any residential units, and therefore, would not affect student enrollment in the MDUSD and the PUSD. Accordingly, there would be no impact.

d) *Parks? (Less than significant)*

The closest public parks to the project site include Hillsdale Park located at 2240 Daffodil Drive, approximately 0.7 mile to the northeast, Oak Hills Park located on Southwood Drive at Fieldgate Drive, approximately 1.0 mile to the northwest, and Ambrose Park located at 175 Memorial Way, approximately 0.8 mile to the north. (Distances are from the proposed RNG processing facility.) Hillsdale Park and Oak Hills Park are operated by the City of Pittsburg Parks and Recreation Department. Ambrose Park is operated by the Ambrose Recreation and Park District. The applicant would employ two persons to operate the RNG facility, and if these persons use nearby public parks, the increase in use of the parks by the employees would be less than significant.

e) *Other public facilities? (No impact)*

Libraries: The Contra Costa Library operates 26 facilities in Contra Costa County, including the Bay Point Library located at 205 Pacifica Avenue, approximately 2.7 miles to the northwest, and the Pittsburg Library located at 80 Power Avenue, approximately 2.6 miles to the northeast. (Distances are from the proposed RNG processing facility.) The applicant would employ two persons to operate the RNG facility and these persons may use public libraries, but the employees would not substantially increase the number of library patrons. Thus, the project would have no impact on library facilities.

Health Facilities: The Contra Costa County Health Services District operates a regional medical center (hospital) and 11 health centers and clinics in the county. The closest public health facilities to the project site are the Bay Point Family Health Center located at 215 Pacifica Avenue,

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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approximately 2.7 miles to the northwest, and the Pittsburg Health Center located at 2311 Loveridge Road, approximately 3.5 miles to the east. (Distances are from the proposed RNG processing facility.) Because the RNGPFP would not include any residential units, there would be no project-related increase in population, and therefore, there would be no impact on the use of public health facilities.

**Sources of Information**

- <https://www.cccfpd.org/station-address>, 2020. *Fire Stations, Contra Costa County Fire Protection District.*
- Environmental Management et al., 2020. *Public Services - Ameresco IS-MND Section 15.*
- Contra Costa County, 2015. *Keller Canyon Landfill Land Use Permit LP89-2020.*
- <https://www.mdusd.org/>, 2020. *Schools, Mount Diablo Unified School District.*
- <https://www.pittsburg.k12.ca.us/pittsburg>, 2020. *District Map, Pittsburg Unified School District.*
- <http://www.ci.pittsburg.ca.us/index.aspx?page=238>, 2020. *Parks and Recreation, City of Pittsburg.*
- <https://www.ambroserec.org/parks-facilities>, 2020. *Parks and Facilities, Ambrose Recreation and Park District.*
- <http://ccclib.org/>, 2020. *Contra Costa County Library.*
- <https://cchealth.org/#Centers>, 2020. *Health Centers & Clinics, Contra Costa Health Services.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>16. RECREATION</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY: e**

- 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? (Less than significant)*

As described in Environmental Checklist Section 15.d (Public Services – Parks), nearby neighborhood parks include Hillsdale Park and Oak Hills Park operated by the City of Pittsburg Parks and Recreation Department, and Ambrose Park operated by the Ambrose Recreation and Park District. As discussed in Environmental Checklist Section 1.a, the ridges of the Concord Hills are approximately 1.7 miles southeast of the existing LFGTE plant and Mount Diablo State Park is approximately six miles to the south. Other regional park facilities include the Lime Ridge Open Space operated by the City of Walnut Creek, and the Black Diamond Mines Regional Preserve operated by the East Bay Regional Park District. A trailhead for Lime Ridge is located approximately 5.1 miles to the southwest on Montecito Drive near Ygnacio Valley Road, and a trailhead for Black Diamond Mines is located approximately 4.5 miles to the south on Clayton Road near Oakhurst Drive. The applicant would employ two persons to operate the RNG facility, and these persons may use nearby neighborhood parks. The regional parks and trailheads are further from the project site than the neighborhood parks, and therefore, employees would be less likely to use these facilities. Overall, the impact of the proposed project on neighborhood parks and regional facilities would be less than significant.

- 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 proposed RNGPFP would not include a recreational facility on the project site. Given the location of the nearby neighborhood parks described in Environmental Checklist Section 15.d



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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(Public Services – Parks), as well as the regional facilities discussed in Environmental Checklist Section 16.a, employees at the RNGFPF would likely use these facilities. The incremental increase in the use of these nearby neighborhood parks and recreational facilities would not be expected to result in the need to construct or expand recreational facilities.

**Sources of Information**

- [https://www.parks.ca.gov/?page\\_id=517](https://www.parks.ca.gov/?page_id=517), 2020. *Mount Diablo State Park, California Department of Parks and Recreation.*
- <https://www.walnut-creek.org/Home/Components/FacilityDirectory/FacilityDirectory/12/664>, 2020. *Lime Ridge Open Space, City of Walnut Creek.*
- [https://www.ebparks.org/parks/black\\_diamond/](https://www.ebparks.org/parks/black_diamond/), 2020. *Black Diamond Mines Regional Preserve, East Bay Regional Open Space District.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>17. TRANSPORTATION – Would the project:</b>				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

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

As discussed in Section 8 (Description of Project) the proposed RNG processing facility would operate 24 hours per day/7 days per week with two operators overseeing the facility for 40 hours per week. With respect to trip generation per employee, there is almost no transportation survey data for a RNG processing facility and relatively little transportation survey data available for power generating facilities. The Tahoe Regional Planning Agency has published data that includes power generating facilities. This data shows power generating facilities have the same daily trip rate as general light industrial facilities, with a rate of 3.02 trips per employee. Using this trip rate, the two employees at the RNG processing facility would generate six trips per day. In the 2017 Institute of Transportation Engineers (ITE) *Trip Generation Manual 10<sup>th</sup> Edition*, the PM peak hour trip rate for general light industrial facilities is approximately 0.09 percent of the daily trips. Accordingly, the two employees would generate less than one peak hour trip.

Policy 4-c of the Growth Management Element of the General Plan requires a transportation impact analysis of any project that is estimated to generate 100 or more AM or PM peak-hour trips. The proposed RNGPFP would generate at most up to two new peak-hour trip. Accordingly, a project-specific traffic impact analysis is not required. Since the project would yield less than 100 peak hour AM or PM trips, the proposed project would not conflict with the circulation system in the KCL area.

With respect to construction traffic, the applicant anticipates that there would be less than 20 inbound construction trips per day. Access to the RNGPFP project area for construction traffic would be from the following locations:

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Bailey Road and internal site roads for construction on KCL property;
- John Henry Johnson Parkway to Ripple Rouge Road (near the Diablo Valley Radio Controllers’ miniature airstrip) to connect to a laydown area located on KCL property;
- Through an existing access gate located near the intersection of Alta Vista Circle and Alta Vista Court to provide access to the PG&E property; and
- Via the parking lot of the former Delta View Golf Course, located at the end of Golf Club Road to provide access to the PG&E valve lot.

Construction peak hour trips are temporary. To minimize disruption of local area traffic, the applicant will implement the following construction traffic measures, if the proposed project is approved.

- 1 During construction in the east portion of the project site on PG&E property, advance notice shall be given to the City of Pittsburg alerting of the need for potential traffic and parking controls on Alta Vista Circle on days vehicles and equipment are scheduled to access the PG&E property.
- 2 During construction in the mid portion of the project site and PG&E valve lot, advance notice shall be given to the City of Pittsburg and/or property owners to allow for vehicle access through the John Henry Johnson Parkway and Golf Course Road, respectively.

With implementation of the construction traffic measures, the impact of construction traffic would be less than significant.

Following are assessments of possible effects on public transit, bicycle facilities, and pedestrian facilities.

Public Transit: There is no transit service along Bailey Road at KCL. The nearest transit stops are the Tri-Delta Transit bus stops on West Leland Road near Bailey Road approximately 0.9 mile to the northwest of the project site. Because of the distance between transit stops and the hilly terrain of the KCL area, significant demand for transit service is not expected, and the project would not impede any existing transit service.

Bicycle Facilities: There is a Class II bicycle lane on Bailey Road that starts approximately 300 feet south of the entrance to KCL and turns into a Class III bicycle route approximately 175 feet south of Willow Avenue. The Contra Costa County *Bicycle Facilities Network Map* shows Baily Road through the KCL area as a Class II bicycle lane connecting to similar facilities along West Leland Road in the City of Pittsburg. Given that the Class II bicycle lane is already installed at the KCL



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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entrance, the proposed project would not impede the future provision of bicycle lanes in the local area.

Pedestrian Facilities: There are no pedestrian facilities along Bailey Road in the vicinity of the KCL entrance. Due to the rural character of this area, pedestrian activity along any roadway is largely non-existent. The location and characteristics of the project site make it unlikely that anyone would travel by foot. Thus, the absence of pedestrian facilities would not constitute a significant impact.

**b) *Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)? (Less than significant)***

The Contra Costa County Board of Supervisors adopted the *Contra Costa County Transportation Analysis Guidelines* in June 2020. The *Transportation Analysis Guidelines* include the following screening criteria. If a proposed project meets the screening criteria, the project would be expected to have a less than significant impact and would not require VMT (Vehicle Miles Traveled) analysis.

- i. Projects that:
  - a. Generate or attract fewer than 110 daily vehicle trips; or,
  - b. Projects of 10,000 square feet or less of non-residential space or 20 residential units or less, or otherwise generating less than 836 VMT per day.
- ii. Residential, retail, office projects, or mixed-use projects proposed within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- iii. Residential projects (home-based VMT) at 15% or below the baseline County-wide home-based average VMT per capita, or employment projects (employee VMT) at 15% or below the baseline Bay Area average commute VMT per employee in areas with low VMT that incorporate similar VMT reducing features (i.e., density, mix of uses, transit accessibility).
- iv. Public facilities (e.g. emergency services, passive parks (low-intensity recreation, open space), libraries, community centers, public utilities) and government buildings.

Based on the assessment in Environmental Checklist Section 17.a, the RNGPFP would generate fewer than 110 daily vehicle trips, and therefore, a VMT analysis is not required. Accordingly, the proposed project would have a less than significant transportation impact and would be consistent with CEQA Guidelines Section 15064.3(b).

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- c) *Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (No impact)*

The proposed RNGPFP does not include construction of any new offsite roadways and access to the KCL and Ameresco facilities would be unchanged. Thus, the proposed project would not increase hazards due to design features and it would have no impact.

- d) *Would the project result in inadequate emergency access? (No impact)*

As discussed in Environmental Checklist Section 9.f, operational access to the RNGPFP would be from the KCL driveway at 901 Bailey Road. Operation of the RNGPFP would be conducted by two employees, and therefore, the impact of RNGPFP operation on emergency response or emergency evacuation via Bailey Road would be minimal.

As described in Environmental Checklist Section 17.a above, During the 12 to 14-month construction period, there would be one staging location on KCL property and two locations on the PG&E property. The locations include:

- John Henry Johnson Parkway to Ripple Rouge Road (near the Diablo Valley Radio Controllers’ miniature airstrip) to access a laydown area on KCL property;
- Access through an existing access gate located near the intersection of Alta Vista Circle and Alta Vista Court to provide access to the PG&E property; and
- Access from the parking lot of the former Delta View Golf Course, located at the end of Golf Club Road to provide access to the PG&E valve lot.

The proposed project does not include any roadway modifications or any road closures during construction. Accordingly, the project would have no impact on emergency access in the project area.

**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project.*
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project.*
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description.*
- Environmental Management et al., 2020. *Transportation - Ameresco IS-MND Section 17.*
- Contra Costa County General Plan 2005-2020. *Growth Management Element.*
- Contra Costa County General Plan 2005-2020. *Transportation and Circulation Element.*
- Tahoe Regional Planning Agency, 2012. *Trip Table.*

<b>Environmental Issues</b>	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation Incorporated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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- Institute of Transportation Engineers, 2017. *Common Trip Generation Rates (PM Peak Hour), Trip Generation Manual, 10<sup>th</sup> Edition*.
- [http://trideltatransit.com/local\\_bus.aspx](http://trideltatransit.com/local_bus.aspx), 2020. *System Map, Tri-Delta Transit*.
- Contra Costa County, 2010. *Bicycle Facilities Network Map*.
- Contra Costa County, 2020. *Transportation Analysis Guidelines*.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>18. TRIBAL CULTURAL RESOURCES – <i>Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:</i></b>				
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

*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:*

- 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)***

As discussed in Environmental Checklist Section 5.a above, no cultural resources are within the footprint of the proposed RNG processing facility or the proposed pipeline alignment. Nevertheless, because construction of the proposed project would involve grading and other earthwork, it is possible that buried historical resources could be present and accidental discovery could occur. **Damage or destruction of these historic resources during project construction would be a potentially significant impact.** Consequently, the applicant is required to implement the mitigation measures **Cultural Resources 1**. Implementation of these mitigation measures would reduce the impact to a less than significant levels.

- 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? **(Less than significant with mitigation)***

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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As discussed in Environmental Checklist Sections 5.b, and 5.c above grading and other earthwork associated with project construction could encounter previously undiscovered archaeological resources and human remains. **Damage or destruction of archaeological resources and disturbance of human remains during project construction would be potentially significant impacts.** Implementation of **Cultural Resources 1** and **Cultural Resources 2** would reduce the impacts to less than significant levels.

Regarding paleontological resources, as discussed in Environmental Checklist Section 7.f, the potential for unique paleontological resources or unique geologic features along the pipeline corridor would be less-than-significant.

With respect to consultation with California Native American Tribes, on October 7, 2020, a Notice of Opportunity to Request Consultation was both mailed and sent via email to the Wilton Rancheria, the one California Native American tribe that has requested notification of proposed projects. To date, no response has been received from the Wilton Rancheria.

**Sources of Information**

- Site visits by County staff, October 2018.
- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project.*
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project.*
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description.*
- FirstCarbon Solutions, 2020. *Tribal Cultural Resources - Ameresco IS-MND Section 18.*

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>19. UTILITIES AND SERVICE SYSTEMS – Would the project:</b>				
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 telecommunication facilities, the construction or relocation of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**SUMMARY:**

- a) *Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunication facilities, the construction or relocation of which could cause significant environmental effects? (Less than significant)*

The proposed project would be constructed in an area designated for industrial use, infrastructure, and facilities. Utilities and service systems are in existence and available for use by the proposed project. To ensure adequate sewer service for the RNGPFP, the applicant will implement the following improvement, if the proposed project is approved.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- 1 Consistent with LP89-2020 COA 30.20 (On-site Septic System), the applicant shall coordinate with Contra Costa Environmental Health on the design for a new wastewater connection to the existing septic system.

Other utilities and service systems would require minor modification to meet design and construction code requirements for the RNG processing facility equipment. There would be no requirements for new or expanded utilities or other systems related to electric power, water supply, wastewater treatment, storm water drainage, or telecommunication facilities. The installation and operation of the RNG processing facility and transmission pipeline would have less than significant effects on utilities and service systems.

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

As discussed in Environmental Checklist Section 19.a above, on-site water supply would not require major modification for the proposed RNGPFP. Existing water lines would be extended as needed. As described in Environmental Checklist Section 15.a, an existing water supply tank for landfill operations is located southeast of the proposed site of the RNG processing facility, as required by LP89-2020 COA 30.8 (On-Site Water Storage). The total capacity of the water supply tank is approximately 342,300 gallons, with approximately 235,800 gallons (about 69 percent) reserved for firefighting. Thus, the allocation of water to serve the proposed project would have a less than significant impact on existing water resources.

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

As discussed in Environmental Checklist Section 19.a above, if the proposed project is approved, the applicant will coordinate with Contra Costa Environmental Health for a new wastewater connection to the existing septic system. Pursuant to LP89-2020 COA 30.20 (On-site Septic System), a septic system with a leach field was constructed for the existing LFGTE plant in 2009 under Contra Costa Environmental Health Permit 07-000-774565. The new connection would provide for a new employee restroom for the two new employees expected to operate and monitor the RNG processing facility. The applicant would be required to acquire a new or amended permit from Contra Costa Environmental Health for the new connection.

The design capacity of the existing system is 105 gallons per day (gpd) to accommodate up to seven employees at the LFGTE plant. The two employees at the proposed RNG processing facility are projected to generate approximately 30 gpd, which would increase the total flows to the existing septic system to approximately 45 gpd. The future total flow would be accommodated



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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by the capacity of the existing septic system, and therefore, the proposed project would have a less than significant impact on wastewater treatment facilities.

- d) *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? (Less than significant)*

Construction of the RNGPFP would generate construction solid waste, which would be accounted for in the state reporting system. Accordingly, if the project is approved, the applicant will implement the following measures for job site debris.

- 2 Consistent with LP89-2020 COA 31.4 (Materials Recovery) and in accordance with the 2019 California Green Building Standards Code (CalGreen) as amended in Contra Costa County Code, at least 65 percent by weight of the job site debris generated by the RNGPFP shall be recycled, reused, or otherwise diverted from landfill disposal. A Construction Waste Management (CalGreen) Plan shall be submitted for review and approval by the BID prior to commencing construction.
  
- 3 Consistent with LP89-2020 COA 31.4 (Materials Recovery) and in accordance with the CalGreen as amended in Contra Costa County Code, plans and reports with verifiable post-project documentation shall be submitted to the BID to demonstrate that at least 65 percent of the nonhazardous construction and demolition (C&D) debris generated on the job site were salvaged for reuse, recycled or otherwise diverted. A Construction Waste Management (CalGreen) Report shall be submitted to the BID prior to final inspection.
  
- 4 Pursuant to LP89-2020 COA 31.1 (Waste Reduction and Resource Recovery Objective), a Supplemental Land Clearing Debris and Universal Waste Report for CalGreen shall be submitted to the BID along with the CalGreen Report above outlining the extent and quantity of land clearing and excavation debris recycled for materials such as plants, trees, soil, sand, and rock.

During construction of the RNG processing facility, some equipment or hardware would be delivered in various containers, pallets, or skids. No significant construction debris is expected from construction of the pipeline, given the limited type of materials required (i.e. primarily pipe) and the requirement for covering the trench upon installation. If the project is approved, the applicant will implement the measures for job site debris described above to reuse, recycle, or divert disposal of job site construction debris in accordance with County Code. Thus, project construction would have a less than significant solid waste impact.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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e) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (No impact)*

As discussed in Environmental Checklist Section 19.d above, if the proposed project is approved, a Construction Waste Management (CalGreen) Plan to track the tonnage of debris will be submitted for approval to the BID prior to construction. Similarly, a post-project Construction Waste Management (CalGreen) Report will be prepared to demonstrate how non-hazardous C&D was handled. This report will be submitted to the BID prior to final inspection. Construction of the RNG processing facility would require site development, grading, and limited tree removal. Accordingly, if the proposed project is approved, a Supplemental Land Clearing Debris and Universal Waste Report for CalGreen will be prepared outlining the extent and quantity of land clearing and excavation debris recycled. This report will be submitted to the BID for review and approval. Thus, there would be no conflict with existing regulations applicable to solid waste. The project would have no impact.

**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Utilities and Service Systems - Ameresco IS-MND Section 19*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>20. WILDFIRE</b> – <i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby, expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

*If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*

- a) ***Substantially impair an adopted emergency response plan or emergency evacuation plan? (Less than significant)***

As discussed in Environmental Checklist Section 9.g (Hazards and Hazardous Materials), project site is 1.7 miles northwest of the Concord Hills and six miles north of Mount Diablo State Park. The project site, and the neighboring open space and park lands are in a high fire hazard severity zone. However, the potential for wildfires originating from the RNG processing facility or pipeline is greatly minimized by the consistency measures discussed in Environmental Checklist Section 9.a and the design criteria described in Environmental Checklist Section 9.b. In addition, due to its location in a high fire hazard severity zone, project implementation would conform to California Building Code Chapter 7A (Materials and Construction Methods for Exterior Wildfire

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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Exposure) and California Fire Code Chapter 47 (Requirements for Wildland-Urban Interface Fire Areas), which would reduce the risk of loss, injury or death from wildland fires

As discussed in Environmental Checklist Section 15.a (Public Services – Fire Protection), fire protection and emergency medical response services in the project vicinity are provided by the CCCFPD, which has four fire stations in proximity to KCL. Due to the location of the RNGPFP within KCL property, the proposed project would be subject to LP89-2020 COAs. Existing LP89-2020 permit conditions include:

- Meeting the requirements of the CCCFPD for fire hydrants (COA 30.5, Fire Protection Component);
- Providing an on-site fire protection water supply (COA 30.8, On-Site Water Storage);
- Maintaining a 60-foot fire break around the perimeter of the landfill and any buildings or structures (COA 30.12, Fire Breaks);
- Equipping the landfill facilities with fire extinguishers (COA 30.13, Fire Extinguishers);
- Providing emergency vehicle access (COA 30.17, Emergency Equipment Access); and
- Instituting smoking prohibitions (COA 30.18, Smoking Prohibitions).

Compliance with the LP89-2020 COAs and all CCCFPD requirements would ensure that project impacts on emergency response and evacuation would be less than significant.

*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? (Less than significant)*

The RNGPFP project on KCL property and the adjoining PG&E utility corridor would be on hilly terrain that varies in elevation from approximately 270 feet at the KCL entrance on Bailey Road to approximately 410 feet at the LFGTE plant to approximately 60 feet at the PG&E valve lot. Access to the RNGPFP would be via Bailey Road and internal KCL roads, including a paved asphalt road to the RNG processing facility site. Accordingly, access to and from the processing facility would not be substantially encumbered due to a wildfire and persons on the project site would be able to readily evacuate if necessary. With respect to the underground RNG transmission pipeline, employees would conduct inspection and maintenance from time to time but would not regularly be in the pipeline corridor. Most of the pipeline corridor would be accessible via internal KCL and PG&E roads, and employees would be able to evacuate using the roads if necessary. In addition to meeting CCCFPD requirements as discussed in Environmental Checklist Section 20.a above, construction plans for the RNGPFP would be reviewed and approved by the CCCFPD. With the preceding consideration, wildfire risk to persons at the RNG processing facility would be less than significant.



Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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- 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)*

As discussed in Environmental Checklist Section 20.a above, construction plans for the RNGPFP facilities would be reviewed and approved by the CCCFPD, and compliance with all Fire Protection District requirements would ensure that temporary or ongoing impacts to the environment due to wildfires would be less than significant.

- d) *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? (Less than significant with mitigation)*

In Environmental Checklist Sections 7.a.iii, 7.a.iv, 7.b, and 7.c, the proposed RNGPFP would have **potentially significant impacts due to seismic related ground failure, reactivation of ancient landslides, soil erosion, and liquefaction, and unstable geologic units or soil**. Accordingly, the applicant is required to implement mitigation measures **Geology 1, Geology 2, Geology 3, and Geology 4**.

Implementation of these mitigation measures would reduce the risks seismic related ground failure, reactivation of ancient landslides, soil erosion, and liquefaction, and unstable geologic units or soil to less than significant levels.

**Sources of Information**

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Wildfire - Ameresco IS-MND Section 20*.

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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<b>21. MANDATORY FINDINGS OF SIGNIFICANCE</b>				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Does the project have impacts that are individually limited, but cumulatively considerable? (“Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**SUMMARY:**

- a) *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? (Less than significant with mitigation)*

As assessed in Environmental Checklist Sections 4 (Biological Resources), 5 (Cultural Resources), and 18 (Tribal Cultural Resources), the proposed project would have **potentially significant construction impacts on special status species, sensitive natural communities, wetlands, and wildlife corridors, and due to accidental discovery of buried historic and archaeological resources.** Mitigation measures, including **Biology 1 through Biology 11** and **Cultural Resources 1**, are proposed in this Initial Study. If the proposed project is approved, the mitigation measures

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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will be conditions of approval of the proposed project and the applicant will be responsible for implementation of the measures. With implementation of the mitigation measures, project impacts will be less than significant.

- 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)*

The proposed project would not create substantial cumulative impacts. The proposed RNG processing facility would be located in an area that is currently in use as the KCL active landfill. The proposed underground RNG transmission pipeline would start in the active landfill, traverse the landfill open space buffer area, and through the PG&E utility corridor. As discussed in Section 8 (Description of Project), the proposed project would be consistent with LP89-2020 COA 31.7 (Methane Recovery) and as discussed in Environmental Checklist Section 3.a, would provide a beneficial use for the landfill gas generated from operating the landfill and would be consistent with the goals and objectives of the Clean Air Plan. Moreover, as discussed in Environmental Checklist Section 8.a, KCL would have a beneficial impact on potential GHG emissions. Thus, the project would have a less than significant impact on cumulative conditions in the county, and in fact, would have a beneficial effect by reducing air contaminants and potential GHG emissions.

- 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)*

This Initial Study has disclosed impacts that would be less than significant with the implementation of mitigation measures. As evaluated in Environmental Checklist Sections 4 (Biological Resources), 5 (Cultural Resources), 7 (Geology and Soils), 13 (Noise), 18 (Tribal Cultural Resources), and 20 (Wildfire), the proposed project includes the construction of a RNG processing facility and installation of an underground RNG transmission pipeline that would create **potentially significant impacts**. Implementation of mitigation measures **Biology 1 through Biology 11, Cultural Resources 1, Cultural Resources 2, Geology 1 through Geology 5, and Noise 1** would reduce the impact of the construction of the RNG processing facility and installation of the RNG transmission pipeline to less than significant levels. These mitigation measures are required in the conditions of approval for the proposed project, and the applicant would be responsible for implementation of the mitigation measures. As a result, there would not be any environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. Therefore, the project would have a less than significant impact with the mitigation measures.

## REFERENCES

In the process of preparing the Initial Study Checklist and conduction of the evaluation, the following references were consulted and are available for review by contacting the Contra Costa County Department of Conservation and Development, 30 Muir Rd., Martinez, CA 94553:

- Ameresco Keller Canyon, 2018. *Proposed Gas Processing and Pipeline Project*.
- Ameresco Keller Canyon, 2018. *Project Plans, Proposed Gas Processing and Pipeline Project*.
- Darwin Myers Associates, 2020. *Geologic Peer Review /Geotechnical Reports & CEQA Assessment, LP18-2022/APN 094-360-019, etc. & 094-080-012, Bay Point Area, Contra Costa County, DMA Project # 3006.20*.
- Environmental Management et al., 2020. *Ameresco IS-MND Chp. 2 Project Description*.
- Environmental Management et al., 2020. *Aesthetics - Ameresco IS-MND Section 1*.
- Environmental Management et al., 2020. *Agricultural and Forest Resources - Ameresco IS-MND Section 2*.
- Environmental Management et al., 2020. *Air Quality - Ameresco IS-MND Section 3*.
- Environmental Management et al., 2020. *Energy - Ameresco IS-MND Section 6*.
- Environmental Management et al., 2020. *Greenhouse Gases - Ameresco IS-MND Section 8*.
- Environmental Management et al., 2020. *Hazards and Hazardous Materials - Ameresco IS-MND Section 9*.
- Environmental Management et al., 2020. *Public Services - Ameresco IS-MND Section 15*.
- Environmental Management et al., 2020. *Transportation - Ameresco IS-MND Section 17*.
- Environmental Management et al., 2020. *Utilities and Service Systems - Ameresco IS-MND Section 19*.
- Environmental Management et al., 2020. *Wildfire - Ameresco IS-MND Section 20*.
- FirstCarbon Solutions, 2020. *Cultural Resources - Ameresco IS-MND Section 5*.
- FirstCarbon Solutions, 2020. *Tribal Cultural Resources - Ameresco IS-MND Section 18*.
- Illingworth & Rodkin, 2020. *Noise - Ameresco IS-MND Section 13*.
- Swaim Biological Inc. et al., 2020. *Biological Resources - Ameresco IS-MND Section 4*.
- Tetra Tech et al., 2020. *Hydrology & Water Quality - Ameresco IS-MND Section 10*.