



**San Joaquin Valley Unified
Air Pollution Control District**

**Aera Energy Belridge Oil Field Complex
Oil Field Steam Generators Project**

**Project Numbers
S-1113576, S-1113577
S-1121401, S-1121402**

**Belridge Oil Field
Kern County**

**Initial Study and Draft
Mitigated Negative Declaration**

January 2014

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GOVERNING BOARD 2014**

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INITIAL STUDY AND DRAFT MITIGATED NEGATIVE DECLARATION

Aera Energy Belridge Oil Field Complex Oil Field Steam Generators Project

**Project Numbers:
S-1113576, S-1113577, S-1121401, S-1121402**

January 2014

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A. INTRODUCTION

Aera Energy LLC (Aera) is a Title V oil production company with facilities located in Kern County, California. The San Joaquin Valley Unified Air Pollution Control District (District) has received two (2) Authority to Construct (ATC) application packages from Aera to install and operate one (1) new 100 MMBtu/hr natural gas-fired pilot oil field steam generator (OSG) unit, and a main OSG program consisting of up to twenty-nine (29) new 85 MMBtu/hr or twenty-six (26) new 100 MMBtu/hr natural gas-fired OSGs. The pilot OSG unit will be located in one location while the main OSG program will be located in three (3) separate sites out of a potential six (6) locations in the existing North and South Belridge Oil Fields, and all within Aera's Heavy Oil Western and Light Oil Western Stationary Sources. The District concluded that these ATC applications must be considered a single project (installation and operation of up to a total of 30 steam generators) for purposes of evaluating the environmental impacts under the California Environmental Quality Act (CEQA), and will be collectively referred to as the "Project".

The Project is consistent with current operations and will allow for continued oil and gas related activities necessary to enhance oil recovery within the current operations of Aera. As presented in this environmental document, the District has conducted an Initial Study and concludes that, with mitigation, the Project will have a less than significant environmental impact.

B. PURPOSE AND AUTHORITY

The District has discretionary approval power over the Project, pursuant to Rule 2010, *Permits Required Rule*, and Rule 2201, *New and Modified Stationary Source Review Rule*. No other agency is known to have discretionary approval over the project. As such, the District is the public agency having principal responsibility for approving the project and serves as Lead Agency (CCR §15367).

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The ERG was prepared to comply with this requirement and is an internal document used to comply with CEQA.

The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities.
- Identify the ways that environmental damage can be avoided or significantly reduced.



- Prevent significant, avoidable damage to the environment by requiring changes in projects through use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible.
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

Under CEQA the Lead Agency is required to:

- Conduct preliminary reviews to determine if applications are subject to CEQA [CCR §15060].
- Conduct review to determine if projects are exempt from CEQA [CCR §15061].
- Prepare Initial Studies for projects that may have adverse environmental impacts [CCR §15063].
- Determine the significance of the environmental effects caused by the project [CCR §15064].
- Prepare Negative Declarations or Mitigated Negative Declarations for projects with no significant environmental impacts [CCR §15070].
- Prepare, or contract to prepare, EIRs for projects with significant environmental impacts [CCR §15081].
- Adopt reporting or monitoring programs for the changes made to projects or conditions of project approval, adopted in order to mitigate or avoid significant effects on the environment [PRC §21081.6 & CCR §15097].
- Comply with CEQA noticing and filing requirements.

C. PROJECT BACKGROUND INFORMATION

Project Description

Aera is an oil production company that operates oil and gas production facilities across California, including the portion of the Belridge Oil Field in Kern County. Aera has a Title V Operating Permit for its operations at the Belridge Oil Field and is classified as a major source as defined in Section 3.24 of District Rule 2201, *New and Modified Stationary Source Review Rule*. Therefore, the installation and operation of stationary source equipment for this project is subject to District permit requirements.

One major requirement is that new and modified equipment that has air contaminant emissions must satisfy the requirements of New Source Review (NSR). The main requirements of NSR are to require the installation of Best Available Control Technology (BACT) to minimize emission increases from such equipment and to mitigate emission increases over certain thresholds by providing emission reductions either by limiting the use of existing equipment or by providing emission offsets.



The District has received two (2) ATC application packages. The first ATC application package covers the installation of a single 100 MMBtu/hr pilot OSG unit which would be placed in a single location within the Belridge Oil Field Complex. Aera desires the ability to utilize the pilot OSG in both heavy oil and light oil steaming activities and is requesting two (2) ATCs, one associated with each of the existing Heavy Oil Western and Light Oil Western Stationary Sources.

The second ATC application package covers the main OSG program and represents two OSG sizes. Aera is proposing to install either twenty-nine (29) 85 MMBtu/hr OSGs or twenty-six (26) 100 MMBtu/hr OSGs, but not both. The OSGs are planned to be installed at three (3) separate sites from six (6) potential locations. The status, extent, and timing of installation of these OSGs will be dependent on the success of OSG projects previously permitted by the District (Initial Study and Final Mitigated Negative Declaration, Aera Energy Belridge Oilfield Complex Steam Generators Project, Project Numbers S-1084210, S-1084406, S-1084433, S-1084434, May 2011).

For the 85 MMBtu/hr OSGs, a total of one hundred sixteen (116) ATCs have been requested to install and operate a total of twenty-nine (29) OSGs, with each installed OSG having a Permit to Operate (PTO) in both the Heavy Oil Western Stationary Source and Light Oil Western Stationary Source. Under this scenario, only fifty-eight (58) ATCs would be implemented for the 85 MMBtu/hr OSGs.

For the 100 MMBtu/hr OSGs, a total of one hundred four (104) ATCs have been requested to install and operate twenty-six (26) OSGs, with each installed OSG having a PTO in both Heavy Oil Western Stationary Source and Light Oil Western Stationary Source. Under this scenario, only fifty-two (52) ATCs would be implemented for the 100 MMBtu/hr OSGs.

The installation of the pilot OSG unit will occur at one site. The installation of the main OSG program, consisting of twenty-nine (29) or twenty-six (26) OSGs, will occur at three (3) separate sites out of a possible six (6) locations. Location options for installation of the pilot and main program OSGs are identified in Table 1 below. The District has determined that the pilot OSG unit and main OSG program constitute the "Project" for CEQA analysis.

As discussed in the ATC applications, the installation and operation of the pilot OSG unit is not a SB 288 Major Modification. However, the installation of the main OSG program, consisting of the twenty-nine (29) 85 MMBtu/hr or twenty-six (26) 100 MMBtu/hr OSGs, is a SB 288 Major Modification for Oxides of Nitrogen (NO_x), Particulate Matter less than or equal to 10 micrometers in diameter (PM₁₀), and volatile organic compounds (VOC), and a Federal Major Modification for NO_x, PM₁₀, Particulate Matter less than or equal to 2.5 micrometers in diameter (PM_{2.5}), and VOCs; therefore, BACT is triggered for NO_x, PM₁₀, PM_{2.5}, and VOCs for major modification purposes.

Operational project emissions calculations presented in Table 2 below, as part of the ATC application packages, are depicted for the worst case buildout scenario which



consists of twenty-seven (27) 100 MMBtu/hr OSGs, each equipped with an ultra-low NOx burner, capable of achieving 7 ppmv NOx @ 3 percent O₂. For the worst case emission calculation results, the 100 MMBtu/hr units were used since the total maximum fired duty is larger than the scenario with 85 MMBtu/hr units and the single 100 MMBtu/hr pilot OSG unit.

Table 1 – Proposed Equipment Locations

Location	Section	Township	Range	USGS
2972 (Pilot Only)	NE/4 Section 29	28S	21E	MDB&M
2829	NE/4 Section 29	28S	21E	MDB&M
	SE/4 Section 29	28S	21E	MDB&M
	NW/4 Section 28	28S	21E	MDB&M
	SW/4 Section 28	28S	21E	MDB&M
2857	SE/4 Section 28	28S	21E	MDB&M
	SW/4 Section 28	28S	21E	MDB&M
3467	SE/4 Section 34	28S	21E	MDB&M
3356	SE/4 Section 33	28S	21E	MDB&M
2-5	NW/4 Section 2	29S	21E	MDB&M
	SW/4 Section 2	29S	21E	MDB&M
3-2	NW/4 Section 3	29S	21E	MDB&M
	SW/4 Section 3	29S	21E	MDB&M
	NE/4 Section 3	29S	21E	MDB&M
	SE/4 Section 3	29S	21E	MDB&M



Table 2. Project Proposal Operational Emissions – 100 MMBtu/hr Units

Location	Number of Units	Annual Emissions (lb/year)					
		NO _x	SO _x	PM ₁₀	PM _{2.5}	CO	VOC
2972 (Pilot Only)	1	7,008	1,840	4,380	4,380	16,206	2,628
2829 or 2857	10	70,080	18,400	43,800	43,800	162,060	26,280
3467 or 3356	9	63,072	16,560	39,420	39,420	145,854	23,652
2-5 or 3-2	7	49,056	12,880	30,660	30,660	113,442	18,396
Maximum Emissions		189,216	49,680	118,260	118,260	437,562	70,956

Notes:

- The above emissions assume 7 ppmv NO_x @ 3% O₂.
- A combination of 85 MMBtu/hr steam generators and 100 MMBtu/hr steam generators will be installed at the above locations. The total maximum fired duty of all steam generators installed will not exceed 2,700 MMBtu/hr.

Installation of the twenty-nine (29) 85 MMBtu or twenty-six (26) 100 MMBtu OSG would be restricted as follows:

- Either 2829 or 2857, but not both;
- Either 3467 or 3356, but not both; and
- Either 2-5 or 3-2, but not both.

Project Construction

The status, extent, and timing of installation of the pilot OSG unit would begin shortly after ATC permits from the District and grading/building permits from Kern County are received. The site clearing, site preparation and infrastructure installation was previously addressed in the Mitigated Negative Declaration prepared for a previously permitted OSG project in which twenty-two (22) OSGs were proposed to be located in the same project areas as the current project (Initial Study and Final Mitigated Negative



Declaration, Aera Energy Belridge Oilfield Complex Steam Generators Project, Project Numbers S-1084210, S-1084406, S-1084433, S-1084434, May 2011).

Construction timing for the installation of the main OSG program, consisting of twenty-nine (29) 85 MMBtu or twenty-six (26) 100 MMBtu OSGs, will be dependent on the success of the previous twenty-two (22) OSG project currently permitted by the District. Construction is expected to begin in early 2014 and completed by the end of 2016.

Construction activities will consist of demolition of existing equipment, site preparation, and installation of the OSGs on Aera property. During construction Aera will take measures to minimize soil and natural vegetation disturbance. Older equipment will be removed from service and the surrounding support soil will be compacted and/or replaced as necessary. The size of each of the proposed locations ranges from 1.8 to 6.5 acres. However, actual land disturbance will be limited to no more than 7 acres.

Construction activities will include:

- Demolition of some existing onsite equipment
- Site preparation: Excavation, grading, soil compaction, etc.
- New foundation construction as needed: pour slurry, place rebar / supports
- Facility Construction/Installation: Install below ground drain system, install concrete sump, install grounding halos, place structural steel, install pre-fabricated pipe spools, erect pre-fabricated equipment frames and platforms
- Set equipment: Separators, small chemical tanks, air compressor, generator(s), pump(s)
- Insulate pipe / equipment
- Install transformer and pad
- Install septic system and control room
- Touch up paint for structural steel
- Grade and pave access roads

For the purposes of this evaluation, each project area disturbed by construction is expected to require approximately one hundred five (105) haul trips during the construction period. All temporary equipment staging areas will become part of the plant site and/or be set aside for employee and visitor vehicle parking.

All project sites will have two vehicle access points during and after construction. However, it is expected that one of the access points will be designated as "entry" and the other "exit." During peak construction for each project area, staffing is expected to include thirty-five (35) to forty-five (45) mechanical/civil/structural workers, five (5) Aera staff, and ten (10) to twelve (12) electricians, totaling a maximum of sixty-two (62) workers onsite for each site. After construction is complete there will be few, if any, new permanent employees. Existing Aera staff and contract workers will be reassigned to



the Project locations from other positions at the Belridge Oil Field or nearby projects that are ramping down, which will result in no net change in operational employees.

Process Description

The new OSGs will be used for steam enhanced oil production at various specified locations. The OSGs produce steam, which is injected into the formation to lower the viscosity of underground deposits of crude oil and thereby increase oil flow.

The OSGs will be authorized to burn only PUC-, or FERC-regulated natural gas, low-sulfur produced gas, or treated produced gas from Aera's Section 32 gas plant (S-1543). They will not be authorized to burn gas from Aera's thermally enhanced oil recovery operation (TEOR), casing vent gas collection systems, or vapor control systems.

Depending on the location, the OSGs will provide steam for steam-enhanced wells permitted under S-1547-359 (1,657 wells), S-1547-638 (396 cyclic and 5,384 steam drive wells), S-1548-423 (up to 1,170 wells), and S-1548-470 (up to 30 wells). The produced fluids will continue to go to existing vapor controlled tanks at Dehy 20 (S-1548-144, et al) and Dehy 2 (S-1547-888, et al).

Project Location

The Project is located in Kern County, California, in the San Joaquin Valley Air Basin (see Figure 1). The project sites are located within Aera's existing surface boundaries in the Belridge Oil Fields, as designated by the California Department of Oil, Gas, and Geothermal Resources (DOGGR). Aera's Belridge Producing Complex is made up of the North Belridge and South Belridge Oil Fields that together cover an area roughly twenty two (22) miles long and two and a half (2.5) miles wide. The Project is located in both the North and the South Belridge Oil Fields, approximately forty five (45) miles northwest of the City of Bakersfield and is depicted in Figure 2. Figure 3 shows Aera's existing facility boundaries while Figure 4 provides the specified proposed locations for the OSGs as identified in Table 1.

General Plan Designation and Zoning

Section 19.10.040 of the Kern County Zoning Ordinance incorporates by reference the zoning district boundaries. As shown on the Official Zoning Maps, maintained by the Kern County Planning Department (Zoning Map 75 and Zoning Map 96), all areas of the Project are zoned "A", "Exclusive Agriculture District."

Pursuant to Section 19.12.020, Part E, *Resource Extraction and Energy Development Uses*, of the Kern County Zoning Ordinance, "Cogeneration facility or steam generators, primarily intended for steam production used for production of oil or gas, excluding coal fired" may be permitted in areas designated for as an "Exclusive Agriculture District (A)."



Surrounding Land Uses and Setting

The existing Project area is either used for oil production by Aera or currently unused. The area immediately surrounding the Project is designated as agriculture and resource land use and is zoned for agricultural uses. These uses include general agricultural operations and oil field production. Belridge Elementary School is the nearest school to the Project and it is located west of the Project site. The District has verified that the Project is not within 1,000 feet of the school's outer boundary; therefore the public notification requirement of California Health and Safety Code 42301.6 is not applicable to the Project.

Other Public Agencies Whose Approval Is Required

The District has identified the following agencies as having approval authority for the Project.

US Environmental Protection Agency (US EPA)

The Project will require an administrative amendment/minor modification of Aera's existing Title V permit that will be processed with a Certificate of Conformity. As such, the Project must be submitted to the USEPA for a 45-day comment period. Aera must apply to modify the existing Title V permit to include the requirements of any ATCs issued for the Project.

US Fish and Wildlife Service (USFWS)

The USFWS has regulatory authority over projects that could result in the "take" of any species identified as threatened or endangered. If the Project would result in the incidental take of any federally identified species, an Incidental Take Permit and/or a Habitat Conservation Plan would be required.

California Air Resources Board (ARB)

Pursuant to District Rule 2201, Section 3.18 the Project is classified as a Federal Major Modification. As such, the project must be submitted to the ARB for a 30-day comment period.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR)

The DOGGR has the authority to order the re-abandonment of previously abandoned wells. Prior to construction, Aera will provide the District with documentation demonstrating that maps identifying all wells in the vicinity of the steam generator sites have been submitted to DOGGR for review.



California Department of Fish and Wildlife (CDFW)

The CDFW has regulatory authority over projects that could result in the “take” of any species identified by the State of California as threatened or endangered. If the Project would result in the “take” of any identified species, an Incidental Take Permit would be required.

California Regional Water Quality Control Board (RWQCB)

The Project will result in no waste or water discharge; hence no approvals from the RWQCB will be required. Also, no streambed or lake alterations will occur as a result of the Project.

Kern County Planning Department

The Project will be located within Kern County and thus, the Kern County Planning Department has approval authority over the project. The Project will be located within existing boundaries of Aera operations. As such, the Kern County Planning Department requires only the issuance of grading and/or building permits.

Other Agencies

The District is not aware of any other agencies with approval authority for the Project.

D. DECISION TO PREPARE A MITIGATED NEGATIVE DECLARATION

Consistent with CEQA requirements the District prepared an Initial Study that evaluated potential environmental effects of the project. The District has determined that with mitigation the project will have a less than significant impact on the environment. The District concludes that a Mitigated Negative Declaration would be appropriate for the project. Project design elements and mitigation measures that reduce the Project’s impact on the environment would be enforced through:

- District permit conditions and offset fees;
- Incorporation of Best Performance Standards (BPS);
- Corrective actions to be taken to reduce impacts if species known to be protected are identified within the Project sites;
- Cessation of construction activities if cultural/archaeological remains are found; and
- Compliance with requirements as deemed necessary by Responsible Agencies.



Figure 1: The San Joaquin Valley Air Basin

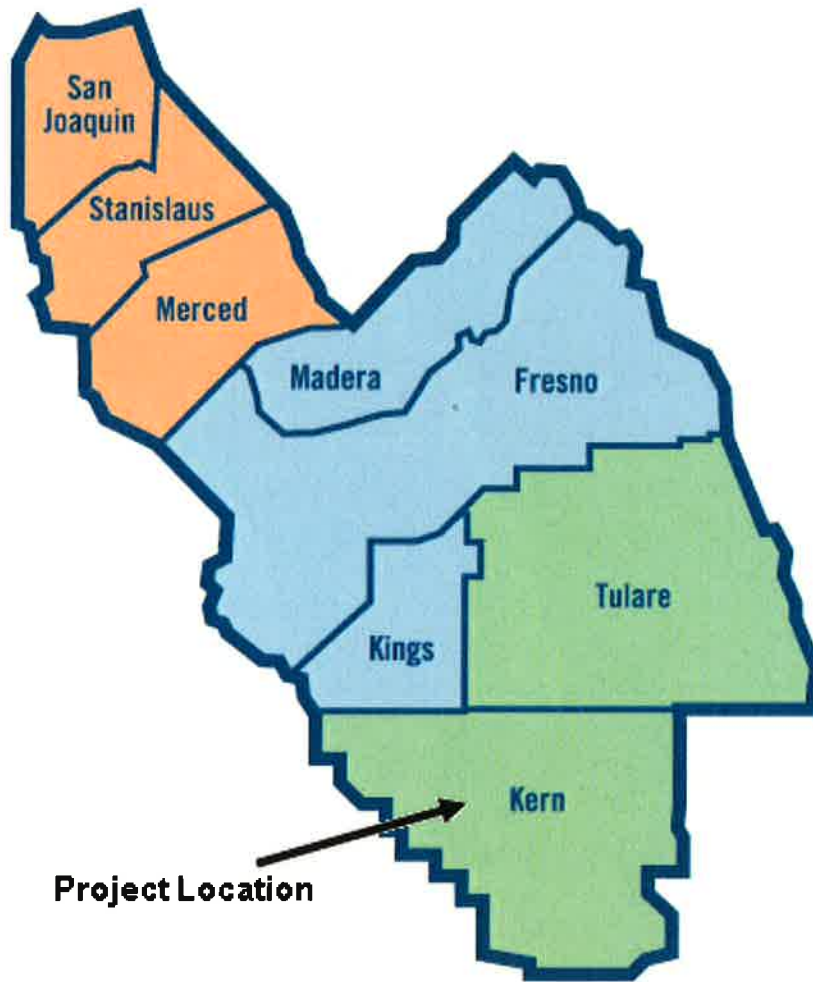
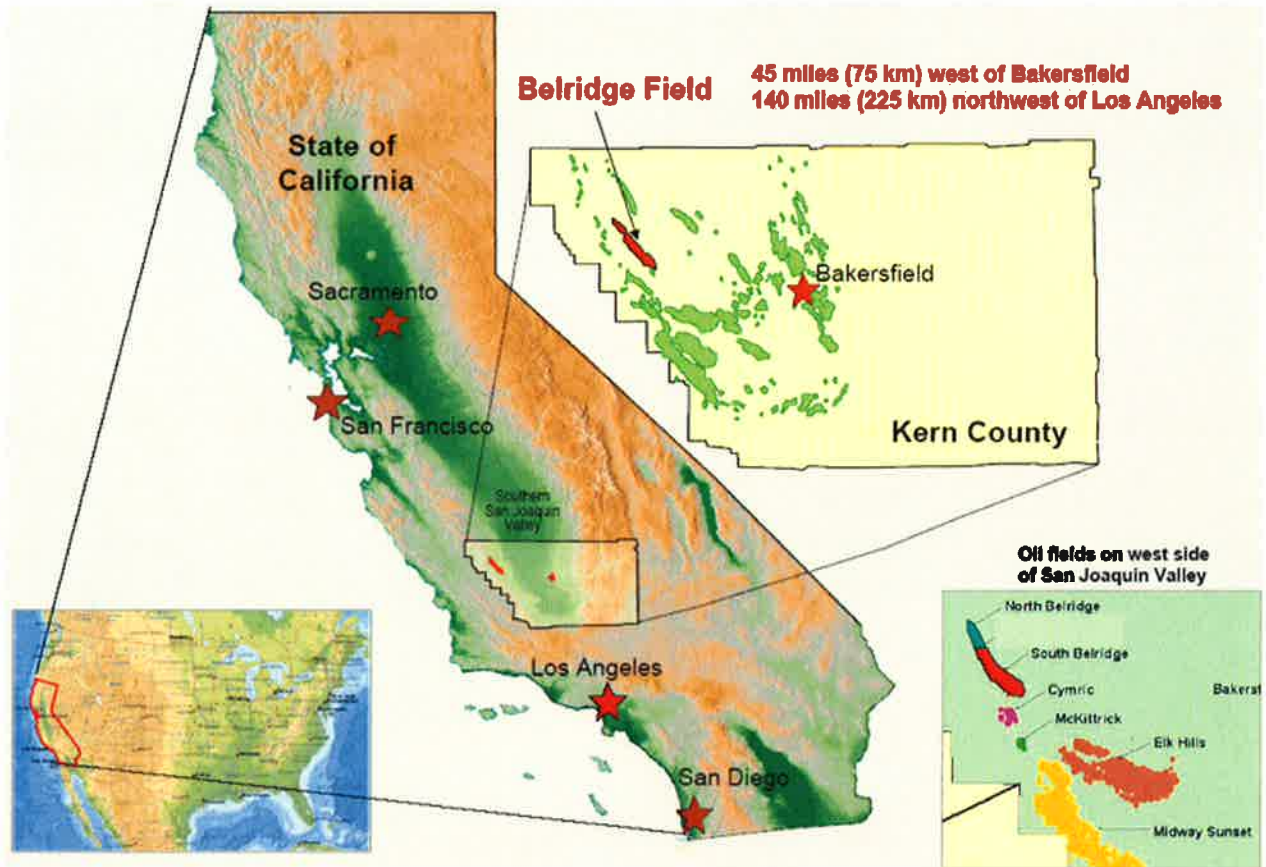




Figure 2: Belridge Oil Field Location



Map obtained from the following website:
<http://www.searchanddiscovery.com/documents/2006/06143allan/index.htm>



Figure 3: Aera's Existing Facility Boundaries

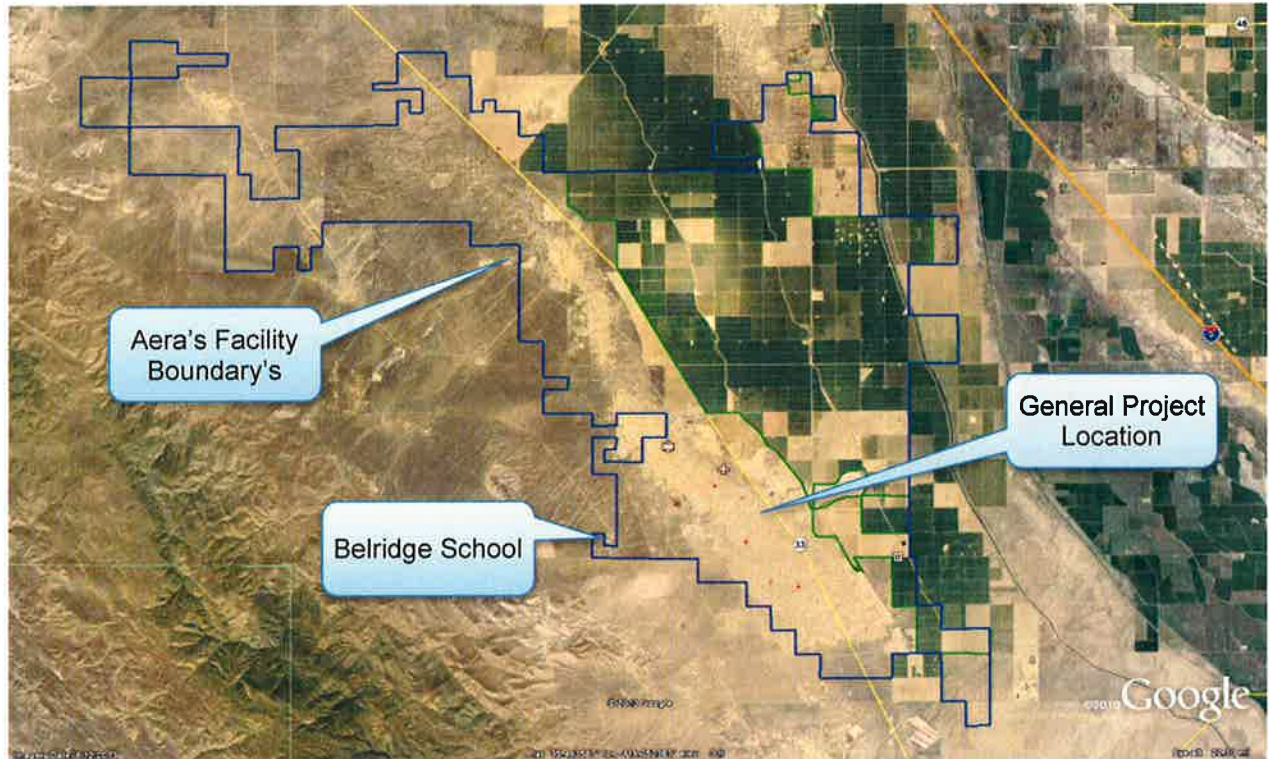
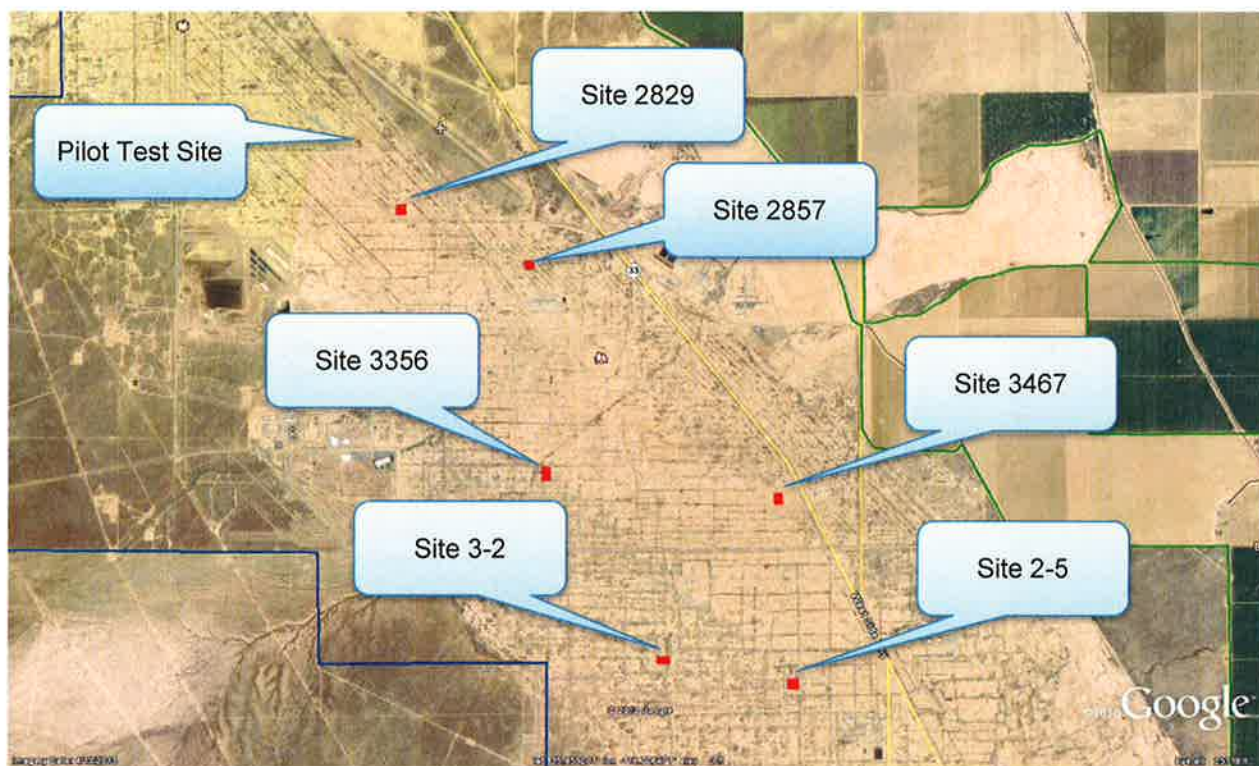




Figure 4: Locations for Proposed Oil Field Steam Generators





E. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

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

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture and Forestry Resources | <input checked="" type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <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 / Traffic | <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance |

F. DETERMINATION

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

- I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION has been 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.

Signature: 

Date: JAN 09 2014

Printed Name: David Warner

Title: Director of Permit Services



G. ENVIRONMENTAL IMPACT CHECKLIST

I. Aesthetics Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?				✓
b) Substantially damage scenic resources, including, but not limited to trees, rock, outcroppings, and historic buildings within a state scenic highway?				✓
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				✓
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				✓

I. AESTHETICS

Scenic Vistas and Visual Character (a-d)

Conclusion: The Project will not have an impact on scenic vistas, damage scenic resources, degrade visual character in and around the sites or create new sources of light or glare.

Discussion: The Project will be located within Aera’s existing properties that historically have been allowed for the exploration and production of oil (Figure 3). The Project is consistent with surrounding land uses. There are no scenic vistas or scenic resources such as trees, rock outcroppings, or historic buildings. The absence of these features on or nearby the project site precludes the possibility of potential adverse impacts. Figure 6 provides a view of one steam generator site from approximately ¼-mile distance. Construction of the Project will only occur during daylight hours. Minimal operational lighting may be installed consistent with existing Aera operations.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that construction and operation of the Project would have a detrimental impact on aesthetics.

Mitigation: None required.



Figure 6: General View of Project Site



References

California Department of Transportation. *Officially Designated State Scenic Highways*.
Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/index.htm

Google Maps, December 2011.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



II. Agricultural Resources	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
<p>In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1197) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agricultural and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resource Board.</p> <p>Would the Project</p>				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				✓
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				✓
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220 (g)), timberland (as defined by Public Resource Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104 (g))?				✓
d) Result in the loss of forest land or conversion of forest land to non-forest use?				✓
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				✓

II. AGRICULTURAL RESOURCES

Farm Land (a-e)

Conclusion: The Project will not conflict with existing zoning and will not have impact on agriculture and forest lands.



Discussion: The Project will be located on existing Aera property that is currently being used for oil production. This area is designated in the Kern County 2009 General Plan as Mineral and Petroleum (Code 8.4) and Mineral and Petroleum Flood Plain (Code 8.4/2.5), which are zoned as Exclusive Agriculture (Zone A). Pursuant to Section 19.12.020, Part E of the Zoning Ordinance of Kern County: steam generators (excluding coal fired), are a permitted use in Exclusive Agriculture District Zone A. The Project is within the existing North and South Belridge Oil Field boundaries, as designated by DOGGR. The exploration and production of oil have historically been allowed on the Project sites. The Project sites are not designated as Prime Farmland, Unique Farmland, or of Statewide Importance. No forest lands are located on the Project sites. The Project is consistent with current and surrounding land uses and will not convert farm or forest lands to non-farm or non-forest uses.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that construction or operation of the Project would have an impact on Agricultural or Forest Resources.

Mitigation: None required.

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County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



III. Air Quality	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Would the Project: Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations.				
a) Conflict with or obstruct implementation of the applicable air quality plan?		✓		
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?		✓		
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?		✓		
d) Expose sensitive receptors to substantial pollutant concentrations?			✓	
e) Create objectionable odors affecting a substantial number of people?				✓

III. AIR QUALITY

Air Quality Plans and Standards (a, b, c)

Conclusion: The Project, with the incorporation of mitigation measures, will have a less than significant impact on air quality.

Discussion: The District is tasked with implementing programs and regulations by the Federal Clean Air Act and the California Clean Air Act and has prepared plans to attain federal and state Ambient Air Quality Standards (AAQS). The District has established thresholds of significance for criteria pollutant emissions, which are based on federal and District New Source Review (NSR) offset requirements for stationary sources.

Stationary sources in the District are subject to some of the toughest regulatory requirements in the nation. Emission reductions achieved through implementation of federal offset requirements are a major component of the District's air quality plans. Thus, projects with emissions below the thresholds of significance for criteria pollutants would be determined not to conflict or obstruct implementation of the District's air quality plans.

Emissions from operational non-permitted equipment and activities are evaluated separate from permitted equipment and activities. A project would be determined to



have a significant long-term impact on air quality if the emissions sum for any criteria pollutant exceeds its respective threshold of significance. The District's thresholds of significance for criteria pollutant emissions and their application are presented below in Table 3.

Table 3: District Thresholds of Significance for Criteria Pollutants

Pollutant	Construction Emission Threshold (tpy*)	Permitted Operational Emission Threshold (tpy)	Non-Permitted Operational Emission Threshold (tpy)
NO _x	10	10	10
SO _x	27	27	27
PM ₁₀	15	15	15
PM _{2.5}	15	15	15
CO	100	100	100
ROG (VOC)	10	10	10
* tpy = tons per year			

Project Details

Aera is an oil production company that operates oil and gas production facilities across California including the portion of the Belridge Oil Field in Kern County. Aera proposes to install a single 100 MMBtu/hr pilot OSG unit at one location and will then install the main OSG program, which consists of the installation and operation of either twenty-nine (29) 85 MMBtu/hr OSGs or twenty-six (26) 100 MMBtu/hr OSGs, at three (3) of six (6) separate locations. The locations for the proposed OSGs as presented in Table 2. The main OSG program is not dependent on the success of the pilot OSG unit.

Pilot OSG Unit

Aera has requested the installation of a single 100 MMBtu/hr pilot OSG unit to be placed in a single location within the Belridge Oil Field Complex. Two (2) ATCs will be issued for the pilot OSG unit authorizing the OSG to provide steam for both Aera's existing Heavy Oil Western Stationary Source (S-1547) and Light Oil Western Stationary Source (S-1548). The steam generator will be equipped with an ultra-low NO_x burner capable of achieving down to 7 ppmv NO_x @ 3% O₂.

Main OSG Program



Aera has requested the installation of up to twenty-nine (29) new 85 MMBtu/hr or twenty-six (26) new 100 MMBtu/hr natural gas-fired OSGs to be located within the Belridge Oil Field Complex.

If the 85 MMBtu/hr OSGs are to be installed, then a total of one hundred sixteen (116) ATCs will be issued for the installation and operation of a total of twenty-nine (29) OSGs, with each installed OSG having a Permit to Operate (PTO) in both the Heavy Oil Western Stationary Source and Light Oil Western Stationary Source. However, only fifty-eight (58) ATCs will be implemented for the 85 MMBtu/hr OSGs.

If the 100 MMBtu/hr OSGs are to be installed, then a total of one hundred four (104) ATCs will be issued for the installation and operation of twenty-six (26) OSGs, with each installed OSG having a PTO in both Heavy Oil Western Stationary Source and Light Oil Western Stationary Source. However, only fifty-two (52) ATCs will be implemented for the 100 MMBtu/hr OSGs.

Each OSG will have a maximum natural gas firing capacity of either 85 MMBtu/hr or 100 MMBtu/hr. Aera has proposed several options for achieving low NO_x emissions that range from 5 ppmv to 7 ppmv at 3 percent O₂ depending on the final selection of the OSGs. The final selection of OSGs will satisfy BACT and Rule 4320 (*Advanced Emission Reduction Options for Boilers, Steam Generators, and Process Heaters Greater than 5.0 MMBtu/hr*) requirements.

Summary of Project Options

The District has determined that the pilot OSG unit and the main OSG program together constitute the “Project” for CEQA analysis. As such, the District has evaluated potential impacts on air quality from each of the four (4) buildout options identified below:

- Option 1: Installation of the single 100 MMBtu pilot OSG unit plus twenty-six (26) 100 MMBtu OSGs with a 7 ppmv NO_x limit;
- Option 2: Installation of the single 100 MMBtu pilot OSG unit plus twenty-six (26) 100 MMBtu OSGs with a 5 ppmv NO_x limit;
- Option 3: Installation of the single 100 MMBtu pilot OSG unit plus twenty-nine (29) 85 MMBtu OSGs with a 7 ppmv NO_x limit;
- Option 4: Installation of the single 100 MMBtu pilot OSG unit plus twenty-nine (29) 85 MMBtu OSGs with a 5 ppmv NO_x limit.

Construction Emissions

For the pilot OSG unit, Aera expects to begin construction shortly after receipt of all necessary approvals, including ATC permits from the District and grading/building permits from Kern County. For the main OSG program, construction is expected to



begin in early 2014 and should be completed late 2016. Construction emissions will be generated from both mobile and stationary sources. Offsite construction emissions will be generated from the transportation of construction material (heavy duty trucks) and construction worker trips. Onsite construction emissions will be generated by mobile and stationary source equipment used for the demolition of some existing equipment, site preparation, and installation of the OSGs.

As previously indicated, the site clearing, site preparation and infrastructure installation was previously addressed in the Mitigated Negative Declaration prepared for a previous project in which multiple OSGs were proposed to be located in the same project areas as the current project (*Initial Study and Final Mitigated Negative Declaration, Aera Energy Belridge Oilfield Complex Steam Generators Project, Project Numbers S-1084210, S-1084406 S8-1084433, S-1084434, May 2011*). Construction emissions are estimated using the California Emission Estimator Model (CalEEMOD), Version 2011.1. CalEEMOD construction stages appropriate to the OSG project are Grubbing, Grading, Drainage/Utilities/Subgrade, and Paving. For the pilot OSG unit Aera has included the paving construction emissions. The emissions estimates shown in Table 4 below represent the worst- case construction scenario which assumes construction of all OSGs occurs in 2014. Pilot OSG unit construction emissions are based on a 2013 installation but are added to the 2014 emissions for impact assessment purposes.

Table 4. Project Construction Emissions

Construction Emissions	Annual Emissions (tons/year)		
	NO _x	PM ₁₀	VOC
Pilot Unit	0.16	0.02	0.03
Setting 2829 or 2857	2.39	0.31	0.36
Setting 3467 or 3356	2.39	0.31	0.36
Setting 2-5 or 3-2	2.56	0.32	0.39
Maximum Emissions	7.5	0.96	1.14
Significance Thresholds	10	15	10
Exceed Thresholds?	No	No	No

As shown in Table 4 above, emissions from Project construction are not expected to exceed any of the significance thresholds established by the District and, therefore, mitigation measures are not required. As such, Project related construction emissions would have a less than significant impact on air quality.



Operational Emissions

Mobile Source Emissions: The Project will be maintained and manned by existing Aera personnel and contractors. Therefore, the Project will not result in any new mobile source emissions.

Stationary Source Emissions: The Project consists of the installation and operation of a single 100 MMBtu/hr pilot OSG unit and up to twenty-nine (29) new 85 MMBtu/hr OSGs or twenty-six (26) new 100 MMBtu/hr OSGs. The OSGs are capable of generating NO_x, SO_x, PM₁₀, PM_{2.5}, CO, and VOC emissions. The District has quantified Project stationary source emissions as part of the permit application process.

Project related criteria pollutant emissions exceeding the District's thresholds of significance, identified in Table 3, are required to be offset. The requirement for offsets is enforced through permit conditions requiring the surrendering of emission reduction credits (ERCs). Table 5 below presents the operational emissions at full build-out for each of the buildout options. The use of 85 MMBtu/hr OSGs will result in fewer ERCs being required for all pollutants because the total maximum fired duty associated with the 85 MMBtu/hr units is 2,465 MMBtu/hr, whereas the total maximum fired duty for the 100 MMBtu/hr units including the pilot OSG unit is 2,700 MMBtu/hr. If the 5 ppmv NO_x limit option is chosen, only the amount of required NO_x ERCs would be less for both the 100 MMBtu/hr units and the 85 MMBtu/hr units.

As indicated, the installation of the pilot and twenty-six (26) OSG (Option 1) represents the worst-case Project emissions and would increase operational NO_x emissions by an estimated 94.61, SO_x emissions by 24.84 tpy, PM₁₀ emissions by 59.13 tpy, PM_{2.5} emissions by 59.13 tpy, CO emissions by 218.78 tpy, and VOC emissions by 35.48 tpy.

Aera will be required to surrender ERCs to offset operational emissions. Table 6 below presents the offset requirements for each of the buildout options. For the worst-case buildout option (Option 1) Aera would be required to offset emissions by an estimated 141.91 tons of NO_x, 88.70 tons of PM₁₀, 88.70 tons of PM_{2.5}, and 53.42 tons of VOC. Aera currently has sufficient credits to fully offset the NO_x, SO_x, PM₁₀, and VOC emissions increases associated with the worst-case buildout option. Prior to the issuance of ATC permits for the main OSG program, Aera will be required to demonstrate sufficient credits to fully offset project related PM_{2.5} emissions increases associated with the worst-case buildout option.

Therefore, the District concludes that through a combination of project design features and permit conditions, project related operational emissions will have a less than significant impact on air quality.



Table 5. Project Stationary Source Operational Emissions – CEQA Significance

Buildout Option	Annual Emissions (tons/year)					
	NOx	SOx *	PM ₁₀	PM _{2.5}	CO ‡	VOC
Option 1	94.61	24.84	59.13	59.13	218.78	35.48
Option 2	72.98	24.84	59.13	59.13	218.78	35.48
Option 3	89.88	23.60	56.17	56.17	207.84	33.71
Option 4	69.36	23.60	56.17	56.17	207.84	33.71
Significance Thresholds	10	27	15	15	100	10
Exceed Thresholds?	Yes	No	Yes	Yes	Yes	Yes

* The facility exceeds offset and major source thresholds prior to project implementation; therefore, emissions must be fully offset.

‡ Pursuant to District Rule 2201, § 4.6.1 CO offsets are not required in attainment areas provided that federal AAQS are not violated in the areas to be affected.

Table 6. Project Stationary Source Offset Requirements

Buildout Option	Offsets Required (tons/year) *					
	NOx	SOx	PM ₁₀	PM _{2.5}	CO ‡	VOC
Option 1	141.91	35.88	88.70	88.7	0	53.42
Option 2	109.46	35.88	88.70	88.70	0	53.42
Option 3	134.82	34.02	84.26	84.26	0	50.56
Option 4	104.04	34.02	84.26	84.26	0	50.56

* Offset requirements were calculated at the ratios identified in District Rule 2201 (New and Modified Stationary Source Review)

‡ Pursuant to District Rule 2201, § 4.6.1 CO offsets are not required in attainment areas provided that federal AAQS are not violated in the areas to be affected. The District performed an AAQA which demonstrates that the Project will not violate the federal AAQS for CO (see Appendix C).



Air Quality Plans

As summarized in Table 4, Project related construction emissions are below the District's thresholds of significance. As summarized in Tables 5 and 6, operational stationary source emissions will be mitigated to below the District's thresholds through the surrender of ERCs. The ERCs must be surrendered to the District prior to the commencement of operation of the equipment proposed under the ATC. As such, the project does not conflict with the implementation strategy of the San Joaquin Valley Regional Air Quality Management Plans (*2008 PM 2.5 Plan; 2007 8-Hour Ozone Plan; 2007 PM₁₀ Maintenance Plan; 2006 PM₁₀ SIP; 2004 1-Hour Ozone SIP; 2003 PM₁₀ SIP*). Therefore, no further mitigation measures are required.

Air Quality Standards

Determination of whether project emissions would violate any applicable AAQS is largely a function of air quality dispersion modeling. If project emissions would not exceed state and federal AAQS at the Project's property boundaries, the Project would be considered to not violate any air quality standard or contribute substantially to an existing or projected air quality violation. The District performed an Ambient Air Quality Analysis (AAQA) for both the national and state AAQS for each buildout scenario, to determine whether project related criteria pollutant emissions have the potential to contribute to the possible violation of existing air quality standards. The AAQA indicates that Project related criteria pollutant emissions will not cause or contribute to an exceedance of either national or state AAQS. Therefore, the Project is not expected to cause or make worse a violation of an air quality standard.

Cumulative Impacts

By its very nature, air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development. Future attainment of state and federal AAQS is a function of successful implementation of the District's attainment plans. Consequently, the District's application of thresholds of significance for criteria pollutants is relevant to the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality. If a project's emissions is less than the thresholds of significance for criteria pollutants the project would not be expected to result in a cumulatively considerable net increase of any criteria pollutant for which the District is in non-attainment under the applicable federal or state AAQS. As discussed above, project emissions are mitigated to below the District's thresholds of significance for criteria pollutant emissions. Therefore, project related emissions would have a less than significant impact on air quality.

Mitigation: See below.

To ensure compliance with District NSR requirements for offsetting operational emissions Aera must surrender ERCs sufficient to completely offset operational



emissions as required by District NSR requirements. The following measure will be made a condition of project approval:

- **AIR-1:** Aera must surrender ERCs sufficient to completely offset operational emissions as required by District NSR requirements. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201.

To enforce this requirement permit conditions identifying the specific necessary offsets for each pollutant will be included in the ATC for each emissions unit prior to the start of operations. The emissions units associated with each buildout option are presented below:

- Pilot OSG: Units S-1547-1261 and S-1548-554
- Option 1: Units S-1547-1303 through -1328 and S-1548-595 through -620
- Option 2: Units S-1547-1277 through -1302 and S-1548-569 through -594
- Option 3: Units S-1547-1245 through -1259, -1263 through -1276, -1326 through -1328, and S-1548-539 through -553, -555 through -568
- Option 4: For Units S-1547-1216 through -1244 and S-1548-510 through -538

Health Risk Impacts (d)

Conclusion: The Project would not expose sensitive receptors to substantial pollutant concentrations.

Discussion: Under the Clean Air Act, toxic air contaminants (TACs) are airborne pollutants that may be expected to result in an increase in mortality or serious illness or which may pose a present or potential hazard to human health. Potential health impacts from TACs include long-term health effects such as cancer, birth defects, neurological damage, or genetic damage; or short-term effects such as eye watering, respiratory irritation, throat pain and headaches. TACs may also be referred to as hazardous air pollutants (HAPs). There are currently more than nine hundred (900) substances classified by the US EPA and California Air Resources Board (ARB) as TACs. Air Quality problems occur when sources of TACs and sensitive receptors are located in proximity to one another.

TACs can be separated into carcinogens and non-carcinogens based on the nature of the physiological degradation associated with exposure to the pollutant. For regulatory purposes, carcinogens are assumed to have no safe threshold below which health impacts would not occur. Cancer risk is expressed as excess cancer cases per one million exposed individuals.

Non-carcinogens differ in that there is generally assumed to be a safe level of exposure below which no negative health impact would occur. These levels are determined on a



pollutant-by-pollutant basis. Acute and chronic exposure to non-carcinogens is expressed by using a Hazard Index, which is the ratio of expected exposure levels to acceptable health-acceptable exposure levels.

The Air Toxics “Hot Spots” Information and Assessment Act (AB 2588, 1987, Connelly) was enacted in 1987, and requires stationary sources to report the type and quantities of certain substances routinely released into the air. The goals of AB 2588 are to collect emission data, to identify facilities having localized impacts, to ascertain risks to acceptable levels. AB 2588 requires air districts to establish the prioritization score threshold at which facilities are required to prepare a health risk assessment (HRA). In establishing priorities, an air district must consider potency, toxicity, quantity, and volume of hazardous materials released from the facility, the proximity of the facility to potential receptors, and any other factors that the district determines may indicate that the facility may pose a significant risk.

In implementing its responsibilities under AB 2588, the District Governing Board adopted notification procedures, including prioritization score thresholds, for notifying the public of significant carcinogenic and non-carcinogenic health risks. The District concludes that use of the existing prioritization score thresholds to establish thresholds of significance under CCR §15064.7 is an appropriate and effective means of promoting consistency in significance determinations within the environmental review process. The District’s thresholds of significance for determining whether project emissions would expose sensitive receptors to substantial pollutant concentrations are:

- Carcinogens: Probability of contracting cancer for the Maximally Exposed Individual (MEI) exceeds ten (10) in one million.
- Non-Carcinogens: Ground Level concentrations of non-carcinogenic TACs would result in a Hazard Index greater than one (1) for the MEI.

An HRA is not required for a project with a prioritization score of less than one (1).

Potentially hazardous materials are not expected to be associated with the steam generator sites. The District performed a HRA to determine possible health impacts from the Project’s permitted stationary source emissions on the nearest sensitive receptors. The HRA demonstrates that the Project’s acute and chronic hazard indices are both below one (1.0) and the cancer exposure risk for the facility is less than one (10.0) in a million. The District concludes that there is no substantial evidence of record to support a conclusion that the project would expose sensitive receptors to significant health risks.

Mitigation: None required.



Odor Impacts (e)

Conclusion: The Project would not create objectionable odor affecting a substantial number of people.

Discussion: While offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and the District. Any project with the potential to frequently expose members of the public to objectionable odors should be deemed to have a significant impact. Due to the subjective nature of odor impacts, the number of variables that can influence the potential for an odor impact, and the variety of odor sources, there is no quantitative or formulaic methodologies to determine if potential odors would have a significant impact. Rather, projects must be assessed on a case-by-case basis.

Diesel exhaust from construction activities may generate odors. However, construction emissions are temporary in nature and, due to the distance from the nearest sensitive receptor (greater than 1 mile) the project is not expected to affect a substantial number of people.

The District's *Guide for Assessing and Mitigating Air Quality Impacts* (GAMAQI) defines a significant odor impact as either more than one (1) confirmed complaint per year averaged over a three (3) year period or two (2) unconfirmed complaints per year averaged over a three (3) year period. A review of the District's compliance complaint database revealed that there has been only one (1) unconfirmed odor complaint received, in 2006, against Aera's operations in the Belridge Oil Field. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the project would create objectionable odors affecting a substantial number of people.

Mitigation: None required.

References

California Air Resources Board. *AB 2588 Air Toxics "Hot Spots" Program*. Website: <http://www.arb.ca.gov/ab2588/ab2588.htm>.

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Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

IV. Biological Resources Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			✓	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			✓	
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	



IV. Biological Resources (continued)		Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
Would the Project:					
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				✓
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

IV. BIOLOGICAL RESOURCES

Candidate, Sensitive and Special Status Species (a)

Conclusion: The Project, with incorporation of mitigation measures, will have a less than significant impact on candidate, sensitive, or special status species.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field, which historically has been allowed for the exploration and production of oil. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. Aera implements an Endangered Species Program (ESP) to avoid "take" of threatened and endangered species on Aera property, or due to activities undertaken by Aera. According to the Federal Endangered Species Act (ESA) the term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct of endangered species. "Take" includes the modification or degradation of habitat that could result in death or injury to listed species through the interference of behavioral patterns of those species. According to the California ESA the term "take" means to hunt, pursue, catch, capture, or kill or the attempt to hunt, pursue, catch, capture, or kill endangered species.

Aera implements a biological species training program for employees as part of the ESP. The ESP applies to all Aera employees or contractors involved in activities in which there may be contact with endangered species. The program includes avoidance and minimization measures for daily operations, as well as precautionary measures for species identification prior to construction activities. Aera makes available to employees a handbook detailing the endangered plants and animals within Aera's property, and provides information on endangered species in their internal Emergency Action Plan document. The ESP requires a preconstruction survey, to be performed by a trained employee, to determine the presence of endangered species. If Aera's Environmental Health and Safety (EHS) Field Advisor determines further investigation is necessary, Aera will comply with all USFWS and CDFG recommendations for assessment, analysis, and protection of biological resources.



With the implementation of the ESP, it is reasonable to conclude the Project would not result in direct impacts to threatened or endangered species. In addition to implementation of the ESP, Aera has incorporated mitigations measures to ensure that potential impacts on biological resources are fully mitigated to a level of insignificance.

Mitigation: See below.

To ensure the installation and operation of the steam generators would not have a significant impact on candidate, sensitive, and special status species and to ensure compliance with existing USFWS standard recommendation for protection of special status species, the following measures will be made conditions of project approval:

- **BIO-1** – *A Qualified Biologist will conduct a focused pre-construction survey to determine the presence/absence of potential impacts on sensitive species prior to the onset of ground disturbance. The survey shall be conducted in accordance with the standard protocol of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). If more than 30 days pass before the onset of ground disturbance, an additional survey shall be conducted by a Qualified Biologist within 30 days prior to the onset of ground disturbance. Permittee shall make all biological surveys available to District staff upon request. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-2** – *During construction activities, standardized avoidance measures shall be implemented to preclude take of special status species. If standardized avoidance measures cannot be achieved Permittee will consult with the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) to develop alternative compliance measures and/or obtain an Incidental Take Permit. If standardized avoidance measures fail and there is a take of a threatened or endangered species Permittee will notify USFWS, CDFW, and District immediately. Permittee shall make available to the District any documentation required by USFWS and CDFW. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-3** – *Impacts to endangered species habitat, as identified in preconstruction surveys, will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-4** – *A biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. [Public Resources Code 21000-21177: California Environmental Quality Act]*



- **BIO-5** – *Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways. In the event that construction activities should occur during night time, a 10-mph speed limit shall be observed from dusk until dawn. Off-road traffic outside of designated project areas should be prohibited. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-6** – *During construction activities, all excavated, steep-walled holes or trenches more than two (2) feet deep shall be covered at the close of each working day by plywood or similar materials. If the holes or trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) shall be contacted as noted in Measure BIO-15. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-7** – *All construction pipes, culverts, or similar structures with a diameter of four (4) inches or greater that are stored at a construction site for one (1) or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service (USFWS) has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-8** – *All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction sites. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-9** – *No firearms shall be allowed on the project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-10** – *No pets, such as dogs or cats, shall be permitted on the project sites. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-11** – *Use of rodenticides and herbicides in the project sites shall be restricted. If use of these compounds is deemed necessary, Permittee shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency (US EPA), California Department of Food and Agriculture (CDFA), and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service*



(USFWS). If rodent control must be conducted, zinc phosphide shall be used. [Public Resources Code 21000-21177: California Environmental Quality Act]

- **BIO-12** – *Permittee shall appoint a representative to be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the U.S. Fish and Wildlife Service (USFWS). [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-13** – *An employee education program shall be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-14** – *Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and revegetation experts. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-15** – *In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **BIO-16** – *Any contractor, employee, or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative identified in Measure BIO-10 above. This representative shall contact the California Department of Fish and Wildlife*



(CDFW) and the U.S. Fish and Wildlife Service (USFWS) immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or, Mr. Paul Hoffman, Wildlife Biologist. Contact information for CDFW and USFWS is provided below in Measure BIO-17: [Public Resources Code 21000-21177: California Environmental Quality Act]

- **BIO-17** – *The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife (CDFW) shall be notified in writing within three (3) working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. Contact information is provided below. [Public Resources Code 21000-21177: California Environmental Quality Act]*

*CDFW: Ms. Reagen O’Leary, Environmental Scientist
1234 E. Shaw Avenue
Fresno, CA 93710
Phone: (559) 243-4014*

*CDFW: Mr. Paul Hoffman, Wildlife Biologist
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
(530) 934-9309*

*USFWS: Chief of the Division of Endangered Species
2800 Cottage Way, Suite W2605
Sacramento, CA 95825-1846
(916) 414-6620 or (916) 414-6600.*

- **BIO-18** – *New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the U.S. Fish and Wildlife Service (USFWS) at the following address: Endangered Species Division, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846. [Public Resources Code 21000-21177: California Environmental Quality Act]*

Riparian Habitats, Sensitive Natural Communities and Wetlands (b, c)

Conclusion: The Project will have a less than significant impact on riparian habitats, sensitive natural communities or federally protected wetlands.

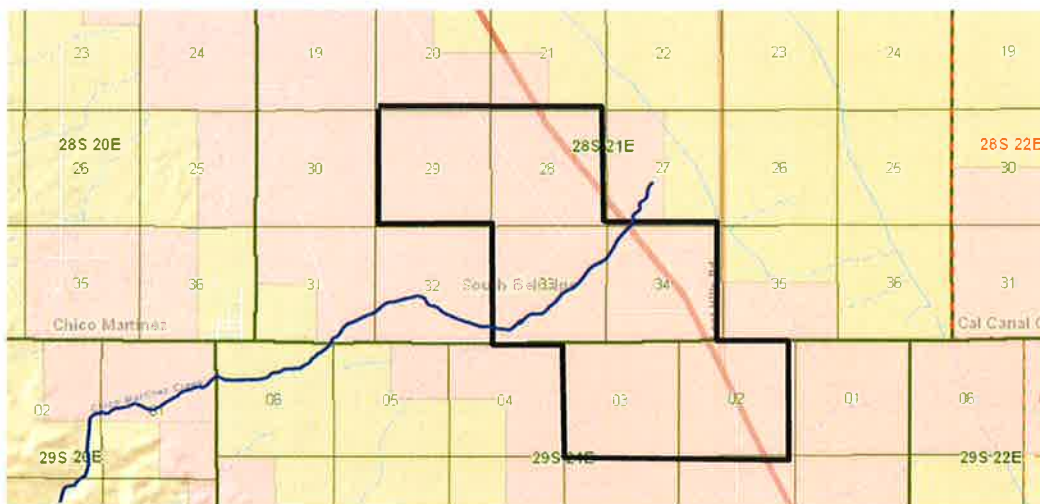
Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities



consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites.

The majority of the project sites are not part of any riparian habitat or other sensitive natural community as identified by the USFWS or CDFW. However, Chico Martinez Creek runs through the northwestern portion of the Generator Setting 3356 project site. Chico Martinez Creek is a dry bed, except during and immediately following rainstorms. Chico Martinez Creek may be a Waters of the United States (subject to Section 404 of the Clean Water Act), and is considered a Waters of the State (subject to California State Water Code). However, construction for the Project, for this area will not occur outside of the fenced boundary of Generator Setting 3356, thereby allowing that there is no substantial evidence to support a conclusion that the Project would have an impact on riparian habitats, sensitive natural communities or wetlands.

Figure 7. Chico Martinez Creek



Mitigation: None required.

Migratory Corridors (d)

Conclusion: The Project is expected to have a less than significant impact on the movement of migratory wildlife.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The immediately surrounding areas containing the existing OSGs, which are located near major impediments, including



State Highway 33 located to the east and Seventh Standard Road which bisects the project site, have been shown to have little effect on the migratory patterns of wildlife. Furthermore, the Reconnaissance-Level Biological Surveys prepared for the pilot OSG site and the six (6) sites for the twenty-six (26) 100 MMBtu OSG or twenty-nine (29) 85 MMBtu OSG demonstrate that there is no substantial wildlife migration through the project sites (see Appendix F). Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the project would have a significant impact on the migratory corridors and the movement of threatened and endangered species.

Mitigation: None required.

Policies, Ordinances and Conservation Plans (e-f)

Conclusion: The project will not conflict with local policies or ordinances protecting biological resources or any provision of adopted federal, state, regional, or local conservation plans.

Discussion: Kern County has prepared two (2) conservation plans designed to protect biological resources within the County. Collectively, the adopted Metropolitan Bakersfield Habitat Conservation Plan (MBHCP) and the Draft Valley Floor Habitat Conservation Plan (VFHCP) address impacts on biological resources throughout the majority of Kern County.

The MBHCP addresses impacts on biological species resulting from urban development of incorporated and unincorporated areas of the Bakersfield Metropolitan General Plan Area. The Project is not located on property within the MBHCP Plan.

The Draft VFHCP identifies three (3) zones representing the importance of conservation in that area. Red zones represent habitat areas with high importance for conservation of the VFHCP covered species. Green zones are habitat areas of moderate importance. White zones are habitat areas of limited importance due to intensive land uses, such as cultivated agriculture. As the VFHCP has not yet been adopted, projects within the VFHCP are not required to pay mitigation fees and must comply with all requirements deemed necessary by CDFW and USFWS. The proposed project sites are located in a "Productive Oil Area" that is designated as having "White Zone" habitat quality in the HCP. These characteristics identify Aera's operations as occurring in a densely developed oil field with limited sensitive species habitat quality. Although the VFHCP has not currently been adopted, the project does not propose actions or plans which would conflict with those considered in the Draft VFHCP.

The project is not located within the boundaries of a Natural Community Conservation Plans (NCCP) or any other USFWS designated critical habitat. Through compliance with Aera's environmental policies and practices, no take of endangered species are expected to occur during project implementation due to the practice of avoidance



measures. Well and facility impacts to endangered species habitat (as identified in pre-activity surveys) associated with the installation of the generators will be mitigated at the Coles Levee Ecological Preserve at a ratio of 1.1:1. Aera acquired the Coles Levee Ecological Preserve in 1998. Since that time Aera has utilized approximately 100 acres of the preserve to mitigate endangered species impacts on its Fee and Bureau of Land Management (BLM) properties, leaving approximately 760 acres of mitigation credits in its bank.

The District concludes that there is no substantial evidence of record to support a conclusion that the construction and operation of the Project would conflict with local policies or ordinances, or any provision of adopted federal, state, regional, or local conservation plans protecting biological resources.

Mitigation: See Mitigation Measures BIO-1 through BIO-18.

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

V. CULTURAL RESOURCES

Historical Resources (a)

Conclusion: The Project will have no impact on historical resources.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. Through a review of California and federal historical resource databases, no known historical resources have been identified. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have an impact on historical resources.

Mitigation: None needed.

Archaeological and Paleontological Resources and Human Remains (b, c, d)

Conclusion: The Project will have a less than significant impact on archaeological and paleontological resources and human remains.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. Archaeological resources, paleontological resources, or human remains are not known to occur on the property. However, construction of the Project will require ground-disturbing activities such as excavation, trenching, and grading. As such, there is a potential that such resources and remains may be discovered during the course of construction. In the event of such a discovery,



standard protocol is to cease all work within 100 feet of any discovery and immediately report the discovery to the appropriate agency. Mitigation measures detailing what steps to take by Aera in the event of such discoveries have been incorporated into the Project. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact on archaeological or paleontological resources.

Mitigation: See below.

Although the Project is expected to have a less than significant impact on archaeological, paleontological and other cultural resources, the following measures will be made conditions of approval to ensure that potential impacts remain less than significant:

- **CUL-1** – *In the event that archaeological/paleontological resources are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and the Permittee shall notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. A qualified archaeologist/paleontologist shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Kern County and the Native American Heritage Commission (NAHC). In addition, should archaeological/paleontological resources be discovered, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **CUL-2** – *In the event that human remains are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and the discovery shall immediately be reported to the County Coroner (CC) and Native American Heritage Commission (NAHC) for further assessment. Permittee shall identify appropriate measures for treatment or disposition of the remains in consultation with the CC and NAHC. In addition, should human remains be discovered during ground-disturbing activities, Permittee shall provide the District a written report in relation to the nature of the find. [Public Resources Code 21000-21177: California Environmental Quality Act]*

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VI. Geology / Soils Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: <ul style="list-style-type: none"> i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. 				✓
ii) Strong seismic ground shaking?			✓	
iii) Seismic-related ground failure, including liquefaction?				✓
iv) Landslides?				✓
b) Result in substantial soil erosion or the loss of topsoil?				✓



VI. Geology / Soils (continued)	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
<p>Would the Project:</p> <p>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?</p>			✓	
<p>d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?</p>				✓
<p>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?</p>				✓

VI. GEOLOGY/SOILS

Seismic Activity and Geological Stability (a, c, d)

Conclusion: Potential risks of loss, injury, or death resulting from strong seismic activity, unstable or expansive soils, and ground failure are less than significant.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project is not located within an Alquist-Priolo Earthquake Fault Zone, as published by the California Department of Conservation, and is located more than five (5) miles from the nearest known active fault trace. According to the Kern County General Plan Safety Element, Figure 13, the nearest earthquake fault to the Project is the San Andreas Fault, which is located more than ten (10) miles away from the nearest Project boundary.

According to the Kern County General Plan, Safety Element, Kern County is susceptible to moderate-to-extreme ground shaking, as well as small landslides in mountainous areas of the county. The Project is located on flat terrain away from any mountains and is not expected to experience any landslides; nor is it located within a liquefaction hazard area.



The Project is located on land zoned for oil production activities and will be used for such. Per the Kern County General Plan Safety Element, subsidence caused by the extraction of oil and gas is deemed too small to be of serious concern and subject to the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources.

The Project site is consistent with current land use and is designed in accordance with all building code requirements including those pertaining to excavations, grading, and foundations. Adherence to California Buildings Standards Code (CBSC) requirements and compliance with California seismic design requirements would ensure that the Project would not expose persons or property to substantial risk of loss, injury, or death resulting from seismic activity.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would result in significant risks to life and property as a result of impacts to geologic and soil resources.

Mitigation: None required.

Soil Erosion (b)

Conclusion: The Project will not result in substantial soil erosion or the loss of topsoil, and impacts are less than significant.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The construction of the OSGs would involve ground-disturbing activities, including pad preparation and installation of piping and electrical systems, which could potentially create erosion. Construction of the OSGs is consistent with the current land use and oil field operations and will occur in areas that have been previously disturbed by similar activities. The OSGs will be built on soil with ratings of low susceptibility to erosion. Potential impacts to soil erosion will be reduced through compliance with Kern County Planning and Building Department requirements. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would result in substantial soil erosion or loss of topsoil.

Mitigation: None required.

Soil Capacity for Wastewater (e)

Conclusion: The Project will have no impact on the ability of soils to support wastewater disposal systems.



Discussion: The Project includes the construction and operation of a single 100 MMBtu/hr pilot OSG unit and up to twenty-nine (29) 85 MMBtu/hr OSGs or twenty-six (26) 100 MMBtu/hr OSGs . An auxiliary "touchdown" facility will also be located at the project site. The touchdown facility consists of a small control room and a restroom. The restrooms will require the installation of new septic systems. The septic systems will be constructed in accordance with CBSC requirements and Kern County building codes. Therefore, the Project will not impact the soil or its capacity to support wastewater disposal.

Mitigation: No mitigation is required.

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VII. Greenhouse Gas Emissions Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			✓	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			✓	

VII. GREENHOUSE GAS EMISSIONS

Greenhouse Gas Emissions (a, b)

Conclusion: Greenhouse gas (GHG) emissions from both construction and operation of the Project will have a less than significant impact on global climate change and will not conflict with any applicable plans or policies to reduce GHG emissions.

Discussion: GHGs are gases that absorb and emit radiation within the thermal infrared range, trapping heat in the earth’s atmosphere. There are no “attainment” concentration standards established by the Federal or State government for GHGs. In fact, GHGs are not generally thought of as traditional air pollutants because GHGs, and their impacts, are global in nature, while traditional “criteria” air pollutants affect the health of people and other living things at ground level, in the general region of their release to the atmosphere. Some GHGs occur naturally and are emitted into the atmosphere through natural processes. Other GHGs are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated carbons. Additional information on GHG and global climate change can be found in the District staff report titled: *Addressing Greenhouse Gas Emissions Impacts Under the California Environmental Quality Act*.

Assembly Bill 32 (AB 32)

Assembly Bill 32 (California Global Warming Solutions Act of 2006) is a key piece of California’s effort to reduce its GHG emissions. AB 32 was adopted establishing a cap on statewide greenhouse gas emissions and sets forth the regulatory framework to achieve the corresponding reduction in statewide emissions levels. AB 32 requires the ARB to establish regulations designed to reduce California’s GHG emissions to 1990 levels by 2020. In executing its legislative mandate under AB 32, the ARB developed a Scoping Plan that contains the main strategies California will use to reduce GHG from Business-as-Usual (BAU) emissions projected from 2020 levels back down to 1990 levels. BAU is the projected emissions caused by growth, without any GHG reduction



measures. ARB determined that a 29% reduction from BAU is necessary to achieve the 1990 GHG emissions level. On December 11, 2008, ARB adopted its AB 32 Scoping Plan, setting forth a framework for future regulatory action on how California will achieve the goal of reducing GHG emissions to 1990 levels.

Cap & Trade

The AB 32 Scoping Plan identifies a Cap and Trade program as one of the strategies California will employ to reduce the GHG emissions that cause climate change. The Cap and Trade program is implemented by the ARB and caps GHG emissions from the industrial, utility, and transportation fuels sectors – which account for roughly 85% of the state's GHG emissions.

The program works by establishing a hard cap on about 85% of total statewide GHG emissions. The cap starts at expected BAU emissions levels in 2012, and declines 2-3% per year through 2020. Fewer and fewer GHG emissions allowances are available each year, requiring covered sources to reduce their emissions or pay increasingly higher prices for those allowances. The cap level is set in 2020 to ensure California complies with AB 32's emission reduction target of returning to 1990 GHG emission levels.

The scope of GHG emission sources subject to Cap and Trade in the first compliance period (2013-2014), includes:

- All electricity generated and imported into California. The first deliverer of electricity into the state is the capped entity (the one that will have to purchase and surrender allowances).
- Large industrial facilities emitting more than 25,000 metric tons of GHG pollution/year. Examples include oil refineries and cement manufacturers.

The scope of GHG emission sources subject to Cap and Trade during the second compliance period (2015-2017), expands to include distributors of transportation fuels (including gasoline and diesel), natural gas, and other fuels. The regulated entity will be the fuel provider that distributes the fuel upstream (not the gas station). In total, the Cap and Trade program is expected to include roughly 350 large businesses, representing about 600 facilities. Individuals and small businesses will not be regulated.

Under the program, companies do not have individual or facility-specific reduction requirements. Rather, all companies covered by the regulation are required to turn in allowances in an amount equal to their total greenhouse gas emissions during each phase of the program. The program gives companies the flexibility to either trade allowances with others or take steps to cost-effectively reduce emissions at their own facilities. Companies that emit more will have to turn in more allowances. Companies that can cut their emissions will have to turn in fewer allowances. Furthermore, as the cap declines, total emissions are reduced.



On October 20, 2011, ARB's Board adopted the final Cap and Trade regulation and Resolution 11-32. As part of finalizing the regulation, the Board considered the related environmental analysis and, consistent with CEQA requirements, approved ARB's functionally equivalent document (FED).

CEQA Requirements

In December, 2009, the California Natural Resources Agency (NRA) amended the CEQA Guidelines to include Global Climate Change, which is now generally accepted by the scientific community to be occurring and caused by GHG emissions. The amendments address analysis and mitigation of the potential effects of GHG emissions in CEQA documents. In their *Final Statement of Reasons for Regulatory Action*, NRA recognizes that the analysis of GHG emissions in a CEQA document presents unique challenges to lead agencies. NRA amended section 15064(h)(3) of the CEQA guidelines to add compliance with plans or regulations for the reduction of GHG emissions to the list of plans and programs that may be considered in a cumulative impacts analysis. In their *Final Statement of Reasons for Regulatory Action*, NRA discusses that AB 32 requires ARB to adopt regulations that achieve the maximum technologically feasible and cost effective GHG reductions to reach the adopted state-wide emissions limit. NRA goes on to state that a lead agency may consider whether ARB's GHG reduction regulations satisfy the criteria in existing subdivision (h)(3).

District CEQA Policy

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. On December 17, 2009, the District adopted the policy "*District Policy (APR 2005) – Addressing GHG Emissions Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency*" and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. The policy applies to all District permitting projects that have an increase in GHG emissions, regardless of the magnitude of the increase. Under this policy, the District's determination of significance of project-specific GHG emissions is founded on the principal that projects with GHG emission reductions consistent with AB 32 emission reduction targets are considered to have a less than significant impact on global climate change.

As illustrated in Figure 7, the District's board-adopted policy for determining significance of project-specific GHG emissions employs a tiered approach. Of specific relevance to Cap and Trade is the provision that: "Projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located, would be determined to have a less than significant individual and cumulative impact for



GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency. Projects complying with an approved GHG emission reduction plan or GHG mitigation program would not be required to implement [best performance standards] BPS.” Projects that do not comply with such a plan or program must incorporate BPS or undergo a project-specific analysis demonstrating that GHG emissions would be reduced by at least 29%, as compared to BAU.

Determination of Significance of GHG Emissions for Projects Subject to an Approved GHG Emissions Reduction Plan

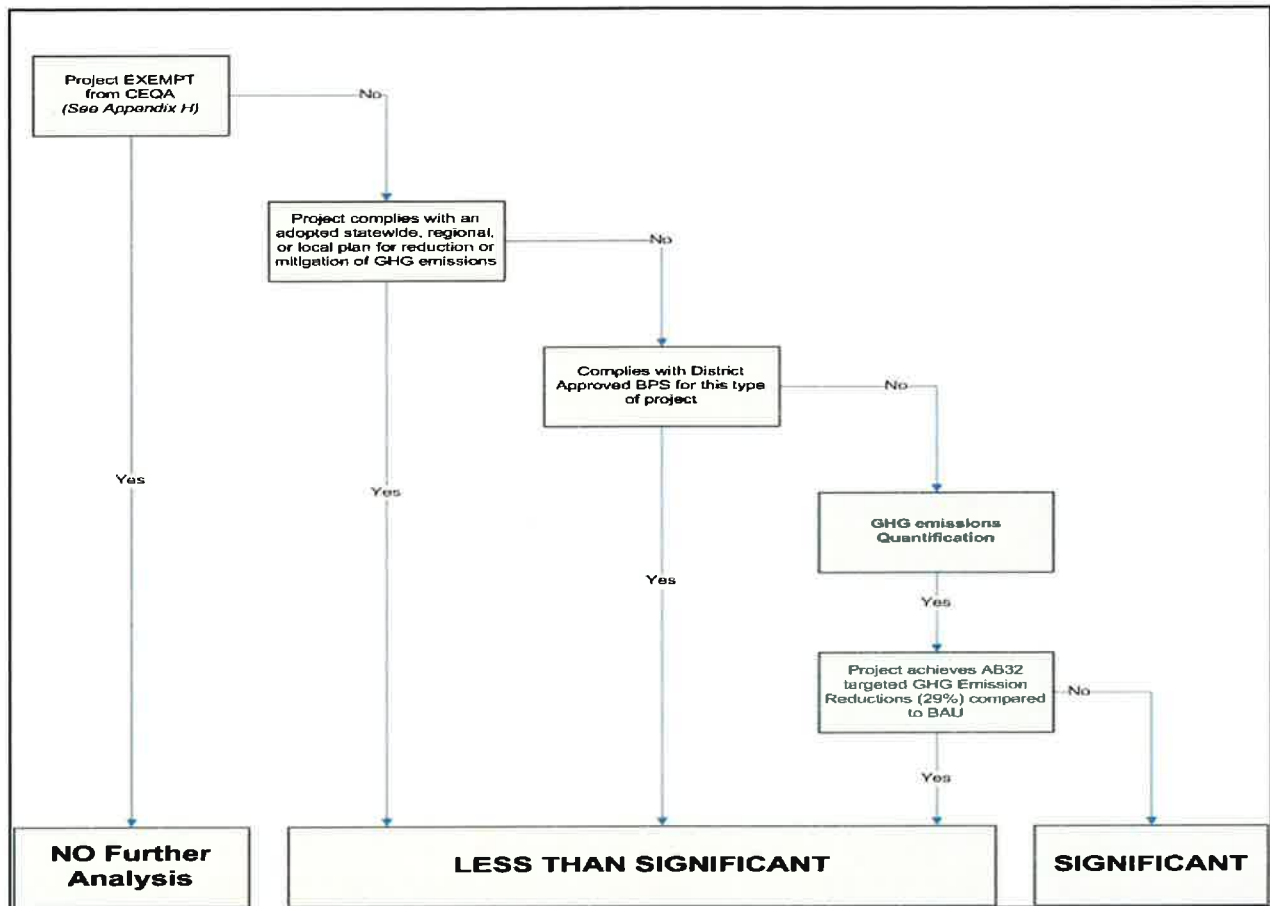
The NRA amended the CEQA Guidelines to include Global Climate Change and added compliance with plans or regulations to reduce GHG emissions to the list of plans and programs that should be considered in a cumulative impacts analysis. In their *Final Statement of Reasons for Regulatory Action*, NRA discusses that AB32 requires the ARB to adopt regulations that achieve the maximum technologically feasible and cost effective GHG reductions to reach the adopted state-wide emissions limit. NRA goes on to state that a lead agency may consider whether ARB’s GHG reduction regulations satisfy the criteria in section 15064(h)(3).

The District’s board-adopted policy determines that: “Projects complying with an approved GHG emission reduction plan or GHG mitigation program, which avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less than significant individual and cumulative impact for GHG emissions. Such plans or programs must be specified in law or approved by the lead agency with jurisdiction over the affected resource and supported by a CEQA compliant environmental review document adopted by the lead agency.”

AB32, and the AB32 scoping plan adopted by ARB, is a GHG reduction plan for CEQA purposes. It is directly and wholly responsible for meeting the GHG reduction targets of the State of California and is supported by an environmental review process that has been successfully defended in court as equivalent to, and compliant with, CEQA requirements. However, there are some sources of GHG emissions that are discussed in the AB32 scoping plan that are not required to mitigate emissions via implementation of the plan, and some of the plan is devoted to implementing regulations that address existing emissions, and will have only minimal impact on increases in emissions. Since it is these increases that must be addressed under CEQA, the District conducts its own analysis to determine whether compliance with AB32 and its scoping plan are adequate to conclude that a particular GHG emissions increase is less than significant.



Figure 7: Determination of Significance for Stationary Source Projects



Determination of Significance of GHG Emissions for Projects Subject to ARB’s GHG Cap and Trade Regulation

One regulation proposed in the AB32 scoping plan that does address increases in GHG emissions is the Cap and Trade regulation discussed above. Facilities subject to the Cap and Trade regulation are subject to an industry-wide cap on overall GHG emissions, and any growth in emissions must be accounted for under that cap, so that a corresponding and equivalent reduction in emissions must occur to allow any increase. Further, the cap decreases over time, resulting in an overall decrease in GHG emissions. It is therefore reasonable to conclude that facilities subject to and in compliance with ARB’s Cap and Trade requirements will not, and in fact, cannot, contribute significantly towards any global GHG emissions growth. While this inherent mitigation process is not a necessary component of a finding that compliance with a plan for the reduction of greenhouse gas emissions may be considered in a cumulative impacts analysis [(CCR §15064(h)(3)], the fact that all growth in emissions at covered



sources is mitigated provides a certainty that compliance with the Cap and Trade program eliminates any potential for significant impacts from those GHG emissions.

Determination of Significance of GHG Emissions for Projects Implementing BPS

BPS for stationary source projects is – for a specific class and category source of GHG emissions – the most effective, District approved, achieved-in-practice means of reducing or limiting GHG emissions from that source, which is also economically feasible per the definition of achieved-in-practice. BPS includes equipment type, equipment design, and operational and maintenance practices for the identified service, operation, or emissions unit class and category, and is developed by the District in a public process that considers and addresses input from all interested parties. Consistent with the District’s adopted policy for assessing significance of project-specific GHG emission increases when serving as Lead Agency, projects implementing BPS will be determined to have a less than significant impact on global climate change.

Project Details and Significance Determination

Compliance with an Approved GHG Emission Reduction Plan

As an independent energy company engaged in the production, development, and exploration of crude oil and natural gas within the State of California, Aera and its facilities are subject to ARB’s Cap and Trade regulation. As discussed above, ARB’s Cap and Trade regulation is an adopted statewide plan for reducing or mitigating GHG emissions from targeted industries and is supported by an environmental review process that has been successfully defended in court as equivalent to, and compliant with, CEQA requirements.

Consistent with CCR §15064(h)(3), the District finds that compliance with ARB’s Cap and Trade regulation would avoid or substantially lessen the impact of project-specific GHG emissions on global climate change. The District therefore concludes that the project would have a less than significant individual and cumulative impact on global climate change.

Mitigation of GHG Increases under the Cap and Trade Regulation

As outlined above, facilities subject to the Cap and Trade regulation are subject to an industry-wide cap on overall GHG emissions. As such, any growth in emissions must be accounted for under that cap, such that a corresponding and equivalent reduction in emissions must occur to allow any increase. Therefore, it is reasonable to conclude that implementation of the Cap and Trade program would fully mitigate project-specific GHG emissions.

Regardless of, and independent to, the above determination that the project is subject to a state-wide GHG emissions reduction plan, the District finds that, through



compliance with the Cap and Trade regulation, project-specific GHG emissions would be fully mitigated. Thus, the District concludes that the project would have a less than significant individual and cumulative impact on global climate change.

Implementation of BPS

AERA has voluntarily proposed to implement BPS for each class and category of greenhouse gas emissions unit involved in the project (see the District's EE, incorporated herein by reference).

Therefore, consistent with the District's adopted policy for assessing significance of project-specific GHG emission increases when serving as Lead Agency, the District concludes that the project has a less than significant individual and cumulative impact on global climate change due to its implementation of BPS.

Mitigation: To ensure compliance with District BPS for steam generators, the following measure will be made a condition of project approval:

For all OSG Units:

- **GHG-1** – *Steam generator shall be equipped with variable frequency drive electrical motors driving the blower and water pump and a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%. [Public Resources Code 21000-21177: California Environmental Quality Act]*

References

San Joaquin Valley Unified Air Pollution Control District. December 2009. *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (APR 2005). December 17, 2009. Website: http://www.valleyair.org/policies_per/policies/apr2005.pdf

San Joaquin Valley Unified Air Pollution Control District. December 2013. *Draft Authority to Construct: Application Review*, Applicant Numbers S-1547 and S-1548, Project Numbers S-1113576 and S-1113577. Available at San Joaquin Valley Air Pollution Control District. 34946 Flyover Court, Bakersfield, CA 93308-9725.

San Joaquin Valley Unified Air Pollution Control District. December 2013. *Draft Authority to Construct: Application Review*, Applicant Numbers S-1547 and S-1548, Project Numbers S-1121401 and S-1121402. Available at San Joaquin Valley Air Pollution Control District. 34946 Flyover Court, Bakersfield, CA 93308-9725.



San Joaquin Valley Unified Air Pollution Control District. *Best Performance Standards (BPS) for Stationary Sources*. June 24, 2010. Website:
http://www.valleyair.org/Programs/CCAP/bps/BPS_idx.htm

San Joaquin Valley Unified Air Pollution Control District. December 2009. *Final Draft Staff Report: Addressing Greenhouse Gas Emissions Impacts Under The California Environmental Quality Act*. Website:
http://www.valleyair.org/Programs/CCAP/CCAP_idx.htm

San Joaquin Valley Unified Air Pollution Control District. March 2010. *Zero Equivalency Policy for Addressing Greenhouse Gases (APR-2015)*. Website:
http://www.valleyair.org/policies_per/policies/apr2015.pdf

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

VIII. Hazards and Hazardous Materials Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			✓	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			✓	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				✓
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				✓
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				✓



VIII. Hazards and Hazardous Materials (continued) Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?			✓	
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				✓
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			✓	

VIII. HAZARDS & HAZARDOUS MATERIALS

Hazardous Materials and Exposure to the Public (a-d)

Conclusion: The Project will not expose the public to hazardous materials, and impacts are less than significant.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The areas immediately surrounding the Project are currently zoned for agricultural uses, which includes general agricultural operations and oil field production. The Project is not located on a site that meets the definition of Government Code Section 65962.5, which requires specific hazardous waste facilities to submit required information to the Department of Toxic Substances Control (DTSC).

The closest sensitive receptor is the Belridge Elementary School, located approximately 2,000 feet west of the Belridge Oil Field and more than 8,000 feet west from the project sites. Potentially hazardous materials are not expected to be associated with the steam generator sites at this time.

Development of the project consistent with DOGGR's Well Review Program will further minimize potential hazards to the public, Aera's employees and contractors, and the environment. DOGGR's Well Review Program is available to developers to assist them in identifying potentially dangerous impacts resulting from construction operations near existing and abandoned oil and natural gas wells, and the measures necessary to reduce those impacts. Aera is familiar with this program and will implement the



elements pertinent to this project. Aera has evaluated the Project areas for abandoned and active well conflicts consistent with DOGGR's Well Review Program. Prior to construction, Aera's Investment Recovery Team will evaluate the abandonment records of the wells identified and obtain the appropriate permits as needed for abandonment, re-abandonment or modifications to the wells. Mitigation measures, consistent with DOGGR's recommendations in the Well Review Program, have been incorporated, into the project to ensure the development would have no impacts resulting from abandoned wells.

Compliance with existing safety standards in the construction and long-term operation of the OSGs will minimize any potential hazard to the public, Aera's employees and contractors, and the environment. Occupational safety standards exist in Federal and State laws to minimize worker safety risks from both physical and chemical hazards in the workplace. The California Department of Industrial Relations Division of Occupational Safety and Health (Cal/OSHA) is responsible for developing and enforcing safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle, if need be.

Therefore, impacts resulting from the accidental release of hazardous materials are expected to be less than significant. There is no substantial evidence of record to support a conclusion that the transportation, use, or disposal of hazardous materials would pose a hazard to the public.

Mitigation: See below.

To ensure compliance with DOGGR's Well Review Program, the following measures will be made conditions of project approval:

- **HAZ-1** – *Prior to ground disturbance activities, Permittee shall provide the District documentation identifying all wells in the vicinity of the project site have been submitted to the Division of Oil, Gas, and Geothermal Resources (DOGGR) for compliance with DOGGR's "Well Review Program". [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **HAZ-2** – *Permittee shall retain written records on-site and notify DOGGR in the event unknown, unrecorded, abandoned, or damaged wells are discovered. [Public Resources Code 21000-21177: California Environmental Quality Act]*
- **HAZ-3** – *Any wells discovered or exposed during construction activities will be tested for flammable vapors. Permittee shall retain these records onsite and the records shall be made available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]*



To ensure compliance with DTSC requirements the following condition will be made a condition of project approval:

- **HAZ-4** – *Permittee shall retain written records on-site demonstrating compliance with all applicable Department of Toxic Substances Control (DTSC) regulations, including biennial hazardous waste reports for the use, discharge, and transport of potentially hazardous materials if necessary.*

Airports and Airstrips (e, f)

Conclusion: The Project is not located near active airports or airstrips; therefore, the Project will not have an impact on the safety of people residing or working in the Project area.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project area is not located within two (2) miles of a public airport. The Project area includes the Belridge Strip, a private inactive airport strip that has been closed per the Federal Aviation Administration (FAA) regulations, and is only used under extreme situations for emergency evacuations. Lost Hills-Kern County Airport, the nearest public airport to the Project area, is located approximately eleven (11) miles north of the proposed project site. The proposed project sites are not located within the airport land-use plans of Lost Hills-Kern County Airport. Although there may be a minimal increase in risk of a safety hazard associated with usage of the private airstrip for emergency evacuations, usage of the strip will only occur under extreme situations. Also, the positive benefits of decreased transportation time as a result of proximity of the airstrip for emergency evacuations offset any potential increase in risk. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the location of the Project would pose a risk to people residing or working in or near the project area.

Mitigation: None required.

Emergency Response and Fire Hazards (g, h)

Conclusion: The Project will not interfere with emergency response or evacuation plans; nor will it expose people or structures to risks from wildland fires.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project will not demolish any existing



public roadways and would not interfere with the emergency response or evacuation plans.

The Safety Element of the Kern County General Plan, Chapter 4, outlines the requirement for a Kern County Emergency Plan. The Kern County Environmental Health Services Division published a Hazardous Materials Area Plan in October 2011. According to the Kern County General Plan, the project area is located in "Moderate Fire Hazard" zone. According to the California Department of Forestry and Fire Protection (Cal FIRE), the project area is located in a "Moderate" fire hazard severity zone in State Responsibility Area (SRA), or in an "Other Moderate" fire hazard severity zone in Local Responsibility Area (LRA). Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would interfere with emergency response or expose people or structures to risks from fires.

Mitigation: None required.

References

California Department of Forestry and Fire Protection. *Fire Hazard Severity Zones Map*. Website: http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php

California Department of Forestry and Fire Protection. *Cooperative Efforts*. Website: http://www.fire.ca.gov/fire_protection/fire_protection_coop_efforts_contractcounties.php

California Department of Toxic Substances Control. *DTSC's Hazardous Waste and Substances Site List - Site Cleanup (Cortese List)*. Website: http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm

California Department of Toxic Substances Control. *Envirostor Database*. Website: <http://www.envirostor.dtsc.ca.gov/public/>

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Kern County Fire Department. *Fire Stations*. Website: <http://www.kerncountyfire.org/>

Google Maps. December 2011 and November 2013.

Kern County Environmental Health Services Division. Kern County Operational Area. Hazardous Materials Area Plan. October 2011.

County of Kern. *2009 General Plan*. Website: <http://pcd.kerndsa.com/planning/planning-documents/general-plans>

Kern County General Plan. Chapter 4. Safety Element.



Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

IX. Hydrology / Water Quality Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?				✓
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				✓
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?				✓
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				✓
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?				✓
f) Otherwise substantially degrade water quality?				✓
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				✓
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				✓
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?			✓	
j) Inundation by seiche, tsunami, or mudflow				✓



IX. HYDROLOGY / WATER QUALITY

Water Quality, Waste Discharge, and Groundwater Supplies (a, b, e, f)

Conclusion: The Project will not violate any water quality standards or waste discharge requirements. The Project will not substantially deplete or degrade groundwater supplies or interfere substantially with groundwater recharge. The Project will not create or contribute runoff water in excess of existing storm water drainage capacity; therefore impacts are less than significant.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project consists of the construction and operation of up to thirty (30) OSGs.

Construction activities will include:

- Demolition of some existing onsite equipment
- Site preparation: Excavation, grading, soil compaction, etc.
- New foundation construction as needed: pour slurry, place rebar / supports
- Facility Construction/Installation: Install below ground drain system, install concrete sump, install grounding halos, place structural steel, install pre-fabricated pipe spools, erect pre-fabricated equipment frames and platforms
- Set equipment: Separators, small chemical tanks, air compressor, generator(s), pump(s)
- Insulation of pipe / equipment
- Installation of transformer and pad
- Installation of septic system and control room
- Touch up paint for structural steel
- Grade and pave access roads

The installation of the OSGs will require minimal new disturbance of soil, native vegetation, and habitat. All surface area disturbed by construction activities will remain onsite. Temporary equipment staging areas will become part of the plant site and/or be set aside for employee and visitor vehicle parking. No surface area is anticipated to be disturbed once the project is operational. As installation of the Project requires minimal soil disturbance, the Project construction requires only minimal water usage for the control of fugitive dust in compliance with District Regulation VIII (Fugitive PM₁₀ Prohibition) requirements.



Operation of the Project will require the use of water to generate steam that will then be injected into the ground to enhance oil recovery. The Project will use recycled produced water from the Belridge water recycling plants that process water produced from the oil reservoir. From 2008 DOGGR records (the most recent year that DOGGR records are available), produced water available for recycling purposes totaled 128.2 million barrels (MM bbls) and produced water actually recycled as steam totaled 55 MM bbls per year, leaving 73.2 MM bbls of surplus.. This project is estimated to use approximately 58 million barrels per year for steam generation.

Treated produced water used in and produced by the steam generation process is not potable and is not suitable even for agricultural purposes until after it is processed through the Belridge water plants. . No wastewater will be discharged to the environment from the OSGs. No beneficial-use aquifers will be affected by the Project. As such, the Project would have no impact on water quality, waste discharge, and groundwater supplies.

Mitigation: To ensure compliance with DOGGR requirements, the following measure will be made a condition of project approval:

- **HYD-1** – *Permittee shall comply with all applicable Division of Oil, Gas, and Geothermal Resources (DOGGR) Underground Injection Control (UIC) requirements. Permittee shall retain any records deemed necessary by DOGGR onsite and the records shall be made available to the District upon inspection. [Public Resources Code 21000-21177: California Environmental Quality Act]*

Drainage Systems (c, d)

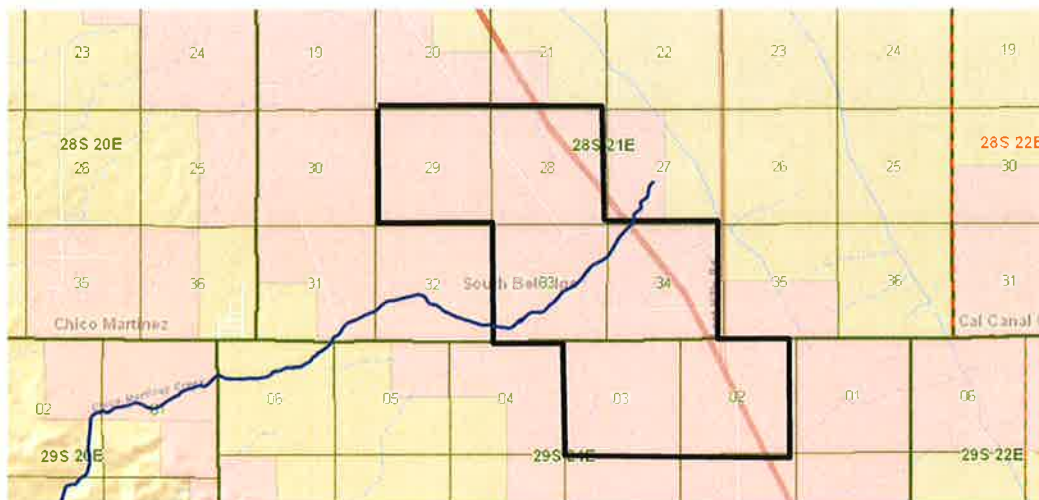
Conclusion: The Project will not substantially alter Aera's existing drainage pattern.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. Chico Martinez Creek runs through the northwestern portion of the Generator Setting 3356 Project Site. Chico Martinez Creek is a dry bed, except during and immediately following rainstorms. However, construction for the Project for this area will not occur outside of the fenced boundary of Generator Setting 3356. Aside from Chico Martinez Creek, no other creeks, rivers, or waterways flow through the Project area. The existing sites will not be altered enough to have a negative effect on surface runoff or increase flooding potential. All runoff from steam generator sites either percolates near the site, or runs to natural drainage channels. Therefore, there will be no impacts on any public drainage systems.

Mitigation: None required.



Figure 8. Chico Martinez Creek



Flooding and Inundation (g - j)

Conclusion: The Project will not expose people or structures to negative impacts resulting from floods, seiche, tsunami, or mudflow; therefore, impacts are less than significant.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project does not include construction of any housing units. The Project is not located within the 100-year flood zone, as mapped on Flood Insurance Rate Maps (FIRM); nor is it located in an FHSZ, as designated by Kern County. The Project site is in a county not identified in the Tsunami Inundation maps by the California Geological Survey as a county with inundation risk. The steam generator sites are open, with the only surrounding barriers being chain-link fence, which would not impede or redirect flood flows. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose persons or structures to negative impacts resulting from flooding, tsunamis, or mudflow.

Mitigation: None required.

References

California Department of Conservation, California Geological Survey. *Tsunami Information*. Website:
http://www.conservation.ca.gov/cgs/geologic_hazards/Tsunami/Pages/Index.aspx



County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Federal Emergency Management Agency. Website: <http://www.msc.fema.gov/>

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

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

X. LAND USE/PLANNING

Land Use and Planning (a, b)

Conclusion: The Project will not physically divide an established community or conflict with any established land use planning or zoning requirements.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. There is no established community that may be physically divided by the Project.

Section 19.10.040 of the Kern County Zoning Ordinance incorporates by reference the zoning district boundaries, as shown on the Official Zoning Maps maintained by the Kern County Planning Department. As shown on the Official Zoning Maps (Zoning Map 75 and Zoning Map 96), all areas of the Project are zoned "A", "Exclusive Agriculture District."



Pursuant to Section 19.12.020, Part E (Resource Extraction and Energy Developments Uses) of the Kern County Zoning Ordinance, “*Cogeneration facility or steam generators, primarily intended for steam production used for production of oil or gas, excluding coal fired*” may be permitted in areas designated for as an “Exclusive Agriculture District (A).” The surrounding land use is either general agricultural or oil production zoned as “Exclusive Agriculture (A).” Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the project would conflict with applicable land-use plans, policies, or regulation.

Mitigation: None required.

Habitat and Natural Community Conservation Plans (c)

Conclusion: The Project will not conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The project is not located within the boundaries of a Natural Community Conservation Plans (NCCP) or any other USFWS designated critical habitat. On December 2006, the Kern County Planning Department issued a draft Kern County Valley Floor Habitat Conservation Plan (VFHCP). The VFHCP divides the program area into three (3) separate habitat zone categories based on habitat value: Red Zone (the highest valued conservation habitat), Green Zone (area with some disturbance but important for movement of covered habitat species), and White Zone (limited importance due to intensive land uses). In addition to the three habitat quality zone areas, the VFHCP identifies an Oil Zone as part of an Oil Strategy. According to Figure 3-1 and Figure 5-1 of the VFHCP, the Project is located in a “*White Zone*” and an “*Oil Field – High Intensity*.” As such, the Project will have no impact on habitat quality and will be consistent with the VFHCP.

Mitigation: None required.

References

California Department of Fish and Wildlife. *Natural Community Conservation Planning*. Website: <http://www.dfg.ca.gov/habcon/nccp/>.

County of Kern. *2009 General Plan*. Website: <http://pcd.kerndsa.com/planning/planning-documents/general-plans>.

Kern County Planning Department. Kern County Zoning Ordinance. Official Zoning Maps. Zoning Map 75 and Zoning Map 96.



County of Kern. Planning and Community Development. *First Draft Valley Floor Habitat Conservation Plan*. Website:

<http://pcd.kerndsa.com/planning/planning-programs>

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

United States Fish and Wildlife Service. *Conservation Plans and Agreements Database*. Website: http://ecos.fws.gov/conserv_plans/public.jsp

United States Fish and Wildlife Service. *Habitat Conservation Plans*. Website: <http://www.fws.gov/endangered/what-we-do/hcp-overview.html>

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

XI. Mineral Resources Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				✓
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?				✓

XI. MINERAL RESOURCES

Mineral Resources (a, b)

Conclusion: The Project will have no impact on loss of availability of a regional, state, or locally important mineral resource.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The project sites are currently designated in the Kern County 2009 General Plan for Mineral and Petroleum (Code 8.4) and are zoned as Exclusive Agriculture (Zone A). The project sites are not located in areas known to contain a mineral resource that is of value to the region or state. Therefore, the District concludes that there is no substantial evidence of record to support a



conclusion that the Project would result in the loss of a known mineral resource or the availability of a locally important mineral resource recovery site.

Mitigation: None required.

References

California Department of Conservation, California Geological Survey. *Mineral Resources*. Website:
http://www.conservation.ca.gov/cgs/geologic_resources/mineral_resource_mapping/Pages/Index.aspx

County of Kern. *2009 General Plan*. Website:
<http://pcd.kerndsa.com/planning/planning-documents/general-plans>.

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

XII. Noise Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			✓	
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?			✓	
c) A substantial permanent increase in ambient noise levels in the Project vicinity above levels existing without the Project?			✓	
d) A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above levels existing without the Project?			✓	
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?				✓



XII. Noise (continued) Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
f) For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?				✓

XII. NOISE

Exposure of Persons to Noise (a)

Conclusion: The Project may result in the exposure of persons to increased noise or vibrations; however, the potential impacts are considered less than significant.

Discussion: Noise is the term generally given to the “unwanted” aspects of sound and is generally characterized in terms of decibels on the A-weighted scale (dBA). Because environmental noise fluctuates over time, most descriptors average the sound level over the time of exposure, and some add “penalties” during the times of day when intrusive sounds will be more disruptive to listeners. The most commonly-used descriptors are:

- **Day-night average sound level (Ldn).** The Ldn is a 24-hour average sound level, but, for the night hours between ten (10:00) p.m. and seven (7:00) a.m., 10 dBA is added to the average. This additional 10 dBA accounts for the tendency of people to perceive noise more loudly at night.
- **Community noise equivalent level (CNEL).** The CNEL is similar to the Ldn, except that, in addition to the ten (10:00) p.m. to seven (7:00) a.m. 10 dBA penalty, a 5 dBA penalty is applied to noise levels occurring from seven (7:00) p.m. to ten (10:00) p.m.

These two descriptors are roughly equivalent in magnitude.

The Kern County Municipal Code contains general limitations on noise in several ordinances, but does not quantify levels that should not be exceeded. For example, the Municipal Code Section 8.36.020 (H) prohibits noise from construction activity from nine (9:00) p.m. and six (6:00) a.m. on weekdays and nine (9:00) p.m. and eight (8:00) a.m. on weekends, which is audible to a person at a distance of 150 feet from the construction site if the construction site is located within 1000 feet of an occupied residential dwelling.



The Kern County General Plan Noise Element identifies the following land uses as noise sensitive:

- Residential areas
- Schools
- Convalescent and acute care hospitals
- Parks and recreational areas
- Churches

The area surrounding the Project site is zoned agricultural and is either vacant agricultural land or contains existing oil production operations. The nearest sensitive receptor to the Project is the Belridge Elementary School located approximately 2,000 feet west of the Belridge Oil Field and 8,000 feet west of the closest Project boundary.

The Kern County General Plan Noise Element prohibits new noise-sensitive land uses within noise impact areas where outdoor noise levels exceed 65 dBA. Aera performed a noise survey of a similar steam generator project and found noise levels at the location of highest generated noise, the steam generator discharge headers, to exceed 90 dBA.

Noise from stationary sources at various distances can be estimated using the following equation:

$$\text{Eq. 1: } LDN(D) = LDN(\text{measured distance}) - 20\log(D/\text{measured distance}) - 10G\log(D/\text{measured})$$

Where D = distance other than measured distance and G = a constant accounting for ground effects (for hard, level ground, G = 0)

For conservative purposes, assuming the steam discharge headers were located at the Project property line, at a distance of 2,000 feet, the noise generated from the steam discharge headers would have to exceed 130 dBA before exceeding the 65 dBA threshold of the Kern County General Plan. Location of the discharge headers, set back from the property line, would further reduce noise levels. Therefore, noise from the OSGs is not anticipated to expose persons to noise levels greater than local standards or noise ordinances.

Mitigation: None required.

Exposure of Persons to Ground-borne Noise and Vibration (b)

Conclusion: Although the Project will generate groundborne noise and vibration, it is estimated that generated ground-borne noise and vibration will be below impact levels for annoyance or property damage.



Discussion: During construction, ground-borne vibration and noise may be generated by large trucks and other heavy equipment during grading and construction of buildings. Generally, the ground-borne vibration and noise will have a minimal impact on nearby sensitive receptors; however, during some phases of construction, nearby sensitive receptors may notice ground-borne vibration. The vibration will cease when construction is complete. The Federal Transit Authority publishes an assessment of the typical vibration levels from common construction equipment as shown in Table 7.

Table 7. Vibration Velocities for Construction Equipment

Equipment		Vibration Level						
		25 Feet	50 Feet	100 Feet	150 Feet	200 Feet	300 Feet	400 Feet
Pile-driving (Impact)	PPV	0.644	0.228	0.081	0.044	0.028	0.015	0.010
	VdB	104	95	86	81	77	72	68
Large bulldozer	PPV	0.089	0.031	0.011	0.006	0.004	0.002	0.001
	VdB	87	78	69	64	60	55	51
Loaded trucks	PPV	0.076	0.027	0.010	0.005	0.003	0.002	0.001
	VdB	86	77	68	63	59	54	50
Jackhammer	PPV	0.035	0.012	0.004	0.002	0.000	0.001	0.001
	VdB	79	70	61	56	52	47	43

PPV= Inches/Second; VdB = Vibration decibels

SOURCE: Federal Transit Authority. May 2006. *Transit Noise and Vibration Impact Assessment*.

As shown in the table above, pile-driving activities have the highest associated vibration level compared to the other construction-related activities, but Aera will refrain from using pile drivers for the proposed project. For evaluation of vibration impacts, the District chose to evaluate the vibration level associated with large bulldozers and loaded trucks for determining potential maximum project vibrations impacts at the nearby receptors. Vibration levels at distances other than those shown in Table 7 can be calculated using Equation 2, shown below, taken from the Federal Transit Authority *Transit Noise and Vibration Impact Assessment*:

Eq. 2: $L_v(D) = L_v(25 \text{ ft}) - 30\log(D/25)$

The nearest sensitive receptor to the Project is the Belridge Elementary School located approximately 2,000 feet west of the Belridge Oil Field and 8,000 feet west of the closest Project boundary. At 8,000 feet the vibration from a large bulldozer corresponds to a vibration level of approximately 12 vibration decibels (VdB), using the level of 87



VdB for bulldozer activities at distances of 25 feet. At a distance of 2,000 feet the vibration decibels are approximately 30. The Federal Transit Authority publishes the vibration impact levels for various categories of land use and vibration frequency as shown in Table 8.

Table 8. Groundborne Vibration Impact Levels for Annoyance

Land Use Category	Acceptable Ground-Borne Vibration Levels (VdB re 1 micro-inch/sec)		
	Frequent Events ¹	Occasional Events ²	Infrequent Events ³
Category 1: Buildings where vibration will interfere with interior operations.	65 ⁴	65 ⁴	65 ⁴
Category 2: Residences and buildings where people normally sleep.	72	75	80
Category 3: Institutional land uses with primarily daytime use.	75	78	83

Notes:

1. "Frequent Events" are defined as more than 70 vibration events of the same source per day.
2. "Occasional Events" are defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" are defined as fewer than 30 vibration events of the same kind per day. This category includes most commuter rail branch lines.
4. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.

SOURCE: Federal Transit Authority. May 2006. *Transit Noise and Vibration Impact Assessment*.

The effective vibration level from a large bulldozer operating at a distance of 8,000 feet away from the Belridge Elementary School will be below any of the acceptable vibration levels published by the FTA.

In addition to vibration-related annoyance thresholds, the Federal Transit Authority lists vibration-related damage thresholds as shown below in Table 9.



Table 9. Construction Vibration Damage Thresholds

• Building Category	Approximate vibration velocity level (L_v^*)
I. Reinforced-concrete, steel or timber (no plaster)	102
II. Engineered concrete and masonry (no plaster)	98
III. Non-engineered timber and masonry buildings	94
IV. Buildings extremely susceptible to vibration damage	90
* RMS velocity in decibels (VdB) re 1 micro-inch/second	

The highest vibration level perceived at a nearby receptor (2,000 feet) from a large bulldozer will be approximately 30 VdB, which is below the thresholds for all building categories in Table 9. Therefore, the District concludes that construction vibration damage impacts will be less than significant.

Mitigation: No mitigation is required.

Ambient Noise Levels (c, d)

Conclusion: Although the Project will increase temporary and permanent ambient noise levels, noise increases associated with the Project are expected to have a less than significant impact.

Discussion: Construction activities are temporary and will only occur during daylight hours. Based on prior Aera steam generation construction activities, the project's noise-generating operations may include:

- Excavation of the footprint/foundation may require operation of excavators, loaders, and trucks.
- Trenching operations may occur around the periphery of the proposed site, and construction personnel may use backhoes.
- Final grading of the site and installation of driveways, sidewalks, other hard surfaces, and landscaping will occur on the site. These operations may require use of backhoe tractors, tractor graders, and concrete trucks.



Table 10. Maximum Noise Levels of Common Construction Machines

Noise Source	Noise Level (dBA) /a/*				
	50 Feet	100 Feet	200 Feet	400 Feet	800 Feet
Jackhammer	81-98	75-92	69-86	63-82	57-76
Pneumatic impact equipment	83-88	77-83	71-77	65-71	59-65
Trucks	82-95	76-89	70-83	64-77	58-71
Backhoe	73-95	67-89	61-83	56-77	50-71
Cranes (moveable)	75-88	69-82	63-76	57-70	51-64
Front loader	73-86	67-80	61-74	56-68	50-62
Concrete mixer	75-88	69-82	63-76	57-70	51-64
Impact pile driver	101	95	89	86	80
Sonic pile driver	96	90	84	81	75

Note: /a/ assumes a 6-dBA decline for noise generated by a "point source" and traveling over hard surfaces. ***Source:** City of Los Angeles. 2003. L.A. CEQA Thresholds Guide. Los Angeles, CA, for 50-foot and 100-foot columns. Noise levels for 200-foot, 400-foot, and 800-foot columns calculated from the assumption that dBA declines by 6 dBA with doubling of the distance between noise source and receptor.

Table 11. Outdoor Construction Noise Levels

Construction Phase	Noise Level (dBA)*				
	50 Feet	100 Feet	200 Feet	400 Feet	800 Feet
Grading/excavation	86	80	74	68	62
Foundations	77	71	65	59	53
Structural	83	77	71	65	59
Finishing	86	82	76	70	64

***Source:** City of Los Angeles. 2003. L.A. CEQA Thresholds Guide. Los Angeles, CA for 50 feet and 100 feet columns. Noise levels for 100-foot, 200-foot, 400-foot, and 800-foot columns calculated from the assumption that dBA declines by 6 dBA with doubling of the distance between noise source and receptor.



Tables 10 and 11 list noise levels of common construction machines and construction operations. As shown in Tables 10 and 11, at a distance of 2,000 feet, all construction activities are estimated to have noise levels of less than 55 dBA. Therefore, temporary noise levels associated with construction impacts are estimated to be negligible.

As discussed above in response to (a), noise from the operation of the OSGs is not anticipated to exceed any local noise standards or noise ordinances. Therefore, operational noise is anticipated to have a less than significant impact.

Mitigation: No mitigation is required.

Increased Noise Exposure Near Airfields (e, f)

Conclusion: The Project will not expose people residing or working in the Project area to excessive noise levels.

Discussion: The Project area is not located within two (2) miles of a public airport. Lost Hills-Kern County Airport, the nearest public airport to the Project area, is located approximately eleven (11) miles north of the proposed project site. The proposed project sites are not located within the airport land-use plans of Lost Hills-Kern County Airport. The Project area includes a private airport strip, the Belridge Strip, which is only used for emergency evacuations. Therefore, the Project will not expose people working in the proposed Project area to excessive noise levels.

Mitigation: No mitigation is required.

References

Aera Energy LLC. November 2010. *Noise Survey for Steam Generator 2868 (ATC Project S-1072356)*

City of Los Angeles. 2003. L.A. CEQA Thresholds Guide. Los Angeles, CA

County of Kern. 2009 *General Plan*. Website:
<http://pcd.kerndsa.com/planning/planning-documents/general-plans>.

County of Kern. Code of Ordinances, Title 8 – Health and Safety. October 2011.

Federal Transit Authority. May 2006. *Transit Noise and Vibration Impact Assessment*.

Google Maps. December 2011 and November 2013.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



XIII. Population / Housing Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				✓
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				✓
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				✓

XIII. POPULATION AND HOUSING

Population and Housing (a, b, c)

Conclusion: The project will not result in a substantial growth in population growth or the displacement of people or housing units.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. Staff for the Project will be transferred from the existing Aera operations. Due to relocation of the Aera's staff, the proposed project will not induce substantial population growth or result in a significant increase in employment. Therefore, impacts are less than significant.

The Project involves installation of OSGs on a site that currently consists of undeveloped parcels or parcels with oil production facilities. There are no residential buildings on the site; therefore, the proposed project will have no impact in this regard.

Mitigation: None needed.

References

Google Maps. December 2011 and November 2013.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



XIV. Public Services Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?				✓
ii) Police protection?				✓
iii) Schools?				✓
iv) Parks?				✓
v) Other public facilities?				✓

XIV. PUBLIC SERVICES

Fire Protection (a.i)

Conclusion: The Project will not result in an increased demand for fire protection services.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding operations and land uses. The project sites are located at or very near existing steam generator sites. CAL FIRE has determined that Kern County has no Very High FHSZs in the LRA and only a Moderate FHSZ in the SRA. The Project will be designed to meet the standards of the current California Fire Code and Federal safety standards. Installation and operation of the Project in accordance with these standards will minimize the potential for fire. Fire protection for this property is currently handled by the Kern County Fire Department. The nearest fire station to the Project will be the Buttonwillow Fire Station located approximately 13 miles southeast of the Project. This fire station covers approximately 220 square miles and would be adequate to cover the Project. No additional increase in fire protection demand is anticipated. Therefore, there is no substantial evidence of record to support a conclusion that the Project would have a negative impact on existing fire protection service



Mitigation: No mitigation is required.

Police Protection and Other Public Facilities (a.ii – a.v)

Conclusion: The Project will not result in an increased demand for police protection or other public facilities, nor will the Project result in a decrease in responses times.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding operations and land uses. The project sites are located at or very near existing steam generator sites. The nearest police station is the Kern County Sheriff's Office police substation located fifteen (15) miles Southeast in Buttonwillow, California. The Project is expected to be maintained and manned by existing Aera personnel and contractors and, therefore, will not increase the population in the surrounding area. A lack of substantial increase in population precludes the possibility of the Project having a negative impact on police services, local schools and parks, or any other public facility. Therefore, there is no substantial evidence of record to support a conclusion that the Project would have a significant impact on public facilities and services.

Mitigation: No mitigation is required.

References

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Kern County Fire Department. *Stations*. Website: <http://www.kerncountyfire.org/>

Kern County Sheriff's Office. Buttonwillow. Website: www.kernsheriff.com/FieldOps/Substations/Buttonwillow/Pages/default.aspx

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



XV. Recreation Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				✓
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				✓

XV. RECREATION

Recreational Facilities (a, b)

Conclusion: The Project will not have an impact on neighborhood or regional parks, or any other local recreational facilities.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The project area currently does not contain a recreational facility nor will the proposed Project require the construction or expansion of recreational facilities. Construction and operation of the Project will not increase population of the surrounding area and will therefore not increase demand for recreation.

Mitigation: None required.

References

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Google Maps. December 2011 and November 2013.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



XVI. Transportation / Traffic Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation systems, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				✓
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?				✓
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				✓
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				✓
e) Result in inadequate emergency access?				✓
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				✓

XVI. TRANSPORTATION / TRAFFIC

Conflict with Transportation and Transit Plans and Facilities (a, b, f)

Conclusion: The Project will have no conflict with any applicable transportation plan, congestion management plan, or with any adopted public transit policies or plans.



Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. During peak construction, staffing is expected to include 35 to 45 mechanical /civil /structural workers, five (5) Aera staff, and 10-12 electricians. There will be few if any new permanent employees. Existing Aera staff and contract workers will be reassigned to this location from other positions at Belridge or nearby projects that are ramping down. The Project is expected to generate approximately 105 heavy-duty truck trips (315 truck trips for the Project), which are needed to transport construction materials. The trucks are expected to use Contractors Road, 7th Standard Street, and State Highway 33.

Project construction related traffic is short-term and will not be sufficient to impede the flow of traffic or decrease the level of service (LOS) on these roads.

The Project consists of the construction and operation of OSGs which are used in the oil recovery process. The Project is expected to be maintained and manned by existing Aera personnel and contractors. As the project will not yield finished product, there will be no additional offsite vehicle trips associated with the operation of the project, except for the occasional maintenance supplies.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would conflict with transportation and transit plans or would result in negative impacts to existing circulation systems.

Mitigation: None required.

Potential Safety Risks (c, d, e)

Conclusion: The Project will not result in a change in air traffic patterns or include hazardous design features and, therefore, will not pose a safety risk.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites.

The project sites are not within two (2) miles of a public airport or public use airport. The nearest public airport is the Meadows Field Airport (BFL), located approximately 45 miles east of the Project in the City of Bakersfield. The private landing strip discussed above is closed per FAA regulations, and only under extreme circumstances, such as emergency evacuation of severely injured personnel or emergency transport of incident response personnel for a large incident, would the landing strip be utilized. Therefore,



the Project will not have an impact on safety risks resulting from a change in any air traffic patterns.

The Project includes only limited construction of new roads or alterations to existing roads or intersections. These roads will be consistent with current operations and would remain as part of the plant site after construction is complete. Therefore, the Project will be designed in such a manner that there are no potential impacts on emergency access.

Mitigation: None required.

References

Google Maps. December 2011 and November 2013.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

XVII. Utilities / Service Systems Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				✓
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				✓
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?				✓



XVII. Utilities / Service Systems (continued) Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
e) Result in a determination by the wastewater treatment provider that 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?				✓
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?				✓
g) Comply with federal, state, and local statutes and regulations related to solid waste?				✓

XVII. UTILITIES / SERVICE SYSTEMS

Wastewater and Storm Water Facilities (a-c, e)

Conclusion: The Project will not require additional wastewater or storm water facilities.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites.

The Central Valley RWQCB regulates waste discharges into waters of the state through the National Pollutant Discharge Elimination System (NPDES). Dischargers whose projects result in land disturbance of one (1) or more acres of soil are required to obtain coverage under the NPDES permit system by obtaining a General Permit for Discharges of Storm Water Associated with Construction Activity, issued by the RWQCB.

Construction activities such as clearing and grading, and ground disturbances such as stockpiling or excavating will be subject to the State Water Resources Control Board General Permit Order Number 2009-0009-DWQ.

Aera currently operates under California Regional Water Quality Control Board (RWQCB) Order Number R5-2006-0072. The Project will be constructed on property owned by Aera, and wastewater generated from the Project will be discharged through Aera's existing injection wells that are covered under Order Number R5-2006-0072.



Mitigation: See Mitigation Measures HYD-1 and HYD-2.

Water Supply (d)

Conclusion: The Project will have little impact on existing water supplies.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites. The Project will use water supplied from existing Aera industrial supply wells located in the Project area and will not require the construction of additional water supply facilities or an increased demand from any public water supply facilities. As such, there is no impact on water supply.

Mitigation: None required.

Solid Waste (f, g)

Conclusion: The Project will not require construction of any additional solid waste handling facilities.

Discussion: The Project is within the existing boundaries of the Belridge Oil Field. The Project is located on property currently occupied by Aera for oil production activities consistent with current and surrounding land uses. The project sites are located at or very near existing steam generator sites with generated solid wastes delivered to the Taft Sanitary Landfill. The Project will not result in any permanent increase in personnel and will not necessitate an increase in, or the construction of, new solid waste handling facilities. Therefore the Project would have no solid waste impacts.

Mitigation: None required.

References

California Regional Water Quality Control Board. Central Valley Region. *Order No. R5-2006-0072 Waste Discharge Requirements for Aera Energy LLC South Wastewater Disposal Facility.*

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping.* Website: <http://esps.kerndsa.com/gis>.

Google Maps. November 2013.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.



XVIII. Mandatory Findings of Significance Would the Project:	Potentially Significant Impact	Potentially Significant Impact Unless Mitigated	Less Than Significant Impact	No Impact
a) Does the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓		
b) Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively Considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?			✓	
c) Does the Project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?			✓	

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

Impacts on the Environment and Special Status Species (a)

Conclusion: The Project, with the incorporation of mitigation measures, will have a less than significant impact on the environment and special status plant and animal species.

Discussion: With the incorporation of required permit conditions, the surrender of ERCs, and the incorporation of mitigation measures as outlined in the Initial Study, the project will have a less than significant impact on the environment and special status species.



Mitigation: See Mitigation Measures: AIR-1; BIO-1 through BIO-18; GHG-1; HAZ-1 through HAZ-4; and HYD-1.

Cumulative Impacts (b)

Conclusion: The Project will not have cumulatively significant impacts on the environment, plant and animal species, or the human population.

Discussion: CEQA Guidelines state that a Lead Agency shall consider whether the cumulative impact of a project is significant and whether the effects of the project are cumulatively considerable (CCR §15065). The assessment of the significance of the cumulative effects of the project must, therefore, be conducted in connection with the effects of past projects, other current projects, and probable future projects. Due to the nature and location of the Project and consistency with environmental policies, incremental contributions to impacts are considered less than cumulatively considerable. The Project is not a part of any larger planned developments. Therefore, the Project would not contribute substantially to adverse cumulative conditions, or create any substantial indirect impacts (i.e., an increase in population that could lead to an increase need to housing, increase in traffic, air pollutants, etc.).

Mitigation: None required.

Impacts on Humans (c)

Conclusion: The Project, with the incorporation of mitigation measures, will not result in environmental impacts that would cause substantial adverse effects on human beings.

Discussion: The analyses of environmental issues contained in this Initial Study indicate that the Project is not expected to have a substantial impact on human beings, either directly or indirectly. Project design elements and mitigation measures have been incorporated into the project to reduce all potentially significant impacts to less than significant.

Mitigation: See Mitigation Measures: AIR-1; CUL-1 and CUL-2; GHG-1; HAZ-1 through HAZ-4; and HYD-1.

References

County of Kern. Engineering, Surveying and Permit Services. *Kern County Online GIS Mapping*. Website: <http://esps.kerndsa.com/gis>.

Google Maps. December 2011 and November 2013.



San Joaquin Valley Unified Air Pollution Control District. December 2013. *Draft Authority to Construct: Application Review*, Applicant Numbers S-1547 and S-1548, Project Numbers S-1113576 and S-1113577. Available at San Joaquin Valley Air Pollution Control District. 34946 Flyover Court, Bakersfield, CA 93308-9725.

San Joaquin Valley Unified Air Pollution Control District. December 2013. *Draft Authority to Construct: Application Review*, Applicant Numbers S-1547 and S-1548, Project Numbers S-1121401 and S-1121402. Available at San Joaquin Valley Air Pollution Control District. 34946 Flyover Court, Bakersfield, CA 93308-9725.

San Joaquin Valley Unified Air Pollution Control District. December 2013. *Summary: CEQA Modeling. Aera Energy LLC Projects # S-1121401 and S-1121402*. Available at San Joaquin Valley Air Pollution Control District. 1990 East Gettysburg Avenue, Fresno, CA 93726.

Winn, Brent, Environmental Engineer. Aera Energy LLC. Electronic and Telephone Communication.

H. APPENDICES

- Appendix A. Acronyms and Abbreviations
- Appendix B. Mitigation Monitoring and Reporting Program
- Appendix C. Construction Emissions
- Appendix D. Engineering Evaluation
- Appendix E. Summary: CEQA Modeling
- Appendix F. Reconnaissance-Level Biological Survey



Appendix A. Acronyms and Abbreviations

AAQA	Ambient Air Quality Analysis
AAQS	Ambient Air Quality Standards
AB 2588	Assembly Bill No. 2588 – Air Toxics “Hot Spots” Information and Assessment Act
AERA	Aera Energy LLC
ARB	California Air Resources Board
ATC	Authority to Construct
BACT	Best Available Control Technology
dB	Decibel
BPS	Best Performance Standards
CAL FIRE	California Department of Forestry and Fire Prevention
Cal/OSHA	California Department of Industrial Relations - Division of Occupational Safety and Health
CBSC	California Building Standards Code
CCR	California Code of Regulations
CFR	Code of Federal Regulation
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNEL	Community Noise Equivalent
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
dBA	Decibels on the A-Weighted Scale
District	San Joaquin Valley Unified Air Pollution Control District
DOGGR	California Division of Oil, Gas, and Geothermal Resources
DTSC	California Department of Toxic Substances Control
EIR	Environmental Impact Report
ERC	Emission Reduction Credit
ERG	Environmental Review Guidelines
ESA	Endangered Species Act
HAP	Hazardous Air Pollutant
HCP	Habitat Conservation Plan
HRA	Health Risk Assessment
Ldn	Day-Night Average Sound Level
LRA	Local Responsible Agency
MEI	Maximally Exposed Individual
MMBtu/hr	Million British Thermal Units Per Hour
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NOx	Oxides of Nitrogen



NPDES	National Pollutant Discharge Elimination System
NRA	California Natural Resources Agency
NSR	New Source Review
O ₂	Oxygen
OSG	Oilfield Steam Generator
PM ₁₀	Particulate Matter 10 microns in diameter
PM _{2.5}	Particulate Matter 2.5 microns in diameter
ppmv	Parts Per Million, Volumetric
PPV	Peak Particle Velocity
PRC	Public Resources Code
PUC	Public Utility Commission
RMR	Risk Management Review
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SB 288	Senate Bill No. 288 – Protect California Air Act of 2003
SIP	State Implementation Plan
SO _x	Sulfur Oxides
T-BACT	Toxics Best Available Control Technology
TAC	Toxic Air Contaminant
TEOR	Thermally Enhanced Oil Recovery
tpy	Tons Per Year
US EPA	US Environmental Protection Agency
USFWS	US Fish and Wildlife Service
USGS	US Geological Survey
VdB	Vibration Decibels
VFHCP	Valley Floor Habitat Conservation Plan
VOC	Volatile Organic Compound



Appendix B. Mitigation Monitoring and Reporting Program

Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
Operational emissions may exceed the District's thresholds of significance.	Potentially Significant	AIR-1	Aera must surrender ERCs sufficient to completely offset operational emissions as required by District NSR requirements. Offsets include the applicable offset ratio specified in Section 4.8 of Rule 2201.	San Joaquin Valley Air Pollution Control District	Less than Significant
The project could result in take of a candidate, sensitive, or special status species.	Potentially Significant	BIO-1	A Qualified Biologist will conduct a focused pre-construction survey to determine the presence/absence of potential impacts on sensitive species prior to the onset of ground disturbance. The survey shall be conducted in accordance with the standard protocol of the U.S Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW). If more than 30 days pass before the onset of ground disturbance, an additional survey shall be conducted by a Qualified Biologist within 30 days prior to the onset of ground disturbance. Permittee shall make all biological surveys available to District staff upon request.	San Joaquin Valley Air Pollution Control District	Less than Significant
		BIO-2	During construction activities, standardized avoidance measures shall be implemented to preclude take of special status species. If standardized avoidance measures cannot be achieved Permittee will consult with the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS) to develop alternative compliance measures and/or obtain an Incidental Take Permit. If standardized avoidance measures fail and there is a take of a threatened or endangered species Permittee will notify USFWS, CDFW, and District immediately. Permittee shall make available to the District any documentation required by USFWS and CDFW.		
		BIO-3	Impacts to endangered species habitat, as identified in preconstruction surveys, will be mitigated at the Coles Levee		



Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
		<p>BIO-4</p> <p>BIO-5</p> <p>BIO-6</p> <p>BIO-7</p>	<p>Ecological Preserve at a ratio of 1:1:1.</p> <p>A biological monitor will be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs.</p> <p>Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways. In the event that construction activities should occur during night time, a 10-mph speed limit shall be observed from dusk until dawn. Off-road traffic outside of designated project areas should be prohibited.</p> <p>During construction activities, all excavated, steep-walled holes or trenches more than two (2) feet deep shall be covered at the close of each working day by plywood or similar materials. If the holes or trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Wildlife (CDFW) shall be contacted as noted in Measure BIO-17.</p> <p>All construction pipes, culverts, or similar structures with a diameter of four (4) inches or greater that are stored at a construction site for one (1) or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe should not be moved until the U.S. Fish and Wildlife Service (USFWS) has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.</p>		



Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
		<p>BIO-8</p> <p>BIO-9</p> <p>BIO-10</p> <p>BIO-11</p>	<p>All food-related trash items such as wrappers, cans, bottles, and food scraps shall be disposed of in securely closed containers and removed at least once a week from the construction sites.</p> <p>No firearms shall be allowed on the project sites.</p> <p>No pets, such as dogs or cats, shall be permitted on the project sites.</p> <p>Use of rodenticides and herbicides in the project sites shall be restricted. If use of these compounds is deemed necessary, Permittee shall observe label and other restrictions mandated by the U.S. Environmental Protection Agency (USEPA), California Department of Food and Agriculture (CDFA), and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the U.S. Fish and Wildlife Service (USFWS). If rodent control must be conducted, zinc phosphide shall be used.</p>		
		BIO-12	<p>Permittee shall appoint a representative to be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the U.S. Fish and Wildlife Service (USFWS).</p>		
		BIO-13	<p>An employee education program shall be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: a description of the San Joaquin kit fox and its</p>		



Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
		BIO-14	<p>habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.</p> <p>Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), and revegetation experts.</p>		
		BIO-15	<p>In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.</p>		
		BIO-16	<p>Any contractor, employee, or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative identified in Measure BIO-12 above. This representative shall contact the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) immediately in the case of a dead, injured or entrapped kit fox. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. They will contact the local warden or, Mr. Paul Hoffman, Wildlife Biologist. Contact information for CDFW and</p>		



San Joaquin Valley Unified Air Pollution Control District
 Initial Study and Draft Mitigated Negative Declaration
 Aera Energy Belridge Oil Field Complex Oil Field Steam Generators Project

January 7, 2014

Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
		BIO-17	<p>USFWS is provided below in Measure BIO-17.</p> <p>The Sacramento Fish and Wildlife Office and California Department of Fish and Wildlife (CDFW) shall be notified in writing within three (3) working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. Contact information is provided below.</p> <p>CDFW: Ms. Reagen O'Leary, Environmental Scientist 1234 E. Shaw Avenue Fresno, CA 93710 Phone: (559) 243-4014</p> <p>CDFW: Mr. Paul Hoffman, Wildlife Biologist 1701 Nimbus Road, Suite A Rancho Cordova, CA 95670 (530) 934-9309</p> <p>USFWS: Chief of the Division of Endangered Species 2800 Cottage Way, Suite W2605 Sacramento, CA 95825-1846 (916) 414-6620 or (916) 414-6600.</p>		
		BIO-18	<p>New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the U.S. Fish and Wildlife Service (USFWS) at the following address: Endangered Species Division, 2800 Cottage Way, Suite W2605, Sacramento, CA 95825-1846.</p>		



Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>The project could have an impact on archaeological or paleontological resources.</p>	<p>Less than Significant</p>	<p>CUL-1</p>	<p>In the event that archaeological/paleontological resources are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and Permittee shall notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. A qualified archaeologist/paleontologist shall determine whether avoidance is necessary and feasible in light of the factors such as the nature of the find, project design, costs, and other considerations, and, if necessary, develop appropriate mitigation measures in consultation with Merced County and the Native American Heritage Commission (NAHC). In addition, should archaeological/paleontological resources be discovered, Permittee shall provide the District a written report in relation to the nature of the find.</p> <p>In the event that human remains are discovered during ground-disturbing activities, all work within 100 feet of the find shall cease and the discovery shall immediately be reported to the County Coroner (CC) and Native American Heritage Commission (NAHC) for further assessment. Permittee shall identify appropriate measures for treatment or disposition of the remains in consultation with the CC and NAHC. In addition, should human remains be discovered during ground-disturbing activities, Permittee shall provide the District a written report in relation to the nature of the find.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less than Significant</p>
<p>Operational emissions may exceed the District's thresholds of significance.</p>	<p>Potentially Significant</p>	<p>GHG-1</p>	<p>For All OSG Units: Steam generator shall be equipped with variable frequency drive electrical motors driving the blower and water pump and a convection section with at least 235 square feet of heat transfer surface area per MMBtu/hr of maximum rated heat input (verified by manufacturer) or a manufacturer's overall thermal efficiency rating of 88%.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less than Significant</p>



San Joaquin Valley Unified Air Pollution Control District
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Impact	Significance Prior to Mitigation	Measure Number	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>The project could expose employees and the public to hazardous materials.</p>	<p>Less than Significant</p>	<p>HAZ-1 HAZ-2 HAZ-3 HAZ-4</p>	<p>Prior to ground disturbance activities, Permittee shall provide the District documentation identifying all wells in the vicinity of the project site have been submitted to the Division of Oil, Gas, and Geothermal Resources (DOGGR) for compliance with DOGGR's "Well Review Program"</p> <p>Permittee shall retain written records on-site and notify DOGGR in the event unknown, unrecorded, abandoned, or damaged wells are discovered.</p> <p>Any wells discovered or exposed during construction activities will be tested for flammable vapors. Permittee shall retain these records onsite and the records shall be made available to the District upon inspection.</p> <p>Permittee shall retain written records on-site demonstrating compliance with all applicable Department of Toxic Substances Control (DTSC) regulations, including biennial hazardous waste reports for the use, discharge, and transport of potentially hazardous materials if necessary.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less than Significant</p>
<p>Project related waste water could have an impact on water quality.</p>	<p>Less than Significant</p>	<p>HYD-1</p>	<p>Permittee shall comply with all applicable Division of Oil, Gas, and Geothermal Resources (DOGGR) Underground Injection Control (UIC) requirements. Permittee shall retain any records deemed necessary by DOGGR onsite and the records shall be made available to the District upon inspection.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less than Significant</p>



Appendix C. Construction Emissions

Available Upon Request at District Office:

San Joaquin Valley Air Pollution Control District
Central Region
1990 E. Gettysburg Ave.
Fresno, CA 93726
(559) 230-6000



Appendix D. Draft Engineering Evaluations

Available Upon Request at District Office:

San Joaquin Valley Air Pollution Control District
Southern Region
34946 Flyover Court
Bakersfield, CA 93308
(661) 392-5500



Appendix E. Summary: CEQA Modeling

Available Upon Request at District Office:

San Joaquin Valley Air Pollution Control District
Central Region
1990 E. Gettysburg Ave.
Fresno, CA 93726
(559) 230-6000



Appendix F. Reconnaissance-Level Biological Surveys

Available Upon Request at District Office:

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Central Region
1990 E. Gettysburg Ave.
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(559) 230-6000
