

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

**Berry Petroleum Company**

**Project Numbers  
S-1111129, S-1111510, S-1111901, S-1111928**

**Kern County**

**Initial Study and Final  
Mitigated Negative Declaration**

**October 2012**

**SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT  
GOVERNING BOARD 2012**

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## Initial Study and Final Mitigated Negative Declaration

### Berry Petroleum Company (Project S-1111129, S-1111510, S-1111901, S-1111928))

October 2012

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## A. Introduction

Berry Petroleum Company (BPC) is a Title V oil production company with facilities located throughout Kern County, California. BPC is proposing to install nine (9) 85.0 MMBtu/hr gas fired steam generators and 255 thermally enhanced oil recovery (TEOR) wells. The proposed project will be located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and consistent with current operations.

Collectively, these two activities comprise the Project. The Project will allow for continued oil and gas related activities and the development of wells and infrastructure necessary to enhance oil recovery within the current operations of BPC. 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 via its Permits Required Rule (Rule 2010) and New and Modified Stationary Source Review Rule (Rule 2201). 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; California Environmental Quality Act (CEQA) Guidelines §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**

BPC is a major source as defined in District Rule 2201 (New and Modified Stationary Source Review Rule, section 3.23). As a result, 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 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 emissions increases over certain thresholds by providing emission reductions either by limiting the use of existing equipment or by providing emission offsets.

The San Joaquin Valley Air Pollution Control District (District) has received four (4) Authority to Construct (ATC) application packages from BPC to install and operate five (5) 85.0 MMBtu/hr gas fired steam generators. Four (4) 85.0 MMBtu/hr steam generators will be located at the existing and currently operating BPC 21Z Lease site and one (1) 85.0 MMBtu/hr steam generator will be located at the BPC Ethel D Lease site.

In the future, BPC plans to install an additional four (4) 85.0 MMBtu/hr gas fired steam generators and add 255 thermally enhanced oil recovery (TEOR) wells within an existing petroleum operation located within the Ethel D Lease site. Construction of this





project will occur over a 5 ½ year period. The locations and descriptions of activities of the Project are as follows:

### 21Z Lease

The proposed Project would allow for continued oil and gas related activities to enhance oil recovery within current operations located within the administrative boundaries of the McKittrick Oil Field (see Figure 1). At this location, BPC proposed to: Modify a thermally enhanced oil recovery (TEOR) operation to allow TEOR waste gas and/or Public Utility Commission (PUC) quality natural gas to be burned in the steam generators, modify the TEOR operation to allow waste gas to be burned in the steam generators, and install and operate four (4) new 85.0 MMBtu/hr gas fired steam generators.

Berry intends to stage all construction and installation of the new steam generators at the 21Z Lease over an approximately 2-year period (2012 & 2013). The steam generators are necessary to produce steam for the TEOR operations. The location of the proposed steam generators is an existing disturbed area within the McKittrick Oil Field that has already been graded and prepared for support of existing operations. The site has two (2) vehicle access points that will remain in operation during and after installation of the steam generators. Existing paved employee and visitor vehicle parking areas will also be utilized.

### Ethel D Lease

The proposed Project would allow for continued oil and gas related activities to enhance oil recovery of current operations located within the administrative boundaries of the Midway Sunset Oil Field (see Figure 2). At this location BPC proposes to: modify a TEOR operation to allow TEOR waste gas and/or PUC gas to be burned in a new steam generator, add 225 new TEOR wells, and install and operate five (5) new 85 MMBTU gas fired steam generators.

The proposed steam generators will be located on existing disturbed areas within a mature oilfield that has already been graded and prepared in support of ongoing operations. Oil and gas well drilling operations will occur at various locations throughout the oil lease. The site has two (2) vehicle access points that will remain in operation during and after installation of the steam generators. Existing paved employee and visitor parking areas will also be utilized.

The steam generators are necessary to produce steam for existing and future TEOR operations, which includes the construction of up to 255 new wells. Berry intends to stage all construction, including construction of wells and installation of steam generators over a 5 ½ year period. The Ethel D Lease will be implemented using the approximate phasing schedule shown below in Table 1:



**Table 1: Ethel D Lease Construction Schedule**

Year	Wells		Total Wells/Year	Estimated # of Steam Generators
	Producers	Injectors		
2012	37	0	37	2
2013	28	12	40	2
2014	45	14	59	1
2015	43	11	54	0
2016	26	4	30	0
2017	35	0	35	0
<b>Total Wells</b>	<b>214</b>	<b>41</b>	<b>255</b>	<b>5</b>

### Project Construction

The Project will be constructed at two separate locations. As a result, the discussion below identifies the construction related activities taking place for the 21Z Lease site (McKittrick Oilfield) and the Ethel D Lease site (Midway Sunset Oilfield).

#### 21Z Lease

At this site, the Project includes the construction of four (4) 85.0 MMBtu/hr steam generators and supporting infrastructure needed for continued operations. Construction is expected to begin immediately upon issuance of District air permits in 2012, with full build-out expected to be reached in 2013. The new steam generators are in support of existing wells and wells that will be drilled utilizing existing permits and entitlements that were issued by the California Division of Oil, Gas, and Geothermal Resources (DOGGR).

The Project will be constructed by existing BPC staff and contracted workers. Also, the Project will be implemented utilizing existing roads and therefore, no new roads will be constructed. The majority of new pipelines (water, oil, gas, steam, etc.) will be installed at the Project site and will be above ground, although a minimal amount of underground pipelines may be necessary to support operations. During construction, exclusionary measures (i.e., exclusionary fencing) will be installed to prevent wildlife species from entering the construction area.

The steam generators will be sited in areas where there will be minimal "new" disturbance of soil, native vegetation, and habitat. Construction activities will include: site preparation, installation of four (4) steam generators, construction of infrastructure (pipeline above/below ground), worker commutes, and re-compaction of approximately



0.25 acres of previously disturbed soil within existing well pads. As discussed in Section G (Environmental Impact Checklist) of this document, with mitigation, environmental impacts from construction related activities will have a less than significant environmental impact.

#### Ethel D Lease

At this site, the Project includes the construction of five (5) 85.0 MMBtu/hr steam generators, supporting infrastructure and 255 TEOR wells. Construction of this Project will begin immediately upon issuance of District air permits in 2012, with full build-out expected to be reached by 2017 (see Table 1-Ethel D Lease Construction Schedule).

The Project will be constructed by existing BPC staff and contracted workers. Due to the maturity of this lease, all the wells and steam generators will be sited in areas where there will be no "new" disturbance of soil, native vegetation, and habitat. The oil and gas wells will be located on existing disturbed areas and adjusted to avoid any disturbance of habitat (as shown in Figure 2). Construction activities will include: site preparation, drilling activities, worker commutes, construction of infrastructure (pipeline above/below ground), extending existing electrical transmission lines, installation of five (5) steam generators, drilling and construction of 255 new wells.

Drilling operation for construction of new wells will be conducted 24 hours a day because of complexity, and the associated hazards of leaving a well that is in the process of being drilled, unattended. All drilling activities will occur on a well pad that has been constructed to support drilling the well. Drilling of the proposed 255 new wells is subject to approval by DOGGR. As discussed in Section G (Environmental Impact Checklist) of this document, with mitigation, environmental impacts from construction related activities will have a less than significant environmental impact.

#### Process Description

Steam is produced from steam generators and injected into the heavy crude oil bearing strata via injection wells to enhance oil extraction. Heat from the steam makes the heavy crude oil less viscous; therefore, easier to pump from the well. Gasses are also produced as a result of the steaming process, and include water vapor, CO<sub>2</sub>, CO, H<sub>2</sub>S, and hydrocarbons. These gasses are comingled with the fluids and sent downstream along with well production and separated in separator vessels or front-line processing tanks. Oil field equipment is expected to operate 24 hours/day and 365 days/year.

Well casings for the subject wells will be operated with closed casing vents. Liquid and gas from the wells will flow as a combined mixture to tanks under 99% vapor control. Pooled production will enter master trap vessels vented to a Hydrogen Sulfide (H<sub>2</sub>S) removal system, used as needed, and then to a field gas gathering line. An Automatic Well Test (AWT) vessel will receive production from one well at a time in a parallel track. The TEOR operation sends casing gas comingled with fluids to front-line tanks



and separator vessels equipped with vapor control where the gas is eventually incinerated in approved disposal devices.

Fugitive volatile organic compounds (VOCs) are emitted from the well casing collection and control systems due to leaking components. VOC emissions from the well casing collection system are controlled with  $\geq 99\%$  efficiency, in accordance with District Rule 4401 (Steam-Enhanced Crude Oil Production Wells). The vapor control consists of disposal of collected VOCs by incineration in approved devices downstream of the front-line tanks.

The proposed project would use a network of existing and new pipelines to transport oil, water, and steam. All new pipelines would be installed above ground and minimal underground pipelines may be necessary to support operations. However, all pipelines would be installed consistent with the existing network and standards.

**Project Location**

The Project is located in the vicinity of the communities of McKittrick and Maricopa in Kern County, California, which is in the San Joaquin Valley Air Basin (see Figure 3). Table 2 below identifies the specified locations in which the Project will be located. These locations are within the existing boundaries of BPCs existing 21Z Lease site and Ethel D Lease site.

**Table 2: Location of Proposed Project**

Site	Section	Township	Range	Assessor's Parcel Number
21Z Lease	21	30S	22E	157-110- (01, 08, 12, 20-22, 25-26)
Ethel D Lease	36	12N	24W	220-191-24

**General Plan Designation and Zoning**

The locations of the project described above (Table 2) are currently designated in the 2009 Kern County General Plan as Intensive Agriculture (Code 8.1), Mineral and Petroleum (Code 8.4) and is currently zoned as Exclusive Agriculture (Zone A). Pursuant to Section 19.12.020 (E) of the Zoning Ordinance of Kern County, steam generators (excluding coal fired, are a permitted use, by right, in Zone A.



### **Surrounding Land Uses and Setting**

The project is within BPC's existing Heavy Oil Western Stationary Source Facilities (21Z Lease & Ethel D Lease sites). Surrounding areas outside the boundaries of the project are used for agricultural and natural resource purposes.

The District has verified that the project site is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to the project.

### **Other Public Agencies Whose Approval Is Required**

#### **US Environmental Protection Agency (US EPA)**

The ATC application project can be classified as a Title V minor modification pursuant to Rule 2520 (Federally Mandated Operating Permits), Section 3.20, and can be processed with a Certificate of Conformity (COC). The COC must be submitted to the US EPA for a 45-day comment period. Berry Petroleum Company must apply to administratively amend the Title V operating permit to include the requirements of the ATCs issued with the Project.

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

DOGGR oversees the drilling, operation, maintenance, plugging and abandonment of oil, natural gas, and geothermal wells, and has approval authority over each TEOR and ancillary well. The DOGGR injection well permit review program requires consistency with the Safe Drinking Water Act's Underground Injection Control regulations for Class II injection wells. Under this program and others, the DOGGR will issue Permits to Drill (and program approval) for each well. Additional permits are required to "re-work" existing wells. Well abandonment does not require a permit, but notification to the DOGGR is required.

#### **California Department of Fish and Game (CDFG)**

The CDFG 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.

#### **Kern County Planning Department**

The proposed wells are permitted uses under the existing county land use designations and zoning. As such, applicable permits from the Kern County Planning and Building Department will be acquired prior to commencement of site work.



US Fish and Wildlife Service (USFWS)

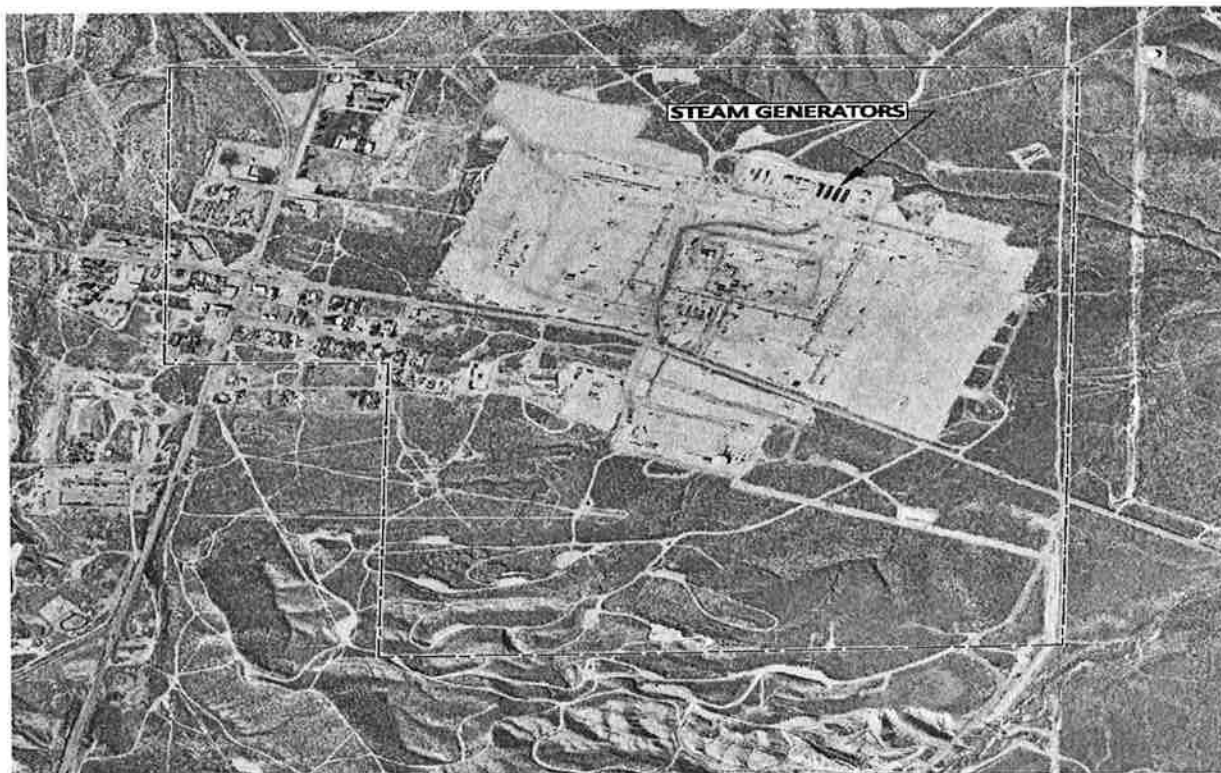
The USFWS has regulatory authority over projects that could result in the “take” of any species identified as threatened or endangered. If the Project would result in the incidental take of any federally identified species, an Incidental Take Permit and/or a Habitat Conservation Plan (HCP) would be required.

**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:

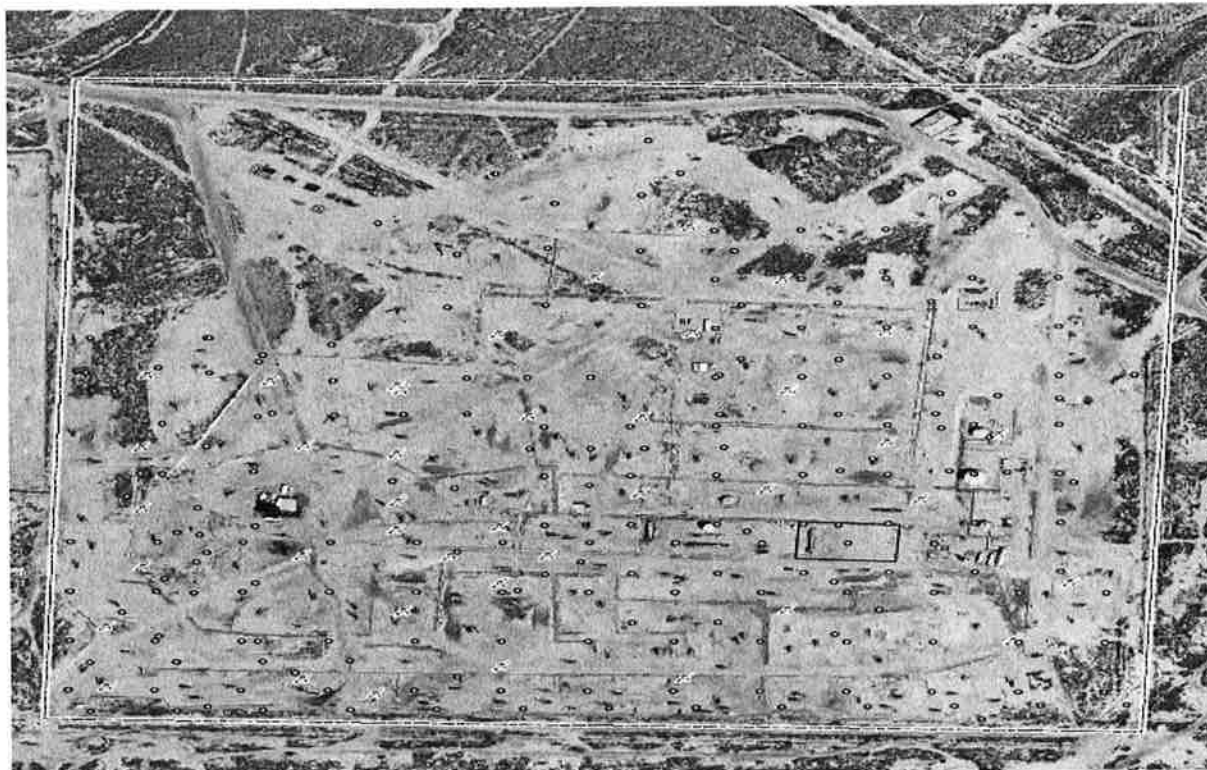
- District permit conditions and offset fees;
- Implementation of Best Performance Standards (BPS);
- Corrective actions to be taken to reduce impacts if species known to be protected are identified within the Project site; and
- Cessation of construction activities if cultural/archaeological remains are found.

**Figure 1: Location – 21 Z Lease (McKittrick Location)**

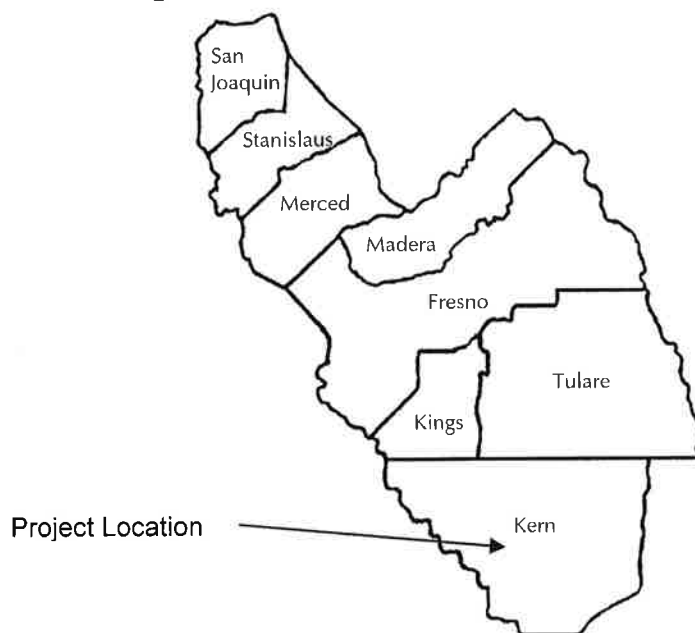




**Figure 2: Location – Ethel D Lease (Midway Sunset Location)**



**Figure 3: The San Joaquin Valley Air Basin**







**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: 10/02/2012

Printed name: David Warner

Title: Director of Permit Services





**G. Environmental Impact Checklist**

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

**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 is located on property currently occupied by BPC that historically and currently is allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

No scenic vistas or highways exist on the project site or on the properties adjacent to the project site. No scenic resources such as rock outcroppings, trees, or historic buildings exist on site. The absence of scenic vistas and other scenic resources on or near the project sites precludes the possibility of potential adverse impacts.

As new wells are drilled and completed, night lighting would be required on the drilling rigs. However, the proposed Project is a continuation of ongoing oil production activities and light emissions would be consistent with existing oil and gas exploration and production practices. As typical, all sources of light and glare will be directed towards project surfaces. Thus, the project would not create any new sources of substantial light or glare affecting day or nighttime views of the area.



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.

### **References**

California Department of Transportation. *Officially Designated State Scenic Highways*.  
Website: [www.dot.ca.gov/hq/LandArch/scenic/shwy.htm](http://www.dot.ca.gov/hq/LandArch/scenic/shwy.htm)

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b>II. <u>Agricultural Resources</u></b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<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>X</b>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				<b>X</b>
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))?				<b>X</b>
d) Result in the loss of forest land or conversion of forest land to non-forest use?				<b>X</b>
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?				<b>X</b>

**II. Agricultural Resources**

**Farm and Forest Lands (a-e)**

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

**Discussion:**

21Z Lease

The project site is located within the McKittrick Specific Plan area of Kern County and is designated Mineral and Petroleum (Code 8.4), Resource Management (Code 8.5) and



is zoned A-Agriculture. Pursuant to Section 19.12.020 (E) of the Zoning Ordinance of Kern County, steam generators (excluding coal fired) are a permitted use, by right.

#### Ethel D Lease

The project is designated Mineral and Petroleum (Code 8.4) within the Kern County General Plan, and is zoned A-Agriculture.

Both locations identified above are existing BPC oilfield sites which have continually been allowed for the exploration and production of oil. No Williamson Act contract is held for either site. In addition, the Project site is not designated as Prime Farmland, Unique Farmland, or of Statewide Importance. No forest lands are located on the Project site. The Project is consistent with current and surrounding land uses and will not convert farm or forest lands to non-farm or non-farm uses.

The District concludes that there is no substantial evidence of record to support a conclusion that construction and operation of the Project would have an impact on farms or forest lands.

**Mitigation:** None required.

#### References

California Department of Conservation. *Farmland Mapping & Monitoring Program*.  
Website: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Index.aspx>.

County of Kern. *2009 General Plan*. Website:  
<http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGP.pdf>.

County of Kern. *Kern County Online GIS Mapping*. Website:  
<http://www.co.kern.ca.us/gis/>.

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



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

**III. Air Quality**

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

**Discussion:** The Environmental Checklist Form (Appendix G) of the CEQA Guidelines provides that the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to determine if a project would:

1. Conflict with or obstruct implementation of the applicable air quality plan,
2. Violate any air quality standard or contribute substantially to an existing or projected air quality violation,
3. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under the applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors),
4. Expose sensitive receptors to substantial pollutant concentrations, or
5. Create objectionable odors affecting a substantial number of people.

The District's significance criteria and their application are summarized below.



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

The District is tasked with implementing programs and regulations required by the Federal Clean Air Act and the California Clean Air Act. In that capacity, the District has prepared plans to attain Federal and State ambient air quality standards.

The District has established thresholds of significance for criteria pollutant emissions, which are based on 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 District 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 to "Not conflict or obstruct implementation of the District's air quality plan".

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**

<b>Air Quality Thresholds of Significance – Criteria Pollutants</b>			
<b>Pollutant/Precursor</b>	<b>Construction Emissions</b>	<b>Operational Emissions</b>	
		Permitted Equipment and Activities	Non-Permitted Equipment and Activities
	<i>Emissions (tpy)</i>	<i>Emissions (tpy)</i>	<i>Emissions (tpy)</i>
CO	100	100	100
NO <sub>x</sub>	10	10	10
ROG	10	10	10
SO <sub>x</sub>	27	27	27
PM <sub>10</sub>	15	15	15
PM <sub>2.5</sub>	15	15	15



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**Violate any air quality standard or contribute substantially to an existing or projected air quality violation (b)?**

Determination of whether project emissions would violate any ambient air quality standard is largely a function of air quality dispersion modeling. If project emissions would not exceed State and Federal ambient air quality standards 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.

District Rule 2201 (New Source Review)

The general term, "stationary sources," refers to facilities that are subject to Air District air quality permitting. "Stationary source projects" are proposals that include, at least in part, equipment or activities that are subject to District air quality permitting. District Rule 2201(New Source Review) is a major component of the District's attainment strategy as it relates to growth. New Source Review (NSR) applies to new and modified stationary sources of air pollution. NSR provides mechanisms, including emission trade-offs, by which Authorities to Construct such sources may be granted, without interfering with the attainment of maintenance of Ambient Air Quality Standards. District implementation of NSR ensures that there is no net increase in emission above specified thresholds from new and modified Stationary Sources for all nonattainment pollutants and their precursors.

Under NSR, all new permitted sources (emission units) with emission increases exceeding two (2) pounds per day, for any criteria pollutant is required to implement best available control technology (BACT). As defined in District Rule 2201, BACT is:

The most stringent emission limitation or control technique of the following:

1. Achieved in practice for such category and class of source;
2. Contained in any State Implementation Plan approved by the Environmental Protection Agency for such category and class of source. A specific limitation or control technique shall not apply if the owner of the proposed emissions unit demonstrates to the satisfaction of the APCO that such a limitation or control technique is not presently achievable; or
3. Contained in an applicable federal New Source Performance Standard; or
4. Any other emission limitation or control technique including process and equipment changes of basic or control equipment found by the APCO to be cost effective and technologically feasible for such class or category of sources or for a specific source.

Operational Emissions – Permitted Equipment and Activities

Compliance with NSR requirements ensures that emissions of criteria pollutants from permitted equipment and permitted activities at a stationary source are reduced or



mitigated to below the District's thresholds of significance and would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

*Operational Emissions – Non-Permitted equipment and activities*

The District recommends that an ambient air quality analysis be performed for all pollutants, when on-site emissions of any criteria pollutant from non-permitted operational activities would equal or exceed any applicable Threshold of Significance for criteria pollutants, or 100 pounds per day of any criteria pollutant, after implementation of all enforceable mitigation measures. If such modeling is found necessary, the analysis is to include emission from both project specific permitted and non-permitted equipment and activities.

*Construction Emissions*

The District recommends that an ambient air quality analysis be performed for all pollutants, when on-site emissions of any criteria pollutant from construction activities would equal or exceed any applicable Threshold of Significance for criteria pollutants, or 100 pounds per day of any criteria pollutant, after implementation of all enforceable mitigation measures.

***Result in a cumulatively considerable net increase of any criteria pollutant (c)?***

CEQA defines cumulative impacts as two or more individual effects which, when considered together, are either significant or "cumulatively considerable", meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

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 ambient air quality standards 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.

A lead agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located [CCR §15064 (h)(1)]. Thus, if project specific emissions





would be 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 non-attainment under applicable Federal or State ambient air quality standards.

**Expose sensitive receptors to substantial pollutant concentrations (d)?**

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 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).

**Create objectionable odors affecting a substantial number of people (e)?**

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.

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 three (3) confirmed complaints per year averaged over a three-year period.

**Project Details and Significance Determination**

**Project Details**

The Project will allow for continued oil and gas related activities and the development of wells and infrastructure necessary to enhance oil recovery within the current operations of BPC. As such, BPC proposes to install and operate nine (9) 85.0 MMBtu/hr steam generators and 255 TEOR wells within their existing 21Z Lease and Ethel D Lease sites.

Four (4) 85.0 MMBtu/hr steam generators will be located at the existing and currently operating BPC 21Z Lease and one (1) 85.0 MMBtu/hr steam generator will be located at the BPC Ethel D Lease. Construction is expected to begin immediately upon issuance of District air permits in 2012, with full build-out expected to be reached in 2013. In the future, BPC plans to install an additional four (4) 85.0 MMBtu/hr gas fired steam



generators and add 255 thermally enhanced oil recovery (TEOR) wells within the Ethel D Lease site. Construction of this project will occur over a 5 ½ year period.

### **Construction Emissions**

Construction of the Project is expected to begin immediately upon issuance of District air permits in 2012, with full build-out expected to occur by 2017. As such, construction details for each site are demonstrated below.

#### **21Z Lease**

The steam generators will be sited in areas where there will be minimal “new” disturbance of soil, native vegetation, and habitat. Construction activities include: site preparation, installation of four (4) steam generators, construction of infrastructure (pipeline above/below ground), worker commutes, and re-compaction of approximately 0.25 acres of previously disturbed soil within existing well pads.

#### **Ethel D Lease**

The steam generators will be sited in areas where there will be no “new” disturbance of soil, native vegetation, and habitat. The oil and gas wells will be located on existing disturbed areas and adjusted to avoid any disturbance of habitat. Construction activities include: site preparation, drilling activities, worker commutes, construction of infrastructure (pipeline above/below ground), extending existing electrical transmission lines, installation of five (5) steam generators, drilling and construction of 255 new wells.

As demonstrated in Table 4, construction related emissions do not exceed the District’s thresholds of significance. The District concludes that Project related construction emissions will have a less than significant impact on air quality and therefore, mitigation measures are not required.



**Table 4: Project Construction Emissions**

Pollutant	ROG	CO	NOx	PM10	PM2.5	CO2
<b>SJVAPCD Thresholds of Significance</b>	<b>10</b>	<b>100</b>	<b>10</b>	<b>15</b>	<b>15</b>	<b>n/a</b>
2012 Construction Year	0.61	2.85	7.33	0.57	0.26	1024.39
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
2013 Construction Year	0.61	2.83	7.26	0.56	0.25	1100.44
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
2014 Construction Year	0.76	4.71	8.89	0.74	0.43	1520.99
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
2015 Construction Year	0.73	3.18	7.16	0.62	0.32	1371.09
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
2016 Construction Year	0.31	1.67	3.64	0.41	0.21	763.73
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
2017 Construction Year	0.41	1.95	3.93	0.40	0.20	886.89
<i>Exceed Threshold?</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>n/a</i>
<b>Note:</b> Detailed calculations for Construction Emissions can be found upon request in Appendix A.						

**Operational Emissions – Permitted Equipment and Activities**

As previously discussed, the project proponent proposes to install and operate a total of nine steam generators over the course of five years. The District has received Authority to Construct (ATC) applications for five steam generators that will be constructed within the next two years. Approved ATCs are valid for a period of two years. Thus, the project proponent will submit ATC applications for the remaining four steam generators consistent with the proposed construction schedule identified above.

The District has conducted engineering evaluations, incorporated herein by reference, for the first five steam generators. BACT is triggered for NOx, SOx, PM<sub>10</sub>, CO and VOC



emissions. The facility is an existing Major Source and consistent with New Source Review requirements, increases in permitted emissions are fully mitigated through surrendering offsets. The District has imposed permit conditions consistent with New Source Review requirements.

As presented in Tables 5 - 8, offsets are required and emission increases will be mitigated at a ratio of 1 to 1.5. Emissions from these steam generators are representative of emissions from the four steam generators that will be constructed and operated in the future. Emissions from future generators will also be reduced and fully mitigated through compliance with New Source Review requirements. Thus, the District concludes that through a combination of project design features and permit conditions, project related stationary source operational emissions will have a less than significant impact on air quality.

Table 5: Stationary Source Increase in Permitted Emissions - Project No. S-1111129

Pollutant	Increase in Emissions (lb/year)	Required Offsets (lb/yr)	Significant after Mitigation?
NOx	5,957	8,936	No
SOx	3,723	5,585	No
PM <sub>10</sub>	3,723	5,585	No
CO	19,360	NA	No
VOC	4,095	6,143	No

Table 6: Stationary Source Increase in Permitted Emissions - Project No. S-1111510

Pollutant	Increase in Emissions (lb/year)	Required Offsets (lb/yr)	Significant after Mitigation?
NOx	5,957	8,936	No
SOx	3,723	5,585	No
PM <sub>10</sub>	3,723	5,585	No
CO	19,360	NA	No
VOC	4,095	6,143	No

Table 7: Stationary Source Increase in Permitted Emissions - Project No. S-1111901<sup>1</sup>

Pollutant	Increase in Emissions (lb/year)	Required Offsets (lb/yr)	Significant after Mitigation?
NOx	11,914	17,872	No
SOx	7,446	11,170	No
PM <sub>10</sub>	7,446	11,170	No
CO	38,720	NA	No
VOC	8,190	12,286	No

<sup>1</sup> Project S-1111901 includes two steam generators



Table 8: Stationary Source Increase in Permitted Emissions - Project No. S-1111928

Pollutant	Increase in Emissions (lb/year)	Required Offsets (lb/yr)	Significant after Mitigation?
NOx	5,957	8,936	No
SOx	4,989	7,484	No
PM <sub>10</sub>	3,723	5,585	No
CO	19,360	NA	No
VOC	4,095	6,143	No

**Operational Emissions – Non-Permitted Equipment and Activities**

The major source of emissions from non-permitted equipment and activities is associated with mobile sources. The Project will be maintained and manned by existing BPC personnel and contractors. Therefore, the Project will not result in new mobile source emissions.

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

**Conclusion:** Impact is less than significant, with mitigation.

**Discussion:** As summarized in Table 4, project related construction emissions are below the District’s Thresholds of Significance. Also, as demonstrated in Tables 5 thru 8, operational emissions will be reduced to less than significant through compliance with District permitting requirements, including surrendering emission offsets. 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).

- ❖ **Mitigation:** AIR-1 – BPC shall comply with all District permitting requirements, including surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements.



**Violate any air quality standard or contribute substantially to an existing or projected air quality violation (b)?**

**Conclusion:** Impact is less than significant, with mitigation.

**Discussion:** Rule 2201 (New Source Review), section 4.14 requires an ambient air quality analysis (AAQA) be conducted for the purpose of determining whether a new or modified Stationary Source will cause or make worse a violation of an air quality standard. Technical Services Division performed modeling for criteria pollutants CO, NO<sub>x</sub>, SO<sub>x</sub> and PM<sub>10</sub>, incorporated herein by reference. The results demonstrate that project specific emissions would not violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- ❖ **Mitigation:** AIR-1 – BPC shall comply with all District permitting requirements, including surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements.

**Result in a cumulatively considerable net increase of any criteria pollutant (c)?**

**Conclusion:** Impact is less than significant, with mitigation.

**Discussion:** Compliance with District permitting requirements, including surrender Emission Reduction Credits to offset project emissions ensures that project specific emissions of criteria pollutants reduce and mitigated to levels below the District's thresholds of significance. Therefore, project related emissions would have a less than significant cumulative impact on air quality.

- ❖ **Mitigation:** AIR-1 – BPC shall comply with all District permitting requirements, including surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements.

**Expose sensitive receptors to substantial pollutant concentrations (d)?**

**Conclusion:** Impact is less than significant, with mitigation.

**Discussion:** Consistent with New Source Review requirements, the District performed a Risk Management Review (RMR) analysis, incorporated herein by reference. The RMR demonstrates that the highest prioritization score associated with the Project is greater than one (1). Consequently, the District requires implementation of Toxic Best Available Technology (T-BACT) as a condition of project approval. As presented in the District's engineering evaluation, implementing T-BACT will reduce project related health impacts to less than significant. The acute and chronic hazard indices are below 1.0 and the cancer exposure risk for the facility is less than ten (10) in a million. Therefore, no further analysis is required. Furthermore, potentially hazardous materials are not expected to be associated with the Project sites.



- ❖ **Mitigation: AIR-1** – BPC shall comply with all District permitting requirements, including surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements.

**Create objectionable odors affecting a substantial number of people?(e)**

**Conclusion:** Impact is less than significant.

**Discussion:** 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, diesel exhaust from construction activities is not expected to affect a substantial number of people.

A review of the District's compliance compliant database revealed that there have been two (2) un-confirmed complaints received against BPCs operations. The most recent un-confirmed complaint was received in June of 2005. Since then, the District has not received odor complaints in regards to BPC operations. 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**

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.

San Joaquin Valley Unified Air Pollution Control District. *Authority to Construct: Application Review, Applicant No. S-1246, Project No. S-1111129, S-1111510, S-1111901, S-1111928*. Available at San Joaquin Valley Air Pollution Control District. 1990 East Gettysburg Avenue, Fresno, CA 93726.





<b><u>IV. Biological Resources</u></b>		<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
Would the Project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Game or US Fish and Wildlife Service?				X
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

**IV. Biological Resources**

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:** A list of special-status species was evaluated and updated during preparation of a Biological Reconnaissance Survey Result report (MBI Survey Report) prepared by McCormick Biological, Inc. (MBI) (dated June 1, 2012, Appendix C) for the



Project. The list was then evaluated based on site characteristics and observations to assess the potential for occurrence of the special-status species that were included. MBI utilized the following sources: 1) pertinent literature; 2) the USFWS list of “Federal Endangered and Threatened Species that may be Affected” within the 7.5 minute USGS quadrangle of the project site; and 3) the CDFG Natural Diversity Data Base (CNDDDB) in compiling the list. MBI staff reviewed these lists and other pertinent information, including available literature, to complete the list of species evaluated.

A site visit was conducted on April 28, 2012, by McCormick Biological personnel to assess the potential for impacts to listed species within the Project area. Within the MBI Survey Report, the term “project site” is used to refer to the construction footprint (area of disturbance) for the proposed Project. The “project area” includes the project sites along with surrounding lands, outside, but adjacent to the project site. The term “project vicinity” is used in the MBI Survey Report to describe the broader, landscape context. Therefore, with respect to the Biological resources, these terms will also be used. During the site visit, direct observations of special-status wildlife species, important habitat elements for special-status species, and “sign” (scat, tracks, tail drags, burrs, dens, etc.) were noted if encountered. All plant and wildlife taxa observed during the survey were identified by MBI.

#### Impacts Related to Habitat Disturbance

Installation of the generators on 21Z Lease site will not result in habitat disturbance. All proposed generator sites will be constructed within an existing graded, unvegetated well pad area.

Grading and disturbance associated with the Project activities at Ethel D Lease site will occur entirely within the previously disturbed, highly impacted portions of the project site. As such, the proposed project activities will not result in habitat disturbance within the Ethel D Lease.

#### Impacts to Plant Species

Approximately twenty-one (21) Special Status plant species have the potential to occur within the Project area. However, no Special-Status plant species were detected either on the 21Z Lease or the Ethel D Lease during surveys. Installation of generators on the 21Z will not result in impacts to any listed plant species. All proposed generator sites will be constructed within the existing graded, unvegetated well pad area.

The remaining habitat at the Ethel D Lease represents suitable habitat for several of the non-listed species including heartscale (*Atriplex cordulata*), Lost Hills crownscale (*Atriplex coronate* var. *vallicola*), Lemmon's jewelflower (*Caulanthus lemmonii*), recurved larkspur (*Delphinium recurvatum*), Tejon poppy (*Eschscholzia lemmonii* ssp. *Kernensis*), showy golden madia (*Madia radiata*) and oil neststraw (*Stylocline citroleum*). However, based on current and historic impacts from oil production in the project area and the generally low quality of the habitat remaining on the site, these species are unlikely to occur.



The Ethel D Lease represents marginal habitat for Horn's milk vetch (*Astragalus hornii* var *hornii*), lesser saltscare (*Atriplex minuscula*), round-leaved filaree (*California macrophylla*), Temblor buckwheat (*Eriogonum temblorense*), stinkbells (*Fritillaria agrestis*), Munz's tidy tips (*Layia munzii*), and Jared's peppergrass (*Lepidium jaredii* ssp. *Jaredii*). The determination of marginal suitability is based on typical habitat characteristics at known sites not being present and/or that the project site is near the range or elevation limits published for the species. Based on these considerations, current conditions, and historic impacts observed in the project area, these species are extremely unlikely to occur on the project site.

Installation of the generators on the Ethel D Lease will not result to any listed plant species. All proposed generators and well construction will be sited in areas that will avoid candidate, sensitive, and special status plan species.

Due to the current conditions and historic disturbance in the project areas, impacts to special-status plant species are not anticipated. However, a new mitigation measure is added to provide for conducting special-status plant surveys and avoidance for the portions of the Ethel D Lease Site in contiguous habitat along the edges of the project boundary if pre-construction surveys result in identification of habitat that could support the potentially occurring species. (Refer to Mitigation Measure BIO-23)

#### Impacts to Wildlife Species

Wildlife species include birds, reptiles, amphibians and mammals. There are four federal and/or state listed wildlife species known to occur within the Project area or within the Project vicinity. These four species are: blunt-nosed leopard lizard, California condor, San Joaquin antelope squirrel and San Joaquin kit fox. Potential impacts to these species are discussed in the following paragraphs.

*Blunt-Nosed Leopard Lizard:* Blunt-nosed leopard lizards (BNLL) are a species that is Fully Protected under the California Fish and Game Code. Current law does not allow for "take" of this species, under any circumstances. No endangered species act permit can allow the take of this species.

Because the 21Z Lease is significantly disturbed, it does not represent potential blunt-nosed leopard lizard habitat. Blunt-nosed leopard lizard surveys are currently being conducted in the surrounding area. Given the intensity of the existing disturbance and distance to areas that are known to be occupied by this species, it is unlikely that the area surrounding the 21Z Lease is currently occupied by BNLL, therefore, impacts to this species are not anticipated.

The MBI Survey Report indicated that BNLL surveys conducted along the northwestern edge of the Ethel D Lease and into the northwest  $\frac{1}{4}$  of Section 36 adjacent to the lease were negative during surveys conducted in 2011. Based on these results, MBI concluded that there is a low likelihood that the site is currently occupied.



The MBI Survey Report indicated that from season to season, BNLL may occupy different areas, especially if contiguous habitat is present connecting known occupied sites to unoccupied sites. In addition, it is indicated that population levels may fluctuate from year to year depending on conditions. For these reasons, CDFG requires that surveys following the recommended protocol be conducted within one year of project commencement for projects involving disturbance of potential habitat for this species. Therefore, Mitigation Measures recommending that BNLL surveys be conducted if habitat impacts cannot be avoided are provided.

*California Condor:* The MBI Survey Report indicated that because the Bitter Creek National Wildlife Refuge is approximately eight (8) miles south of the Ethel D project site and the expansive areas frequented by foraging California condors, this species could occasionally forage in the vicinity of both the 21Z and Ethel D Leases. California condors could be subject to impacts if carrion were presented that would attract foraging individuals. Individuals could be impacted by power lines, microtrash and through ingestion of harmful liquids. Therefore, Mitigation Measures specifically for the protection of California condors are provided.

*San Joaquin Antelope Squirrel and San Joaquin Kit Fox:* No San Joaquin antelope squirrels or San Joaquin kit foxes have been detected on the Project sites. However, the San Joaquin antelope squirrel and San Joaquin kit foxes could be present in the vicinity. As a result, with the implementation of appropriate avoidance measures, direct impacts to these species should not occur as a result of project activities (Refer to Mitigation Measure BIO-2).

The Project sites represent potential habitat for the burrowing owl and several other resident and migratory special-status bird species. In addition, loggerhead shrike and LeConte's thrasher were observed foraging on the Project sites. The Project would result in a loss of a relatively small amount of foraging habitat for these species. Should any of them be nesting on the site during construction activities, disturbance to nest sites including destruction and injury or mortality of eggs and/or young could occur. Mitigation Measure BIO 2-20 is intended to avoid impacts to nesting birds and mitigate loss of habitat for these species.

The MBI Survey Report indicated that a small number of individual short-nosed kangaroo rats and Tulare grasshopper mouse may be affected by project activities at the Ethel D Lease, however, the Project would not be expected to result in significant impacts to these species. Mitigation Measure BIO-2 is intended to minimize impacts to listed species and would mitigate impacts to these species to levels that are insignificant.

**Mitigation:** See below.

- ❖ **BIO-1** – Blunt-nosed leopard lizard surveys following current CDFG guidelines shall be completed no more than one year prior to initiation of project if construction



activities will impact potential habitat for the species. Potential habitat includes areas that have not been previously disturbed or that have recovered to support vegetation and small mammal burrows that represent potential shelter for blunt-nosed leopard lizard. If at any time blunt-nosed leopard lizards are observed during these surveys, no disturbance of areas that could be occupied by this species should occur within 500 feet of the observation without prior approval from CDFG and USFWS.

- ❖ **BIO-2** – A qualified biologist acceptable to the USFWS and the CDFG shall be hired to conduct a biological resources survey between 30 and 60 days prior to any ground disturbance in areas subject to development to determine whether any San Joaquin antelope squirrels, potential or known San Joaquin kit fox dens or other evidence of special status species (for example, burrowing owl) are present or have subsequently been established. The survey shall be conducted under conditions considered appropriate for detection of San Joaquin antelope squirrel. These conditions include temperature of at least 60°F and no more than 80 percent cloud cover. Surveys for this species should not be conducted under foggy or rainy conditions. This survey will be used as a basis for implementation of avoidance and minimization measures for covered and other special-status species. Dens and burrows identified during the survey shall be flagged for avoidance as described below. The disposition of San Joaquin kit fox dens shall be according to USFWS guidelines (1999) or pursuant to requirements of applicable project permits. *(Please note that the USFWS reissued their recommendations in January 2011, therefore the most recent version should be used).*

For San Joaquin kit fox dens or San Joaquin antelope squirrel burrows within 200 feet of the construction area, avoidance zones shall be identified by wooden or metal stakes connected by flagging or by other similar fencing material. Each avoidance zone shall have the following distance measured outward from the den or burrow entrances or the edge of the plant population.

Potential kit fox den	50 ft
Known kit fox den	100 ft
Kit fox pupping den (occupied or unoccupied)	Contact CDFG and
USFWS Atypical kit fox den	50 ft
San Joaquin antelope squirrel	50 ft

- Avoidance zones shall be maintained until all construction activities have been completed, and then shall be removed by a qualified biologist.
- If dens or nest burrows are located outside of the construction area but within the avoidance zone designated for the resource type (listed above), the boundary of the avoidance zone shall be drawn to include all areas within the radius stated above, except those falling within the construction area. If the construction area encroaches on an avoidance area, potential dens shall not be excavated unless a



qualified biologist determines that excavation is absolutely necessary. Potential kit fox dens shall be monitored until they can be shown to be unoccupied based on the procedures outlined in "U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance" (USFWS 1999), and then covered with plywood that is firmly secured to prevent access by kit foxes during project activities. The covers shall not be installed more than 14 days prior to the start of construction. The covers shall remain in place for the duration of construction, after which time they shall be removed. *(Please note that the USFWS reissued their recommendations in January 2011, therefore the most recent version should be used).*

- If avoidance of any potential kit fox den within the project site is not practicable, and the den may be unavoidably damaged or destroyed by project actions, the following procedure shall be implemented. Prior to surface-disturbing activities, any such potential kit fox den shall be completely excavated and then backfilled to preclude later use by kit foxes during the construction period. If, at any time during monitoring or excavation, any sign that the den may be or has been occupied is found, the den's status changes to "known".
- Potential kit fox dens may be excavated provided that the following conditions are satisfied: (1) the den classification is determined by a qualified wildlife biologist; and (2) the excavation is conducted by or under the direct supervision of a qualified wildlife biologist.
- Dens identified by a qualified biologist as either a "known" den or as a "suspected" pupping den shall not be excavated unless the appropriate California Endangered Species Act (CESA) and Federal Endangered Species Act permits authorized such excavations. In addition, any occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated.

If San Joaquin antelope squirrel burrows cannot be avoided, no project activities shall occur until the appropriate CESA permit has been issued by CDFG. The following measures to minimize and mitigate for impacts to San Joaquin antelope squirrel would be the minimum:

- San Joaquin antelope squirrel burrows will be avoided to the maximum extent practicable.
- If occupied San Joaquin antelope squirrel burrows cannot be avoided, a trapping effort will be conducted by a properly permitted wildlife biologist for the purpose of either relocation or holding and releasing individuals back into temporarily disturbed portions of the project site.
- CDFG will be provided with a notification at least 30 days prior to trapping and relocation with a plan that includes at least the following information: 1) approximate number of San Joaquin antelope squirrels



to be affected; 2) previous experience of the wildlife biologist conducting the trapping and relocation; 3) description of trapping effort; 4) description of relocation plans; 5) whether individuals will be temporarily held for release; 6) off-site release locations; 7) artificial burrow placement; and 8) proposed results reporting schedule. If CDFG does not respond within 30 days of receiving the notification, trapping and relocation will proceed as stated in the notification. San Joaquin antelope squirrels should not be relocated greater than 500 feet from capture location without prior approval from CDFG.

- ❖ **BIO-3** – All employees, contractors, or other persons involved in the construction of the project shall attend a biological resource worker orientation program informing them of the biological resource protection measures which will be implemented for the project. The orientation shall be conducted by a qualified biologist and shall include information regarding the life history of the protected species and other special-status species that may be encountered, reasons for special status, a summary of applicable environmental law, and measures intended to reduce impacts. Training shall be completed the first day of work on the job site for workers, supervisors, contractors, etc. The program shall consist of a briefing of biological resource issues relative to the project including an explanation of endangered species concerns to contractors, their employees, and other personnel involved in the project. In addition, the program shall include a discussion of listed species biology, the habitat and needs of these species, their occurrence in the project vicinity, their status under the FESA and CESA, and their habitats during project activities. Similar but brief information shall also be provided for all other sensitive species that are found on the project site. Upon completion of the orientation, employees should sign a form stating that they attended the program and understand all biological resource mitigation measures. These forms shall be filed at the applicant's office and shall be accessible to USFWS and CDFG staff.
- ❖ **BIO-4** – The limits of project site grading should be clearly delineated prior to construction activities by posting stakes, flags and/or rope or cord, as necessary.
- ❖ **BIO-5** – Traffic restraints and signs shall be established and issued to minimize temporary disturbances. All project-related vehicle traffic shall be restricted to established roads, designated access roads and routes, project site, storage areas, and staging and parking areas. Off-road traffic outside designated project boundaries shall be prohibited. A 20 mph speed limit shall be observed in all other project areas, except on county roads and state and federal highways.
- ❖ **BIO-6** – All equipment storage and parking during project activities shall be confined to the designated construction area or to previously disturbed offsite areas that are not habitat for listed species.



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- ❖ **BIO-7** – All project activities involving excavation or surface disturbance shall be limited to daylight hours.
  - ❖ **BIO-8** – To prevent entrapment of listed species or other animals, all excavated, steep-walled holes or trenches more than 2 feet deep shall either be covered at the close of each working day by plywood or provided with one or more escape ramps constructed of earth fill or wooden planks. The ramps shall be located at no greater than 1,000-foot intervals and shall be sloped less than 45 degrees. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the CDFG and USFWS shall be contacted for advice.
  - ❖ **BIO-9** – Trenches shall be inspected for entrapped wildlife each morning prior to the onset of construction. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before construction activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.
  - ❖ **BIO-10** – All construction pipes, poles, culverts, hoses or similar structures stored at the construction site for one or more overnight periods shall be capped or the ends covered in a way that prevents wildlife entrapment. Unburied pipes laid in trenches overnight shall be capped. If a kit fox or other listed species is discovered inside a pipe, that section of pipe will not be moved until the CDFG and USFWS have been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved only once to remove it from the path of project activity, until the animal has escaped.
  - ❖ **BIO-11** – All food-related trash items such as wrappers, cans, bottles and food scraps generated by project activities shall be disposed of in closed containers and removed at least once each week from the site. Deliberate feeding of wildlife is prohibited.
  - ❖ **BIO-12** – No firearms or pets should be allowed on the project site.
  - ❖ **BIO-13** – All equipment and work-related materials shall be contained in closed containers either in the work area or on vehicles. Loose items (e.g. rags, hose, etc.) shall be stored within closed containers or enclosed in vehicles when on the work site.
  - ❖ **BIO-14** – All liquids shall be in closed, covered containers. Any spills of hazardous liquids shall not be left unattended until clean-up has been completed.





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- ❖ **BIO-15** – Use of rodenticides and herbicides on the project site shall be minimized. This is necessary to prevent primary or secondary poisoning of endangered species using adjacent habitats, and to avoid the depletion of prey upon which they depend. Label restrictions and other restrictions imposed by the U.S. Environmental Protection Agency (EPA), the California Department of Food and Agriculture (CDFA), and other state and federal legislation shall be implemented. If rodent control must be conducted, zinc phosphide shall be used because of its proven lower risk to kit foxes.
  - ❖ **BIO-16** – CDFG and the USFWS shall be contacted after taking appropriate action regarding emergency response in the event of an emergency on the project, which has the potential to affect listed species. During subsequent activities related to the emergency, the CDFG and/or USFWS may require additional biological resource protection measures.
  - ❖ **BIO-17** – Any employee who inadvertently kills or injures a listed species, or who finds any such animal dead, injured, or entrapped shall be required to report the incident immediately to the Site representative (except animals killed on state and county roads when such mortality is not associated with project traffic). In the case of entrapped animals that are listed species, escape ramps or structures shall be installed immediately if possible to allow the subject animal(s) to escape unimpeded.
  - ❖ **BIO-18** – In the case of injured animals, the CDFG shall be notified immediately. During business hours Monday through Friday, the phone number is (559) 243-4017. For non-business hours, report to (800) 952-5400. Notification shall include the date, time location, and circumstances of the incident. Instructions provided by the CDFG for the care of the injured animal shall be followed by the Contractor onsite.
  - ❖ **BIO-19** – In the case of dead animal(s) that are listed as threatened or endangered, the USFWS and the CDFG shall be immediately (within 24 hours) notified by phone or in person and shall document the initial notification in writing within two working days of the findings of any such animal(s). Notification shall include the date, time, location and circumstances of the incident.
  - ❖ **BIO-20** – If vegetation clearing is conducted between February 1 and August 31, a survey targeting identification of nesting birds shall be conducted. This survey may be conducted in conjunction with the pre-activity survey. If any nesting birds covered by the Migratory Bird Treaty Act are identified, nests shall be avoided by an appropriate distance such that nesting activities are not interrupted until the young have fledged. Determination of when young have fledged from active nests will be determined by a qualified biologist. If any nesting birds are found during vegetation clearing activities, a qualified biologist shall be contacted to determine appropriate avoidance measures. If any burrowing owl burrows are observed, avoidance measures should be consistent with those included in CDFG (2012) “staff report on



burrowing owl mitigation,” taking into account existing disturbances such as roads and structures. Absolutely no disturbance to active nests shall occur without a permit pursuant to the Migratory Bird Treaty Act. . For nesting and breeding birds, a 250 foot buffer distance shall apply for active nests discovered and buffers shall be delineated around active nests until breeding season has ended.

- ❖ **BIO-21** – All power poles and electrical facilities should be designed to minimize the potential for electrocution of migratory and resident birds, including consideration of birds with a wingspan of up to 9 feet.
- ❖ **BIO-22** – Additional measures intended specifically to minimize the potential for impacts to California condors during construction and operation of the project include the following:
  - The project site should be inspected by Berry Petroleum once per week for “microtrash” items that may be picked up by California condors. All items of microtrash shall be disposed of in closed containers and regularly removed from the project site.
  - All equipment and work-related materials should be confined in closed containers either in the work area or on vehicles. Loose items (e.g., rags, hose, etc.) should be covered, stored within closed containers, or enclosed in vehicles except while being used for a work task. Covers should be materials that are not an attractant to California condors.
  - All liquids should be in closed, covered containers. Any spills of hydrocarbons or hazardous liquids should not be left unattended until clean-up has been completed.
  - Any observations or encounters with California condors shall be recorded and reported by Berry Petroleum to CDFG and USFWS within two business days. Any “take” of California condor should be reported to CDFG and USFWS immediately.
- ❖ **BIO-23** – Surveys for special-status plant species and avoidance will be conducted for the portions of the Ethel D Lease Site in contiguous habitat along the edges of the project boundary if pre-construction surveys result in identification of habitat that could support potentially occurring species.

Riparian Habitats, Sensitive Natural Communities (b)

**Conclusion:** The Project will not have an impact on any riparian habitat or a sensitive natural community.

**Discussion:** Based on the results of the MBI Survey Report, the Project does not contain any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and



Game or U.S. Fish and Wildlife Service. Therefore, the Project will have no impact on any riparian habitat or a sensitive natural community.

**Mitigation:** None required.

Wetlands (c)

**Conclusion:** The Project will have no impact on any federally protected wetland.

**Discussion:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

The Project does not contain any federally protected wetlands as defined by Section 404 of the Clean Water Act or purpose to remove, fill, or hydrologically interrupt any water body. Therefore, the Project will have no impact on any federally protected wetland.

**Mitigation:** None required.

Native Species, Migratory Fish, Wildlife Species, Native Residents, Migratory Wildlife Species or Impede Native Wildlife Nursery Sites (d)

**Conclusion:** The Project will not interfere 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.

**Discussion:** The MBI Survey Report indicates, the importance of habitat connectivity, and corridors that facilitate this connectivity, is well documented and generally accepted. Habitat connectivity is maintained through a network of habitat linkages and wildlife movement corridors. Habitat linkages are defined as areas that provide a spatial link between two habitats. Wildlife movement corridors are areas defined by wildlife use for movement events on varying scales (e.g., daily foraging, seasonal migration, or dispersal).

As stated in the MBI Survey Report, the project sites are located along the western edge of the San Joaquin Valley adjacent to the foothills of the Coast Range. These foothills represent one of the few contiguous areas of natural habitat for many central San Joaquin Valley species and contain identified wildlife movement corridors.

Although both the 21Z and Ethel D Leases are located within the vicinity of natural habitat and identified wildlife movement corridors, these existing sites are in existing areas of high density oil production. Based on the Project description, additional impacts to potential habitat are not expected to occur through project activities. Therefore,



habitat connectivity in the project area will not be affected by the Project activities. In addition, the Project activities will not preclude wide-ranging species, such as the San Joaquin Kit Fox from moving through the project sites.

Therefore, the District concludes that the Project will not interfere 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.

**Mitigation:** None required.

Local Policies/Ordinances Protecting Biological Resources, Conflict with an adopted Habitat Conservation Plan, Approved Local, Regional, or State Habitat Conservation Plan (e, f)

**Conclusion:** The Project will not conflict with the provisions of any Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional or state habitat conservation plan.

**Discussion:** There are no local policies, ordinances, or tree preservation policies, which would be affected by the Project. The Kern County General Plan contains policies for the protection of oak woodlands and large oak trees by requiring that development avoid the area beneath and within the tree's altered drip line, however, there are no oak trees on either the 21Z Lease or Ethel D Lease. As such, the Project would not conflict with this tree preservation policy.

The Project is consistent with all adopted policies and ordinances established for the protection of biological resources. There is currently no adopted Natural Community Conservation Plan which includes the project. Kern County prepared a draft Kern County Floor Habitat Conservation Plan (KVFHCP), which contains policies and guidelines for the protection of biological resources. Although the KVFHCP has not currently been adopted, the Project does not proposed actions or plans which would conflict with those considered in the draft KVFHCP. As there are no other existing or planned policies, ordinances, plans applicable to the Project, the Project will not conflict with the provisions of any plans, policies or ordinances.

### **References**

McCormick Biological, Inc. *Biological Reconnaissance Survey Results for Berry Petroleum Facility S-1246 Project*. June 2012.

Quad Knopf, *Authority to Construct Permit Application and Supporting Information & Correspondence*. May and June 2012.



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

**V. Cultural Resources**

Historical Resources (a)

**Conclusion:** The Project will not have an impact on historical resources.

**Discussion:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

A query of state and federal registers indicated that there are no registered historic resources within the Ethel D Lease site. However, a query of state and federal registers indicated a state landmark located within the 21Z Lease site. The state landmark is defined as *California Oil Well 1*. This landmark was registered on November 7, 1941 and was one of the early wells in the year of 1899 that started the oil field, pumping approximately 150 barrels of oil per day for the first six (6) months. Last production of the well was in April of 1929.

Since the proposed Project is within existing, disturbed and operating oil production fields consistent with current and surrounding land uses, 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 required.



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

**Conclusion:** The Project, with the incorporation of mitigation measures, will have a less than significant impact on archaeological and paleontological resources and human remains.

**Discussion:** The Project is located on property currently occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with existing operations.

Human remains are not known to exist within the Project site. Although there is a possibility of archaeological/paleontological resources being uncovered during construction activities at locations within the disturbed project sites. Prior to constructing the Project, the location will be reviewed to determine if there are any potentially impacted archeological/paleontological resources such as abandoned structures, grave sites, or potential fossil beds. Standard protocol in compliance with existing regulations would require that, in the event that archaeological/paleontological resources, including human remains, are discovered during surface surveys, digging, scraping, or other construction activities, all work within 100 feet be ceased until the significance and extent of the find can be recovered by a qualified archaeologist/paleontologist for study. Mitigation measures have been incorporated into the Project to minimize impacts on archaeological and paleontological resources. 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.

- ❖ **CUL-1** – In the event that archaeological/paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. BPC will notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. BPC 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 other appropriate agencies and individuals. Work may resume on the project site once the evaluation of the find is complete by the qualified archaeologist/paleontologist.
- ❖ **CUL-2** – In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit



those persons it believe to be the nearest descendants of the remains for recommendations. BPC shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains.

## **References**

California Native American Commission. *Determining the Significant Impacts to Archeological & Historical Resources*. Website: [www.nah.ca.gov/Artical\\_5.html](http://www.nah.ca.gov/Artical_5.html).  
California Code of Resources §15064.5

California Department of Parks and Recreation. Office of Historic Preservation. Website: [http://ohp.parks.ca.gov/listed\\_resources/?view=county&criteria=15](http://ohp.parks.ca.gov/listed_resources/?view=county&criteria=15)

California Health and Safety Code §7050.5

California Natural Resources Agency. *CERES: State Historical Landmarks for Kern County*. Website: [http://ceres.ca.gov/geo\\_area/counties/Kern/landmarks.html](http://ceres.ca.gov/geo_area/counties/Kern/landmarks.html)

National Register of Historic Places Website:  
<http://www.nationalregisterofhistoricplaces.com/ca/Kern/state.html>

Native American Heritage Commission. *Professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods*. Website: <http://www.nahc.ca.gov/profguide.html>

United States Department of the Interior- National Park Service. *National Register of Historic Places Database*. Website:  
<http://nrhp.focus.nps.gov/natregsearchresult.do?briefnav&briefpage=1>

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b>VI. Geology / Soils</b>				
<b>Would the Project</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?			X	
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X

**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 located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.





In addition, the Project is located in an area with stable soils and little potential for strong seismic activity and ground failure.

No major fault systems are known to exist in Kern County. The Project is not located within an Alquist-Priolo Earthquake Fault Zone or within 500 feet of a known active fault trace. The Project is not located within a liquefaction hazard area, or within a landslide hazard area. The Project will not be located on an unstable geological unit, unstable soil, or expansive soil. Therefore, potential for extensive surface rupture, strong ground shaking, and seismic ground failure, including liquefaction and landslides, is considered to be minimal.

The Project site is consistent with current land use and the Project is designed in accordance with all building code requirements including those pertaining to excavations, grading, and foundations. Adherence to California Building Standard 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 construction of the proposed Project would involve minimal “new” disturbance of soil, and native vegetation. Construction of the project includes: site preparation, construction of infrastructure, installation of steam generators, drilling and construction of new wells which could potential create erosion. However, construction of the Project is consistent with current land use designations and will occur within the existing operating boundaries of BPC which have been previously disturbed by similar activities for oil production. 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 capacity of the soil to support wastewater disposal systems.

**Discussion:** The Project includes the construction and operation of nine (9) steam generators and 255 TEOR wells. The Project can store wastewater in existing tanks, collect for reuse or transport to existing wastewater disposal facilities. These mechanisms for controlling wastewater are consistent with existing practices by BPC within their existing oilfield sites and therefore, resulting in no impact.

**Mitigation:** None required.

**References**

California Department of Conservation, California Geological Survey. *Fault Parameters-Alquist Priolo Earthquake Fault Zones*. Website:  
<http://www.conservation.ca.gov/cgs/rghm/ap/Pages/Index.aspx>

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

**VII. Greenhouse Gases (a, b)**

**Discussion:** Greenhouse gases (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 greenhouse gases. In fact, GHGs are not generally thought of as traditional air pollutants because greenhouse gases, 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 greenhouse gases occur naturally and are emitted into the atmosphere through natural processes. Other GHGs are created and emitted solely through human activities. The principal greenhouse gases that enter the atmosphere because of human activities are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), 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 (AB32)

Assembly Bill 32 (California Global Warming Solutions Act of 2006) is a key piece of California’s effort to reduce its GHG emissions. AB32 requires the California Air Resources Board (ARB) to establish regulations designed to reduce California’s GHG emissions to 1990 levels by 2020. On December 11, 2008, ARB adopted its AB32 Scoping Plan, setting forth a framework for future regulatory action on how California will achieve that goal through sector-by-sector regulation.

Cap & Trade

The AB 32 Scoping Plan identifies a Cap and Trade program as one of the strategies California will employ to reduce the greenhouse gas (GHG) emissions that cause climate change. The Cap and Trade program is implemented by the California Air Resources Board 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 percent of total statewide greenhouse gas emissions. The cap starts at expected business-as-usual 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).



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## CEQA Requirements

In December, 2009, the California Natural Resources Agency (NRA) amended the CEQA Guidelines to include Global Climate Change (GCC), which is now generally accepted by the scientific community to be occurring and caused by Greenhouse Gases (GHG). 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 greenhouse gas 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 AB32 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

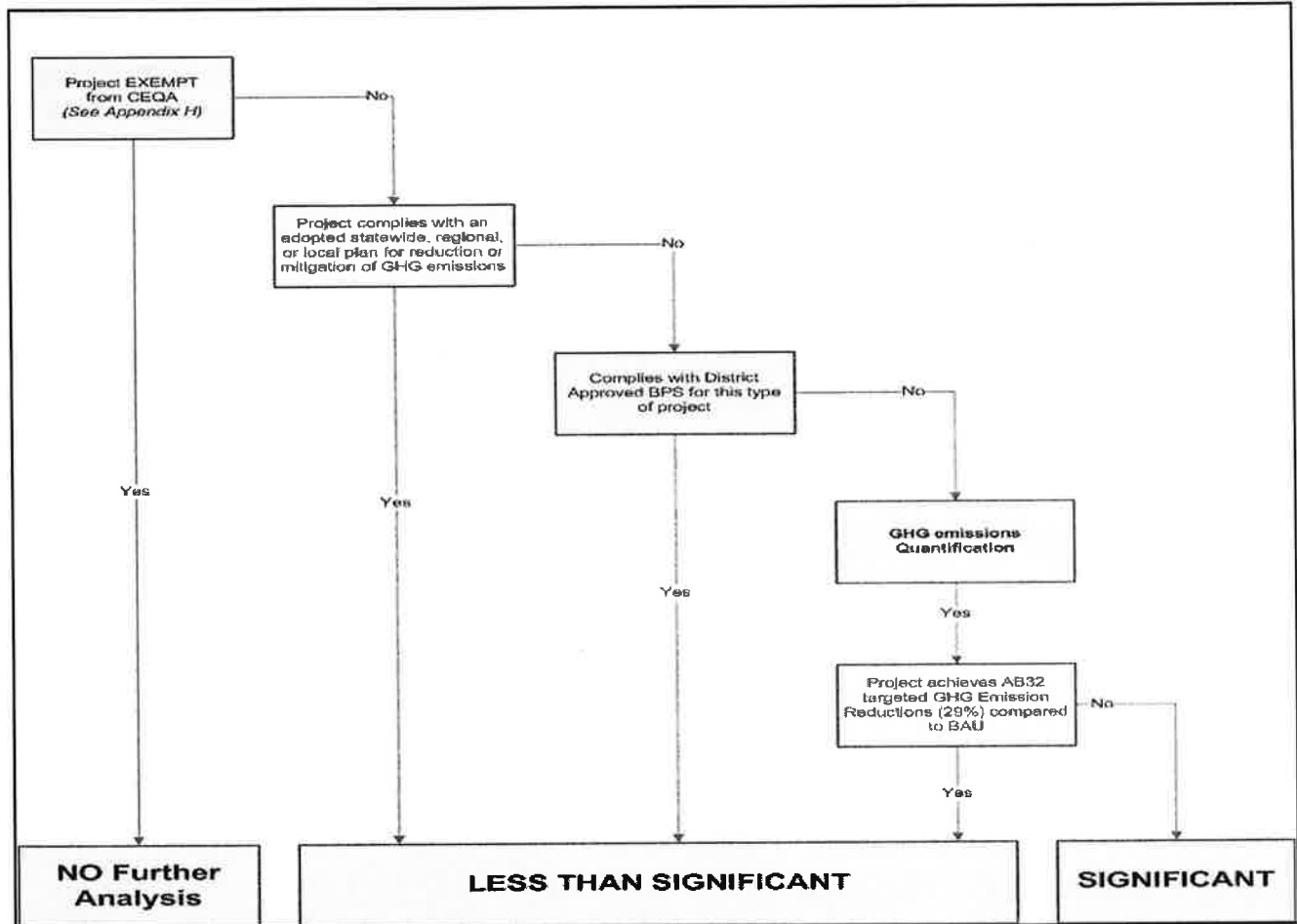
CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. On December 17, 2009, the District's Governing Board adopted the District's policy for addressing GHG emission impacts when the District is Lead Agency under CEQA and approved the District's guidance document for use by other agencies when addressing GHG impacts as lead agencies under CEQA. 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 4, 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 implement best performance standards



or undergo a project-specific analysis demonstrating that GHG emissions would be reduced by at least 29%, as compared to business-as-usual.

**Figure 4: Determination of Significance for Stationary Source Projects**





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

In December, 2009, the California Natural Resources Agency (NRA) amended the CEQA Guidelines to include Global Climate Change (GCC). NRA amended section 15064(h)(3) of the CEQA guidelines to add compliance with plans or regulations for the reduction of greenhouse gas 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 AB32 requires the California Air Resources Board (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).

The District's board-adopted policy for determining significance of project-specific GHG emissions employs a tiered approach. Of specific relevance 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."

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.

*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 Best Performance Standards (BPS)

Best Performance Standards ("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, the Berry Petroleum Company 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.





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### 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 will and must 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

Although not required, since the GHG emissions increases will be fully mitigated as discussed above, Berry Petroleum has also voluntarily proposed to implement Best Performance Standards (BPS) for each class and category of greenhouse gas emissions unit involved in the project (see the District's engineering evaluation, incorporated herein by reference).

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

**Mitigation:** None required.

### References

San Joaquin Valley Unified Air Pollution Control District. *Authority to Construct: Application Review, Applicant No. S-1246, Project No. S-1111129, S-1111510, S-1111901, S-1111928*. Available at San Joaquin Valley Air Pollution Control District, 1990 East Gettysburg Avenue, Fresno, CA 93726.

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*.



<b>VIII. Hazards &amp; Hazardous Materials</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>Would the Project:</b>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				X
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard for people residing or working in the Project area?				X
f) For a Project within the vicinity of a private airstrip, would the Project result in a safety hazard for people residing or working in the Project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	

**VIII. Hazards & Hazardous Materials**

Hazardous Materials (a-d)

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



**Discussion:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations. The Project is not located on a site which 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 area immediately surrounding the 21Z Lease site boundary is zoned Exclusive Agriculture (A), Low Density Residential (R-1), General Commercial (C-2) and Low Density Residential-Mobile Home Combining (R-1). The area immediately surrounding the Ethel D Lease site boundary is zoned Limited Agriculture (A-1) and Natural Resource (NR). Human receptors nearest to the Project are located at distances sufficient to reduce potential impacts from hazardous materials. The nearest receptor located to the 21Z Lease site is greater than 1,320 feet (0.25 miles). The nearest receptor located to the Ethel D Lease site is located greater than 5,280 feet (1 mile).

The production of oil and gas includes the development of oil spill prevention measures and oil spill cleanup procedures. Such measures and procedures are typically incorporated in or associated with bulk storage tanks, facility transfer operations, loading and unloading racks, oil production facilities, and oil drilling facilities. Mechanical containment, chemical and biological methods, and physical methods are some of the prevention and clean up techniques used at the Project. All of the oil spill prevention measures and the cleanup plans are in accordance with Spill Prevention, Control and Countermeasure (SPCC) regulations. Oil spill reporting and response procedures are established in the Department of Oil, Gas, and Geothermal Resources San Joaquin Valley Oil Field Spill Reporting Rule and require immediate clean-up of standing oil resulting from spills.

BPC ensures the installation/maintenance of protection equipment. Cathodic devices are installed and maintained at facilities located within the Project areas to protect pipelines from corrosion as a result of low pipe to soil electrical potential. Before an anode bed or well is to be installed, a biological survey is completed. Anode beds are installed at the depth of the pipeline and are located in close proximity to the pipeline. An anode well is installed 80 to 100 feet below grade or deeper into the vadose zone. Both require scheduled maintenance surveys. These surveys are usually conducted and maintained right-of-way along the pipeline, but if the area is not maintained a biological survey would be conducted prior to any inspection.

**Mitigation:** See below.

- ❖ **HAZ-1** – During construction activities, if unknown, unrecorded or abandoned wells are discovered or if any wells are damaged, BPC shall immediately notify DOGGR.



- ❖ **HAZ-2** – Any wells discovered or exposed during construction activities will be tested for flammable vapors.

#### 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 BPC 21Z Lease and Ethel D Lease sites, on property currently occupied by BPC for oil production activities. The Project is consistent with current and surrounding land uses which have historically been used for oil and gas related activities to enhance oil recovery. As indicated below, both sites for the Project are not located within two (2) miles of a private airport, public airport, or public use airport.

#### 21Z Lease Site

The nearest private airport is the Belridge Strip, and is located over ten (10) miles away from the Project site. The nearest public airport is the Buttonwillow Airstrip, and is located approximately seven (7) miles from the Project site.

#### Ethel D Lease Site

The nearest private airport is the 7R Ranch Airport, and is located approximately nine (9) miles from the Project site. The nearest public airport is the Taft Airport, and is located approximately 4.8 miles from the Project site.

**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 located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations. The nearest residence to the 21Z Lease site is over 1,320 feet (0.25 miles) away from the Project. The nearest residence to the Ethel D Lease site is over 5,320 feet (1 mile) away from the Project. No wildlands are within close proximity of the Project. To maintain fire safety on the Project sites, vegetation along roadsides and critical facilities such as tank settings and compressor stations will be controlled as needed through the use of mowing, grading, weed-whacking, and spot treatments of herbicides.



The Project is consistent with the existing land use which has historically been used for oil and gas related activities to enhance oil recovery. The Project would not require any physical alterations to existing public roadways that would impair or interfere with emergency response or evacuation. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would interfere with emergency response of expose people or structures to risk 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](http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.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](http://www.dtsc.ca.gov/SiteCleanup/Cortese_List.cfm)

California Environmental Protection Agency. *Cortese List: Section 65962.5(a)*. Website: <http://www.calepa.ca.gov/sitecleanup/corteselist/SectionA.htm>

Google Maps. June, 2012.

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b><u>IX. Hydrology / Water Quality</u></b>  <b>Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Violate any water quality standards or waste discharge requirements?				<b>X</b>
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)?				<b>X</b>
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?				<b>X</b>
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?				<b>X</b>
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?				<b>X</b>
f) Otherwise substantially degrade water quality?				<b>X</b>
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?				<b>X</b>
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				<b>X</b>
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?			<b>X</b>	
j) Inundation by seiche, tsunami, or mudflow				<b>X</b>



## IX. Hydrology / Water Quality

### Water Quality Standards, Waste Discharge and Water Quality, (a.f)

**Conclusion:** The Project will not violate any water quality standards or waste discharge requirements and will not substantially degrade water quality.

**Discussion:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designed by DOGGR, and is consistent with existing operations.

The Project must comply with water quality standards, waste discharge requirements and Underground Injection Control (UIC) Program standards which are regulated by DOGGR, the United States Environmental Protection Agency (USEPA), and the Regional Water Quality Control Board (RWQCB) which primarily relate to the protection of groundwater quality. Management of waste streams which could affect groundwater quality is subject to stringent regulatory control.

The steam generators will provide thermally enhanced oil recovery (TEOR) well operations within two existing oilfields (McKittrick oilfield and Midway Sunset oilfield). DOGGR's Well Review program requires compliance with UIC program regulations which were enacted under the Safe Drinking Water Act and requires compliance with the Basin Water Quality Control Plan adopted by the RWQCB for the Central Valley Region. Waste water produced from the Tulare formation, extracted during oil and gas production is disposed of by underground injection. Management of this waste stream is subject to stringent controls established to maintain surface and groundwater quality standards, such as the issuance of waste discharge requirements by the RWQCB to regulate the surface disposal of this waste stream, or the issuance of Class II Injection Disposal Well permits to regulate the underground disposal of this waste stream. However, water will not be disposed of by means of surface disposal at either of the Project sites.

The project does not include the disposal of any hazardous materials and as discussed above, will not require surface disposal of water produced during oil and gas operations. Therefore, the Project is not expected to violate any water quality standards or substantially degrade water quality.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would violate any water quality standards or waste discharge requirements that would substantially degrade water quality.

**Mitigation:** None required.



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Groundwater Supplies, Groundwater Recharge (b.)

**Conclusion:** The Project will not have an impact 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.

**Discussion:** As discussed in Impact A, the Project would generate insignificant amounts of waste water produced from the Tulare formation which is extracted during oil and gas production; however, to the extent possible, the produced water is re-injected into disposal wells.

Water used in the steam generators will be recycled produced water extracted from wells located within the lease or water obtained from existing water entitlements held by Berry, which are obtained from West Kern Municipal Water District. No new water entitlements will be necessary for project implementation. Wells located on these leases pump water from the Tulare Formation, an exempt aquifer. The Tulare Formation aquifer is water which is of poor quality and has been determined to have Total dissolved solids levels (TDS) which are above water quality standards for potable water.

Therefore the District concludes that there is no substantial evidence of record to support a conclusion that the Project would 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.

**Mitigation:** None required.

Drainage Pattern, Water Run-off (c,d,e)

**Conclusion:** The Project will have a less than significant impact on drainage patterns and will not substantially increase the rate or amount of surface run-off in a manner that would result in flooding on or off-site.

**Discussion:** A U.S. Geological Survey (USGS) delineated intermittent stream is located on the 21Z Lease, however, the proposed steam generators will be located on existing disturbed areas within a mature oilfield that has already been graded and prepared in support of ongoing operations. Within the Ethel D Lease, steam generators and oil wells will be located within a mature oilfield where some areas have already been graded, however minimal grading is anticipated to occur with the Project and will not impact any existing drainage patterns of the site.

In California, the SWRCB administers regulations transmitted by the US EPA (55 CFR 47990), requiring the permitting of storm water-generated pollution under the NPDES. The new California Construction General Permit (CGP), Order No. 2009-0009-DWQ, and NPDES CAS000002 is effective as of July 1, 2010 for all oil and gas construction activities. The CGP is a permit to discharge storm water from construction projects 1





acre or larger to waters of the United States. The CGP is not a permit to operate or an approval to construct. The overall objective of the permit is to control water pollution by regulating point sources that have the potential to discharge pollutants into waters of the United States. The CGP covers four phases of construction activities including grading and land development; streets and utilities; vertical construction; and final landscaping and site stabilization phase.

In May 2010, as result of the *Natural Resources Defense Council v. US EPA* decision, the State Water Board's Office of Chief Counsel issued a memorandum to "clarify that oil and gas construction activities that discharge storm water contaminated only with sediment require an NPDES permit if the discharge contributes to a violation of a water quality standard". The May 2010 memorandum summarized the State Water Board's conclusions regarding NPDES permit requirements as follows:

*If discharges of storm water runoff from oil and gas exploration, production, processing, or treatment operations or transmission facilities, including field activities or operations that may be considered construction activity*

- (1) are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products;*
- (2) are only contaminated by or only come into contact with sediment; and*
- (3) pursuant to 40 C.F.R. § 122.26(c)(1)(iii), do not contribute to a violation of a water quality standard, then the operator of the facility is not required to be covered under the Construction General Permit. If discharges of sediment from the foregoing oil and gas activities contribute to a violation of a water quality standard and the size of the construction project is one acre or greater, the operator must immediately apply to be covered by the Construction General permit (State Water Resources Control Board 2010).*

Where construction activity is not exempted from having to obtain a NPDES permit, prior to discharging storm water from activities which are not exempted above, construction operators must obtain coverage under NPDES, which is administered by the RWQCB. The NPDES requires compliance with effluent limits and other permit requirements, such as the development of a Storm Water Pollution Prevention Plan (SWPPP). The objective is to minimize the amount of soil erosion that is discharged off-site and the potential for chemicals and other pollutants used on-site during construction from migrating off-site.

The Project will utilize existing access roads. The Project will not introduce any new flood hazards and would not necessitate any new flood control projects. Therefore, the Project will have a less than significant impact on drainage patterns and will not substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

**Mitigation:** None required.



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Flood Hazard Area, Flood Hazard Structures, Expose People or Structures (g,h,i,j)

**Conclusion:** The Project will not expose people or structures to flood hazards, seiche, tsunamis or mudflows.

**Discussion:** The Project is located on property currently occupied by Berry Petroleum, located with the administrative boundaries of the McKittrick and Midway Sunset oilfields. The Project site is consistent with current land use designations and is currently and has historically been used for oil production. No habitable structures are proposed for construction by the Project.

The 21Z Lease is not located within the 100-year flood zone as mapped on Flood Insurance Rate Maps (FIRMs). Nor is the 21Z lease located in a Flood Hazard Safety Zone (FHSZ) as designated by Kern County. The northwestern most corner of the Ethel D Lease is located within the 100-year flood zone as mapped on FIRM and is located within a FHSZ as designated by Kern County, however no construction is planned within the FIRM or FHSZ mapped area and no structures are planned within this area which would impede or redirect flood flows.

The Project site is not within a county that is identified in the Tsunami Inundation maps prepared by the California Geological Survey and is therefore not at risk of inundation. In addition, the Project does not propose to place people or structures within any area that is subject to flooding through any cause, including as a result of failure of a levee or dam. Therefore, there is no substantial evidence of record to support a conclusion that the Project would expose people or structures to flood hazards, seiche, tsunamis or mudflows.

**Mitigation:** None required.

**References**

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



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

**X. Land Use/Planning**

Land Use and Planning (a, b)

**Conclusion:** The Project will not divide an established community or conflict with applicable land use plans, policies, or regulations.

**Discussion:** The Project is within the existing BPC 21Z Lease and Ethel D Lease sites, on property occupied by BPC for oil production activities. The Project is consistent with existing and surrounding land uses which have historically been used for oil and gas related activities to enhance oil recovery.

21Z Lease Site

The Project site is located within the McKittrick Specific Plan area of Kern County and is designated Mineral and Petroleum (Code 8.4), and Resource Management (Code 8.5) and is currently zoned A-Agriculture. The nearest community is approximately 0.25 miles of the Project. Therefore, the Project will not divide an established community.

Ethel D Lease Site

The Project site is designated as Mineral and Petroleum (Code 8.4) within the Kern County general plan and is zoned A-Agriculture. The nearest community is approximately 4.5 miles of the project within the City of Taft. Therefore, the Project will not divide an established community.

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 regulations.

**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 located on property occupied by BPC, within the existing 21Z Lease and Ethel D Lease site boundaries. The Project is consistent with the existing land use which has historically been used for oil production.

The Project is not located within the boundaries of any applicable habitat conservation plan or natural community conservation plan, or any USFWS designated critical habitat. The County has prepared a Draft Habitat Conservation Plan (HCP) which contains policies and guidelines for the protection of biological resources. Although the HCP has not currently been adopted, the Project does not propose actions or plans which would conflict with those considered in the Draft HCP. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would conflict with any HCPs.

**Mitigation:** None required.

**References**

California Department of Fish and Game. *Conservation and Mitigation Banks in California Approved by the Department of Fish and Game*. Website:  
<http://www.dfg.ca.gov/habcon/conplan/mitbank/catalogue/catalogue.html>

County of Kern. *First Draft Valley Floor Habitat Conservation Plan*. Website:  
[http://www.co.kern.ca.us/planning/pdfs/vfhcp\\_dec06.pdf](http://www.co.kern.ca.us/planning/pdfs/vfhcp_dec06.pdf)  
Quad Knopf, *Authority to Construct Permit Application and Supporting Information*, May 2012.

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.

United States Fish and Wildlife Service. *Conservation Plans and Agreements Database*. Website: [http://ecos.fws.gov/conserv\\_plans/public.jsp](http://ecos.fws.gov/conserv_plans/public.jsp)



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

**XI. Mineral Resources (a, b)**

**Conclusion:** The Project will not have an impact on mineral resources.

**Discussion:** The 21Z Lease site is designated within the McKittrick Specific Plan area of Kern County as Mineral and Petroleum (Code 8.4) and Resource Management (Code 8.5). The Ethel D Lease site is designated within the Kern County General Plan as Mineral and Petroleum (Code 8.4). Both Project sites are used for the purposes of mineral extraction, and are consistent with existing and surrounding land uses which historically have been used for oil and gas related activities to enhance oil recovery.

The exploration and production of oil on-site has historically been an existing practice. Therefore, the District concludes that the Project would not result in the loss of a known mineral resource of 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](http://www.conservation.ca.gov/cgs/geologic_resources/mineral_resource_mapping/Pages/Index.aspx)

County of Kern. *Kern County Online GIS Mapping*. Website:  
<http://www.co.kern.ca.us/gis/>

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence, May and June 2012.*



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

**XII. Noise**

Exposure of Persons to Noise and Vibration (a-b)

**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:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with existing operations.

21z Lease Site

Minor increases in ambient noise levels will occur, however the ambient noise levels will not exceed standards. Uses which would be sensitive to noise generated by the Project would generally consist of residences and schools. The 21Z Lease Site is within the vicinity of McKittrick Elementary School and also in the vicinity of existing residences. Both the school and the closest residence are located greater than 1,320 feet (0.25



miles) from the proposed location of steam generators, and therefore would not be subject to noise which would exceed acceptable levels.

#### Ethel D Lease Site

There are no residences or schools located within the immediate vicinity of the proposed Project site. The nearest residence is located approximately over 5,280 feet (1 mile) from the Ethel D Lease site. As such, noise levels are expected to have no impact on schools or residences within the vicinity of the Project.

Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from the source would decrease to about 63 dB at a distance of 600 feet. As such, the Project will not exceed any standards set forth in the Kern County General Plan or Noise Ordinance at the nearest public receptor.

State and federal standards set by the U.S. Department of Labor Occupational Safety and Health Administration (OSHA) regulate the amount of time workers may be exposed to sound levels above 90 decibels. The Project may result in noise exceeding 90 dB and a slight increase in ground vibration within 50 feet of the proposed steam generators. However, if the Project results in noise exceeding 85 dB, BPC will comply with all OSHA regulations for the protection against the effects of noise exposure (CCR §5095-5100).

The Project is consistent with existing oil production activities within the 21Z Lease and Ethel D Lease sites. As a result, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose the public or BPC employees to significant increases in noise or vibrations.

**Mitigation:** None required.

#### Ambient Noise Levels (c-d)

**Conclusion:** The Project may increase ambient noise levels in the Project vicinity; however, the Project is consistent with current land use and impacts are considered less than significant.

**Discussion:** The Project is located on property currently occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

#### Construction:

During construction activities, noise levels will be elevated. However, the increase in noise is temporary and will subside once construction of the Project is completed.



The nearest residence and school near the 21Z Lease site is located greater than 1,320 feet (0.25 miles) away from the Project site. The nearest residence and school near the Ethel D Lease site is located over 5,280 feet (1mile) away from the Project site. Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from a source would decrease to about 63 dB at a distance of 600 feet. Therefore, construction noise is a short-term temporary impact that is expected to have a less than significant impact on the nearest public receptor.

Operation:

The steam generators in this Project will result in increases in ambient noise levels. However, noise levels are not expected to increase to above 90 db. Future noise types and volumes will be consistent with the existing land use and existing oil production activities within BPC's 21Z Lease and Ethel D Lease oil field sites. The nearest residence and school near the 21Z Lease site is located over 1.320 feet (0.25 miles) away from the Project site. The nearest residence and school near the Ethel D Lease site is located over 5,280 feet (1mile) away from the Project site. Sound pressure decreases as distance between the source and the receptor increases. A sound level of 85 dB measured at 50 feet from a source would decrease to about 63 dB at a distance of 600 feet. Therefore, operational noise is expected to have a less than significant impact on the nearest public receptor.

**Mitigation:** None 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 is not located within two (2) miles of a private or public airport.

21Z Lease Site

The nearest private airport is the Belridge Strip, and is located over ten (10) miles away from the Project site. The nearest public airport is the Buttonwillow Airstrip, and is located approximately seven (7) miles from the Project site.

Ethel D Lease Site

The nearest private airport is the 7R Ranch Airport, and is located approximately nine (9) miles from the Project site. The nearest public airport is the Taft Airport, and is located approximately 4.8 miles from the Project site.

Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would expose people residing or working in the project area to excessive noise levels.





**Mitigation:** None required.

### **References**

California Department of Industrial Relations. *General Industry Safety Orders, Group 15. Occupational Noise*. Website: <http://www.dir.ca.gov/title8/sb7g15.html>

County of Kern. *Code of Ordinances, - Noise*. Website:  
<http://www.co.kern.ca.us/planning/pdfs/kcgp/KCGPChapter3.pdf>

Google Maps. June, 2012.

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.

Sengpiel Audio. *Damping of Sound Level with Distance*. Website:  
<http://www.sengpielaudio.com/calculator-distance.htm>

United States Department of Labor. *Occupational Safety and Health Administration. Regulations (Standards - 29 CFR.)* Website:  
[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_id=9735&p\\_table=STANDARDS](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9735&p_table=STANDARDS)



<b>XIII. Population / Housing</b>				
<b>Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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>X</b>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				<b>X</b>
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				<b>X</b>

**XIII. 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 located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations. As such, the Project will not increase substantial population growth in the area because the Project is expected to be maintained and manned by BPC personnel and contractors. The Project sites are currently operating and are developed for current operations, which does not include on-site housing. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would induce substantial population growth or displace substantial numbers of people or housing.

**Mitigation:** None required.

**References**

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b>XIV. Public Services</b>		<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>Would the Project:</b>	<b>Potentially Significant Impact</b>			
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?			<b>X</b>	
ii) Police protection?				<b>X</b>
iii) Schools?				<b>X</b>
iv) Parks?				<b>X</b>
v) Other public facilities?				<b>X</b>

**XIV. Public Services**

Fire Protection (a.i)

**Conclusion:** The Project will not require additional fire protection facilities and will not negatively impact the existing facility’s ability to provide services.

**Discussion:** 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 a fire.

21Z Lease Site

Fire Service for the 21Z Lease site is provided by the Kern County Fire Department. The closest station is Station 21, located at 303 10<sup>th</sup> Street in Taft, California. Station 21 has a 172 square mile response area that includes having primary responsibility for the area surrounding the 21Z Lease site boundary.

Ethel D Lease Site

Fire Service for the Ethel D Lease is provided by the Kern County Fire Department. The closest station is Station 22, located at 801 Stanislaus Street in Maricopa, California. Station 22 has a 218 square mile response area that includes having primary responsibility for the area surrounding the Ethel D Lease site boundary.



Fire services within Kern County are provided countywide through a joint powers agreement between the County of Kern and the Cities of Bakersfield and California City. Through these existing service providers, fire protection and other emergency services are available and adequate to serve the project. Therefore, the District concludes that construction and operation of the Project would have a less than significant impact on fire protection capabilities in the Project area.

**Mitigation:** None required.

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

**Conclusion:** The Project will not require additional police protection, school, park, or other public facilities, nor will it negatively impact existing facilities' ability to provide services.

**Discussion:** The Project is located within the existing BPC 21Z Lease and Ethel D Lease sites, on property currently occupied by BPC for oil production activities. The Project is consistent with current and surrounding land uses which have historically been used for oil and gas related activities to enhance oil recovery. The Project is expected to be maintained and manned by existing BPC 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, the District concludes that 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:** 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](http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland_zones.php)

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b>XV. Recreation</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>Would the Project:</b>				
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>X</b>
b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				<b>X</b>

**XV. 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 consists solely of the construction and operation of steam generators, TEOR wells, ancillary equipment and infrastructure to maintain operations. The Project is located within the existing BPC 21Z Lease and Ethel D Lease sites, on property currently occupied by for oil production activities. The Project is consistent with current and surrounding land uses which have historically been used for oil and gas related activities to enhance oil recovery. As such, the project is expected to be maintained and manned by existing BPC personnel and contractors and, therefore, will not increase the population in the surrounding area. The Project does not include new recreational facilities, and a lack of substantial increase in population precludes the possibility of the Project having a negative impact on neighborhood and regional parks. 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 or resulting from recreational facilities

**Mitigation:** None required.

**References**

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



<b><u>XVI. Transportation / Traffic</u></b>				
<b>Would the Project:</b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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?				X
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?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?				X



## XVI. Transportation/Traffic

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

**Conclusion:** The Project will not conflict with any circulation plans, congestion management programs, or alternative transportation facilities.

**Discussion:** The applicable plans establishing measures of effectiveness for the performance of the circulation system are the Kern County Circulation Element (Circulation Element) adopted by the County of Kern and the Regional Transportation Plan (RTP) adopted by the Kern Council of Governments. The Circulation Element establishes measures of effectiveness for the performance of circulation systems within Kern County. In combination, both the Circulation Element and RTP provide congestion management programs and other standards which take into account all modes of transportation, including pedestrian, bicycle and mass transit modes in consideration of all intersections, streets, highways and freeways within Kern County.

The current standard of measurement for streets and highways within Kern County is "Level of Service (LOS)." LOS is used to correlate numerical traffic-volume data to subjective descriptions of traffic performance at intersections. LOS are described using letters "A" through "F", with "A" being optimal performance and "F" indicating that intersections are operating below standard. The Circulation Element policies require that county road intersections maintain a minimum LOS of "D." State highway must maintain a minimum LOS of "C."

### 21Z Lease

The 21Z Lease is located on property currently occupied by BPC for oil production activities. Installation of the new steam generators will not require any new permanent employees. The existing employees will utilize one (1) of four (4) routes to the Project site:

- From Taft: State Highway 58 east to Reserve Road (county road); or
- From northern Kern County: State Highway 33 south to Reserve Road (county road); or
- From Bakersfield/Eastern Kern County: State Highway 58 west to Reserve Road (county road); or
- From southern Kern County: State Highway 33 north to Reserve Road (county road).

### Ethel D Lease

The Ethel D Lease is located on property currently occupied by BPC for oil production activities. Installation of the new steam generators will not require any new permanent employees. The existing employees utilize one (1) of two (2) routes to the Project site:

- From Taft: State Highway 33 south to Kerto Road (county road); or



- From Bakersfield and northern Kern County: Interstate 5 south to Old River Road (county road), to Highway 166 (state highway) west to Pentland Road (county road) north to Kerto Road (county road).

The Project construction related traffic will be short-term and will not be of a magnitude that would impede the flow of traffic or decrease the LOS on the affected county roads and state highways.

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 result in negative impacts to existing circulation systems.

**Mitigation:** None required.

Impacts (c, d, e)

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

**Discussion:** The Project is located on property currently occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

Neither of the two leases is located within two (2) miles of a public airport or private airport. The nearest public airport to the 21Z Lease is the Buttonwillow Airstrip which is located approximately 7 miles of the Project site. The nearest public airport to the Ethel D Lease is the Taft Airport which is located approximately 4.8 miles of the Project site. Therefore, the Project will not present any safety risks nor have an impact on air traffic patterns.

The Project will utilize existing public roads for ingress, egress and emergency access which will not result in the creation of new road design features or hazards. Therefore, the Project will not require changes in design that have the potential to create road hazards or impact emergency access.

**Mitigation:** None required.

References

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.





<b><u>XVII. Utilities / Service Systems</u></b>	<b>Potentially Significant Impact</b>	<b>Potentially Significant Impact Unless Mitigated</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>Would the Project:</b>				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the Project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider 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?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X

**XVII. Utilities / Service Systems**

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

**Conclusion:** The Project would not exceed wastewater treatment requirements or require the construction of new wastewater or storm water facilities.

**Discussion:** The Project is located on property currently occupied by BPC, which has historically allowed for the exploration and production of oil. The Project is located within



the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

Water used in the steam generators will be recycled produced water extracted from wells located within the lease or water obtained from existing water entitlements held by BPC, which are obtained from the West Kern Municipal Water District. No new water entitlements for the Project will be necessary for implementation. Wells located on these leases, pump water from the Tulare Formation, an exempt aquifer. The Tulare Formation aquifer is water which is of poor quality and has been determined to have Total Dissolved Solids (TDS) levels which are above water quality standards for potable water. Wastewater associated with the Project will be stored in existing tanks, collected for reuse, or will be transported to existing wastewater disposal facilities. In addition, the Project will not require approvals from the California Regional Water Quality Control Board (RWQCB). The Project will also not require the construction or modification of wastewater facilities, and therefore, will not impact any wastewater treatment providers.

Construction of the Project requires minimal earth moving activities. Any runoff at the existing BPC Project sites either percolates into the ground or run to nearby natural drainage. Because construction activities require earthmoving, consistent with existing operations, the Project will have little impact on existing runoff and flooding potential. Therefore, new or expanded storm water facilities will not be required.

The District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact resulting from wastewater and storm water treatment and associated facilities.

**Mitigation:** None required.

Water Supply (d)

**Conclusion:** The Project will have sufficient water supplies and new or expanded entitlements are not required.

**Discussion:** The Project is located on property currently occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations.

The Project will use water from existing water entitlements held by BPC, which are obtained from the West Kern Municipal Water District. No new water entitlements will be necessary for Project implementation. Wells located on these leases pump water from the Tulare Formation, an exempt aquifer. The Tulare Formation is water which is of poor quality and has been determined to have Total Dissolved Solid (TDS) levels which are above water quality standards for potable water. Therefore, the District concludes that



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the Project will have sufficient water supplies available and will not result in any new or expanded entitlements.

**Mitigation:** None required.

*Solid Waste (f, g)*

**Conclusion:** The Project will comply with all solid waste regulations and will not have an impact on the landfill that currently serves the existing BPC Project sites.

**Discussion:** The Project is located on property occupied by BPC which has historically and currently allowed for the exploration and production of oil. The Project is located within the existing boundaries of the McKittrick Oilfield (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields as designated by DOGGR, and is consistent with current operations. BPC's project sites are currently served by the Taft Sanitary Landfill. The Project will result in only minimal amounts of solid waste and BPC has detailed guidelines and measures in place to ensure solid waste is handled in accordance with all applicable ordinances. Therefore, the District concludes that there is no substantial evidence of record to support a conclusion that the Project would have a significant impact resulting from the disposal of solid waste.

**Mitigation:** None required.

**References**

Quad Knopf, *Authority to Construct Permit Application and Supporting Information, Correspondence*, May and June 2012.



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

**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 air quality, biological resources, and cultural resources.

**Mitigation:** See Mitigation Measures: AIR-1, BIO-1 through BIO-22, CUL-1 and CUL-2.



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:** See Mitigation Measures: AIR-1, BIO-1 through BIO-22, CUL-1 and CUL-2, HAZ-1 and HAZ-2.

Impacts on Humans (c)

**Conclusion:** The Project 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 and HAZ-1 through HAZ-2



**H. List of Attachments**

**I. Monitoring and Reporting Program**

Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
Operational emissions may exceed the District's thresholds of significance.	AIR-1	Potentially Significant	❖ BPC shall comply with all applicable District permitting requirements and if required, shall surrender Emission Reduction Credits to offset operational emissions as required by District NSR requirements prior to construction.	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-1	Potentially Significant	❖ Blunt-nosed leopard lizard surveys following current CDFG guidelines shall be completed no more than one year prior to initiation of project if construction activities will impact potential habitat for the species. Potential habitat includes areas that have not been previously disturbed or that have recovered to support vegetation and small mammal burrows that represent potential shelter for blunt-nosed leopard lizard. If at any time blunt-nosed leopard lizards are observed during these surveys, no disturbance of areas that could be occupied by this species should occur within 500 feet of the observation without prior approval from CDFG and USFWS.	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-2	Potentially Significant	❖ A qualified biologist acceptable to the USFWS and the CDFG shall be hired to conduct a biological resources survey between 30 and 60 days prior to any ground disturbance in areas subject to development to determine whether any San Joaquin antelope squirrels, potential or known San Joaquin kit fox dens or other evidence of special status species (for example, burrowing owl) are present or have subsequently been established. The survey shall be conducted under	San Joaquin Valley Air Pollution Control District	Less Than Significant



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p>conditions considered appropriate for detection of San Joaquin antelope squirrel. These conditions include temperature of at least 60°F and no more than 80 percent cloud cover. Surveys for this species should not be conducted under foggy or rainy conditions. This survey will be used as a basis for implementation of avoidance and minimization measures for covered and other special-status species. Dens and burrows identified during the survey shall be flagged for avoidance as described below. The disposition of San Joaquin kit fox dens shall be according to USFWS guidelines (1999) or pursuant to requirements of applicable project permits. <i>(Please note that the USFWS reissued their recommendations in January 2011, therefore the most recent version should be used).</i></p> <p>For San Joaquin kit fox dens or San Joaquin antelope squirrel burrows within 200 feet of the construction area, avoidance zones shall be identified by wooden or metal stakes connected by flagging or by other similar fencing material. Each avoidance zone shall have the following distance measured outward from the den or burrow entrances or the edge of the plant population.</p> <ul style="list-style-type: none"> <li>Potential kit fox den</li> <li>Known kit fox den</li> <li>Kit fox pupping den (occupied or unoccupied)</li> <li>USFWS Atypical kit fox den</li> <li>San Joaquin antelope squirrel</li> </ul> <ul style="list-style-type: none"> <li>• Avoidance zones shall be maintained until all construction activities have</li> </ul>		



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p>been completed, and then shall be removed by a qualified biologist.</p> <ul style="list-style-type: none"><li>• If dens or nest burrows are located outside of the construction area but within the avoidance zone designated for the resource type (listed above), the boundary of the avoidance zone shall be drawn to include all areas within the radius stated above, except those falling within the construction area. If the construction area encroaches on an avoidance area, potential dens shall not be excavated unless a qualified biologist determines that excavation is absolutely necessary. Potential kit fox dens shall be monitored until they can be shown to be unoccupied based on the procedures outlined in "U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance" (USFWS 1999), and then covered with plywood that is firmly secured to prevent access by kit foxes during project activities. The covers shall not be installed more than 14 days prior to the start of construction. The covers shall remain in place for the duration of construction, after which time they shall be removed. <i>(Please note that the USFWS reissued their recommendations in January 2011,</i></li></ul>		





Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p><i>therefore the most recent version should be used).</i></p> <ul style="list-style-type: none"><li>• If avoidance of any potential kit fox den within the project site is not practicable, and the den may be unavoidably damaged or destroyed by project actions, the following procedure shall be implemented. Prior to surface-disturbing activities, any such potential kit fox den shall be completely excavated and then backfilled to preclude later use by kit foxes during the construction period. If, at any time during monitoring or excavation, any sign that the den may be or has been occupied is found, the den's status changes to "known".</li><li>• Potential kit fox dens may be excavated provided that the following conditions are satisfied: (1) the den classification is determined by a qualified wildlife biologist; and (2) the excavation is conducted by or under the direct supervision of a qualified wildlife biologist.</li><li>• Dens identified by a qualified biologist as either a "known" den or as a "suspected" pupping den shall not be excavated unless the appropriate California Endangered Species Act (CESA) and Federal Endangered Species Act permits authorized such</li></ul>		



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p>excavations. In addition, any occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated.</p> <p>❖ If San Joaquin antelope squirrel burrows cannot be avoided, no project activities shall occur until the appropriate CESA permit has been issued by CDFG. The following measures to minimize and mitigate for impacts to San Joaquin antelope squirrel would be the minimum:</p> <ul style="list-style-type: none"><li>• San Joaquin antelope squirrel burrows will be avoided to the maximum extent practicable.</li><li>• If occupied San Joaquin antelope squirrel burrows cannot be avoided, a trapping effort will be conducted by a properly permitted wildlife biologist for the purpose of either relocation or holding and releasing individuals back into temporarily disturbed portions of the project site.</li><li>• CDFG will be provided with a notification at least 30 days prior to trapping and relocation with a plan that includes at least the following information: 1) approximate number of San Joaquin antelope squirrels to be affected; 2) previous experience of the wildlife biologist conducting the trapping and relocation; 3) description of trapping effort; 4) description of</li></ul>		

Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-3</p>	<p>Potentially Significant</p>	<p>relocation plans; 5) whether individuals will be temporarily held for release; 6) off-site release locations; 7) artificial burrow placement; and 8) proposed results reporting schedule. If CDFG does not respond within 30 days of receiving the notification, trapping and relocation will proceed as stated in the notification. San Joaquin antelope squirrels should not be relocated greater than 500 feet from capture location without prior approval from CDFG.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>❖ All employees, contractors, or other persons involved in the construction of the project shall attend a biological resource worker orientation program informing them of the biological resource protection measures which will be implemented for the project. The orientation shall be conducted by a qualified biologist and shall include information regarding the life history of the protected species and other special-status species that may be encountered, reasons for special status, a summary of applicable environmental law, and measures intended to reduce impacts. Training shall be completed the first day of work on the job site for workers, supervisors, contractors, etc. The program shall consist of a briefing of biological resource issues relative to the project including an explanation of endangered species concerns to contractors, their employees, and other personnel involved in the project. In addition, the program shall include a discussion of listed species biology, the habitat and needs of these species, their occurrence in the project vicinity, their status under the FESA and CESA, and their habitats during project</p>					



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p>activities. Similar but brief information shall also be provided for all other sensitive species that are found on the project site. Upon completion of the orientation, employees should sign a form stating that they attended the program and understand all biological resource mitigation measures. These forms shall be filed at the applicant's office and shall be accessible to USFWS and CDFG staff.</p>		
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	BIO-4	Potentially Significant	<ul style="list-style-type: none"> <li>❖ The limits of project site grading should be clearly delineated prior to construction activities by posting stakes, flags and/or rope or cord, as necessary.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	BIO-5	Potentially Significant	<ul style="list-style-type: none"> <li>❖ Traffic restraints and signs shall be established and issued to minimize temporary disturbances. All project-related vehicle traffic shall be restricted to established roads, designated access roads and routes, project site, storage areas, and staging and parking areas. Off-road traffic outside designated project boundaries shall be prohibited. A 20 mph speed limit shall be observed in all other project areas, except on county roads and state and federal highways.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	BIO-6	Potentially Significant	<ul style="list-style-type: none"> <li>❖ All equipment storage and parking during project activities shall be confined to the designated construction area or to previously disturbed offsite areas that are not habitat for listed species.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-7	Potentially Significant	<ul style="list-style-type: none"> <li>❖ All project activities involving excavation or surface disturbance shall be limited to daylight hours.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-8	Potentially Significant	<ul style="list-style-type: none"> <li>❖ To prevent entrapment of listed species or other animals, all excavated, steep-walled holes or trenches more than 2 feet deep shall either be covered at the close of each working day by plywood or provided with one or more escape ramps constructed of earth fill or wooden planks. The ramps shall be located at no greater than 1,000-foot intervals and shall be sloped less than 45 degrees. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures shall be installed immediately to allow the animal(s) to escape, or the CDFG and USFWS shall be contacted for advice.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-9	Potentially Significant	<ul style="list-style-type: none"> <li>❖ Trenches shall be inspected for entrapped wildlife each morning prior to the onset of construction. Before such holes or trenches are filled, they shall be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before construction activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-10	Potentially Significant	<ul style="list-style-type: none"> <li>❖ All construction pipes, poles, culverts, hoses or similar structures stored at the construction site for one or more overnight periods shall be capped or the ends covered in a way that prevents wildlife entrapment. Unburied pipes laid in trenches overnight shall be capped. If a kit fox or other listed species is discovered inside a pipe, that section of pipe will not be moved until</li> </ul>	San Joaquin Valley Air Pollution Control District	Less Than Significant



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			<p>the CDFG and USFWS have been consulted. If necessary, and under the direct supervision of a qualified biologist, the pipe may be moved only once to remove it from the path of project activity, until the animal has escaped.</p>		
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-11</p>	<p>Potentially Significant</p>	<ul style="list-style-type: none"> <li>❖ All food-related trash items such as wrappers, cans, bottles and food scraps generated by project activities shall be disposed of in closed containers and removed at least once each week from the site. Deliberate feeding of wildlife is prohibited.</li> </ul>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-12</p>	<p>Potentially Significant</p>	<ul style="list-style-type: none"> <li>❖ No firearms or pets should be allowed on the project site.</li> </ul>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-13</p>	<p>Potentially Significant</p>	<ul style="list-style-type: none"> <li>❖ All equipment and work-related materials shall be contained in closed containers either in the work area or on vehicles. Loose items (e.g. rags, hose, etc.) shall be stored within closed containers or enclosed in vehicles when on the work site.</li> </ul>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-14</p>	<p>Potentially Significant</p>	<ul style="list-style-type: none"> <li>❖ All liquids shall be in closed, covered containers. Any spills of hazardous liquids shall not be left unattended until clean-up has been completed.</li> </ul>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-15</p>	<p>Potentially Significant</p>	<p>❖ Use of rodenticides and herbicides on the project site shall be minimized. This is necessary to prevent primary or secondary poisoning of endangered species using adjacent habitats, and to avoid the depletion of prey upon which they depend. Label restrictions and other restrictions imposed by the U.S. Environmental Protection Agency (EPA), the California Department of Food and Agriculture (CDFA), and other state and federal legislation shall be implemented. If rodent control must be conducted, zinc phosphide shall be used because of its proven lower risk to kit foxes.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-16</p>	<p>Potentially Significant</p>	<p>❖ CDFG and the USFWS shall be contacted after taking appropriate action regarding emergency response in the event of an emergency on the project, which has the potential to affect listed species. During subsequent activities related to the emergency, the CDFG and/or USFWS may require additional biological resource protection measures.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-17</p>	<p>Potentially Significant</p>	<p>❖ Any employee who inadvertently kills or injures a listed species, or who finds any such animal dead, injured, or entrapped shall be required to report the incident immediately to the Site representative (except animals killed on state and county roads when such mortality is not associated with project traffic). In the case of entrapped animals that are listed species, escape ramps or structures shall be installed immediately if possible to allow the subject animal(s) to escape unimpeded.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>



<b>Impact</b>	<b>Measure Number</b>	<b>Significance Prior to Mitigation</b>	<b>Mitigation Measure</b>	<b>Enforcement Agency</b>	<b>Significance After Mitigation</b>
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-18	Potentially Significant	❖ In the case of injured animals, the CDFG shall be notified immediately. During business hours Monday through Friday, the phone number is (559) 243-4017. For non-business hours, report to (800) 952-5400. Notification shall include the date, time location, and circumstances of the incident. Instructions provided by the CDFG for the care of the injured animal shall be followed by the Contractor onsite.	San Joaquin Valley Air Pollution Control District	Less Than Significant
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-19	Potentially Significant	❖ In the case of dead animal(s) that are listed as threatened or endangered, the USFWS and the CDFG shall be immediately (within 24 hours) notified by phone or in person and shall document the initial notification in writing within two working days of the findings of any such animal(s). Notification shall include the date, time, location and circumstances of the incident.	San Joaquin Valley Air Pollution Control District	Less Than Significant



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-20</p>	<p>Potentially Significant</p>	<p>❖ If vegetation clearing is conducted between February 1 and August 31, a survey targeting identification of nesting birds shall be conducted. This survey may be conducted in conjunction with the pre-activity survey. If any nesting birds covered by the Migratory Bird Treaty Act are identified, nests shall be avoided by an appropriate distance such that nesting activities are not interrupted until the young have fledged. Determination of when young have fledged from active nests will be determined by a qualified biologist. If any nesting birds are found during vegetation clearing activities, a qualified biologist shall be contacted to determine appropriate avoidance measures. If any burrowing owl burrows are observed, avoidance measures should be consistent with those included in CDFG (2012) "staff report on burrowing owl mitigation," taking into account existing disturbances such as roads and structures. Absolutely no disturbance to active nests shall occur without a permit pursuant to the Migratory Bird Treaty Act. For nesting and breeding birds, a 250 foot buffer distance shall apply for active nests discovered and buffers shall be delineated around active nests until breeding season has ended.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-21</p>	<p>Potentially Significant</p>	<p>❖ All power poles and electrical facilities should be designed to minimize the potential for electrocution of migratory and resident birds, including consideration of birds with a wingspan of up to 9 feet.</p>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>

Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
<p>Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.</p>	<p>BIO-22</p>	<p>Potentially Significant</p>	<p>❖ Additional measures intended specifically to minimize the potential for impacts to California condors during construction and operation of the project include the following:</p> <ul style="list-style-type: none"> <li>• The project site should be inspected by Berry Petroleum once per week for "microtrash" items that may be picked up by California condors. All items of microtrash shall be disposed of in closed containers and regularly removed from the project site.</li> <li>• All equipment and work-related materials should be confined in closed containers either in the work area or on vehicles. Loose items (e.g., rags, hose, etc.) should be covered, stored within closed containers, or enclosed in vehicles except while being used for a work task. Covers should be materials that are not an attractant to California condors.</li> <li>• All liquids should be in closed, covered containers. Any spills of hydrocarbons or hazardous liquids should not be left unattended until clean-up has been completed.</li> <li>• Any observations or encounters with California condors shall be recorded and reported by Berry Petroleum to CDFG and USFWS within two business days.</li> </ul>	<p>San Joaquin Valley Air Pollution Control District</p>	<p>Less Than Significant</p>

Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
Project may potentially affect sensitive species, riparian habitat or the movement of any native resident or migratory fish or wildlife species, corridors, or nursery sites.	BIO-23	Potentially Significant	<p>Any "take" of California condor should be reported to CDFG and USFWS immediately.</p> <p>❖ Surveys for special-status plan species and avoidance will be conducted for portions of the Ethel D Lease Site in contiguous habitat along the edges of the project boundary if pre-construction survey result in identification of habitat that could support potentially occurring species.</p>	San Joaquin Valley Air Pollution Control District	Less Than Significant
Impacts on archeological/paleontological resources and human remains.	CUL-1	Potentially Significant	<p>❖ In the event that archaeological/paleontological resources are discovered during ground-disturbing activities associated with construction of the proposed Project, all work within 100 feet of the find shall cease. BPC will notify and retain a qualified archaeologist/paleontologist to assess and provide an evaluation of the significance of the find. BPC 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 other appropriate agencies and individuals. Work may resume on the project site once the evaluation of the find is complete by the qualified archaeologist/paleontologist.</p>	San Joaquin Valley Air Pollution Control District	Less Than Significant
Impacts on archeological/paleontological resources and human remains.	CUL-2	Potentially Significant	<p>❖ In the event that human remains are discovered during construction of the Project, all work within 100 feet shall be ceased and the discovery will immediately be reported to the County Coroner. If the remains are determined to be Native American in origin, the County Coroner shall notify the Native</p>	San Joaquin Valley Air Pollution Control District	Less Than Significant



Impact	Measure Number	Significance Prior to Mitigation	Mitigation Measure	Enforcement Agency	Significance After Mitigation
			American Heritage Commission (NAHC) within 24 hours of the determination. The NAHC will solicit those persons it believe to be the nearest descendants of the remains for recommendations. BPC shall, in consultation with the identified descendants of the remains and/or NAHC, will identify the appropriate measures for the treatment or disposition of the remains.		
Impacts resulting from hazards and hazardous materials.	HAZ-1	Potentially Significant	❖ During construction activities, if unknown, unrecorded or abandoned wells are discovered or if any wells are damaged, BPC shall immediately notify DOGGR.	San Joaquin Valley Air Pollution Control District	Less Than Significant
Impacts resulting from hazards and hazardous materials.	HAZ-2	Potentially Significant	❖ Any wells discovered or exposed during construction activities will be tested for flammable vapors	San Joaquin Valley Air Pollution Control District	Less Than Significant



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**II. Appendix A – Air Quality Construction Calculations**

Available Upon Request at District Office:

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



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**III. Appendix B – 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



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**IV. Appendix C – Biological Reconnaissance Survey Results Report & Addendum  
to Biological Reconnaissance Survey Results**

Available Upon Request at District Office:

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



**V. Appendix D – Comments Received on the Draft Mitigated Negative Declaration  
and District Response to Comments**





The San Joaquin Valley Air Pollution Control District (District) provided a Notice of Intent to adopt a Mitigated Negative Declaration for the construction and operation of five (5) 85.0 MMBtu/hr gas fired steam generators. Four (4) 85.0 MMBtu/hr steam generators will be located at the existing and currently operating BPC 21Z Lease site and one (1) 85.0 MMBtu/hr steam generator will be located at the BPC Ethel D Lease site. In the future, Berry Petroleum Company (BPC) plans to install an additional four (4) 85.0 MMBtu/hr gas fired steam generators and add 255 thermally enhanced oil recovery wells within an existing petroleum operation located within the Ethel D Lease site. Construction of this project will occur over a 5 ½ year period.

The following parties provided written comments on the proposed Initial Study and Mitigated Negative Declaration.

- California Department of Fish and Game (DFG)

All comments were duly considered and addressed in preparation of the Final Mitigated Negative Declaration (MND). A copy of the comment letter is incorporated into this document as *Attachment 1*. A summary of the comments received and the District's responses follow below.

### DFG

**Comment 1:** The Department has concerns regarding the potential for the Project to impact special-status species known to occur in the Project-area. Species are known to occur on the subject sites or in close proximity to the subject site, and several are known to occur even in disturbed oil fields in the Project area.

**Response 1:** Comment noted. The project proponent has met with the DFG to address any concerns, as a result of project implementation. As such, the MND has been amended to include further clarification and mitigation measures to ensure special status species are protected in accordance with DFG rules and regulations.

**Comment 2:** The Department is recommending additional mitigation measures to be included in the final Mitigated Negative Declaration (MND) prepared for the Project. Implementation of the recommendations would reduce the potential for Project-related impacts to sensitive biological resources and should be included as enforceable mitigation measures as appropriate for all Project-related impacts.

**Response 2:** Comment noted. The project proponent has met with the DFG to address any concerns, as a result of project implementation. As such, the MND has been amended to include further clarification and mitigation measures to ensure potential impacts to sensitive biological resources are reduced. Mitigation measures will be reflected as permit conditions and will be made enforceable.



**Comment 3:** The comment letter provided discussion regarding the DFG's various roles under CEQA, their jurisdictional responsibilities for biological species, sensitive biological species known to occur within the Ethel D and 21Z Lease oilfield sites, and various approaches for avoiding and minimizing impacts to sensitive species.

**Response 3:** The discussion was informational in nature. No response is required.

**Comment 4:** Blunt-nosed Leopard Lizard (BNLL): Known occurrence records document BNLL within 1.5 miles of the 21Z Lease and 1 mile of the Ethel D Lease. Species-specific surveys for BNLL were conducted at the Ethel D Lease Project site in 2011 which resulted in negative results. Currently, surveys are being conducted at the 21Z Lease Project site. The Department is unclear what survey methodology was/is being used for these surveys since data sheets were not provided in the Biological Reconnaissance Survey Result Report prepared by McCormick Biological, Inc., dated June 1, 2012. Therefore, absent additional information, the Department is unable to concur with the negative results of the above survey efforts. The Department recognizes that the IS/DMND states in mitigation measure B10-1 of the report that BNLL surveys would be completed no more than one year prior to initiation of the Project if construction activities will impact potential habitat. Suitable BNLL habitat includes all areas of grassland and shrub scrub habitat that contains required habitat elements, such as small mammal burrows. BNLL are also known to utilize open space patches between suitable habitats including disturbed sites and unpaved access roadways. Because BNLL is fully protected and, therefore, no "take" incidental or otherwise can be authorized by the Department, in disturbed open areas where small mammal burrows are available within 500 feet of proposed construction activities, protocol-level surveys should be conducted. Based on the information provided in the McCormick Biological Report, the Department has determined that both Project sites include potential habitat.

To observe avoidance of BNLL, focused surveys should be conducted following the 2004 survey methodology titled "Approved Survey Methodology for the Blunt-nosed Leopard Lizard", which was developed by the Department. These surveys, the parameters of which were designed to optimize detectability, must be conducted to reasonably assure the Department that "take" of this fully protected species will not occur as a result of Project implementation. It is important to note that protocol-level surveys must be conducted on multiple dates during late spring, summer, and fall and that within these time periods there are specific date, temperature, and time parameters which must be adhered to; as a result, protocol-level surveys for this species are not synonymous with 30-day "pre-construction" surveys often recommended for other wildlife species.

In addition, all potential burrows which could be occupied by BNLL should be avoided and all individuals observed to be above ground avoided as well. DFG also recommends that that in all areas where ground-disturbing Project activities will



occur, suitable burrows within and adjacent to potential habitat for BNLL should be avoided by a minimum 50 feet; that an appropriate number of qualified biologists be present during all ground-disturbing Project activities to ensure that BNLL above ground are not impacted; and that any individual that may enter an area of Project activity be allowed to leave unobstructed on its own. Dirt roads can be important habitat features for BNLL, and because the Project would result in an increase in traffic during construction which increases the potential for vehicle strikes, the MND should clearly state how impacts to individual BNLL using those areas will be avoided including the use of a biological monitor to guide heavy equipment onto the site, exclusion fencing, and reduced speed limits to assist drivers in visually noting when an animal may be moving into or off of the roadway.

**Response 4:** Surveys following CDFG (2004) guidelines were conducted in the nearest potential habitat to both project areas that was accessible based on property ownership and access restrictions, as well as habitat patches along the edges of the Ethel D Lease Site that were contiguous to potential habitat outside of the project boundaries. Slight variations to the recommendations occurred during the surveys due to some unseasonably cloudy and cool periods in both June and July. Tables showing the survey dates and results are available upon request in Appendix C. No blunt-nosed leopard lizards (BNLL) were observed during these surveys. Note, an addendum letter report to the Biological Reconnaissance Survey Results report documenting the negative survey results is also available upon request in Appendix C. The survey areas were identified by evaluating the project sites, project site history, and adjacent areas for presence of suitable habitat to support BNLL.

*21Z Lease Site:* No vegetation or small mammal burrows were observed within the work area boundaries of 21Z Lease Site; therefore, the project site itself was not considered potential habitat for this species. However, potential habitat was present approximately 50 feet to the north of the project boundary. Surveys following CDFG (2004) guidelines were conducted in potential habitat within a greater than 500-foot radius of the proposed project site with no observations of BNLL.

*Ethel D Lease Site:* Although very small patches (typically less than ½ acre) of remnant vegetation were observed within the highly developed portions of the project area at Site #2, these patches were widely spaced within the interior of the site and surrounded by extremely high density and intensity oilfield activity. Given this species' sensitivity to that extremely high level of activity, these areas were not surveyed. The basis of eliminating areas in which to conduct focused surveys is based on our experience conducting surveys following the 1990 CDFG guidelines prior to 2004, then the 2004 CDFG methods throughout a variety of potential habitat beginning in 2004. This is consistent with the preliminary findings of Fiehler and Cypher (2009) in which this species was not observed in the high intensity study plots. Habitat patches along the boundaries of the Ethel D Lease Site were surveyed following CDFG 2004 guidelines.

**Comment 5:** San Joaquin Kit Fox (SJKF): The Department recognizes that SJKF would be protected under the proposed mitigation measures in the IS/DMND so long



as it is clarified that State and Federal "take" authorization/permits are required before any den excavation could occur and occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated.

**Response 5:** Comments are noted. As stated in the Initial Study and Draft Mitigated Negative Declaration, Section IV.a., pages 36-37, Mitigation Measure *BIO-2* only provides for excavation of "potential" kit fox dens in the event they cannot be avoided in the construction area. These potential dens would be monitored in accordance with the USFWS Standardized Recommendations for Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011) prior to covering or excavation. If during monitoring, any sign is found that the den may be or has been occupied, the potential den's status changes from potential to known. As provided in Mitigation Measure *BIO-2*, any dens identified as known, or identified as suspected pupping dens shall not be excavated unless appropriate State and Federal "take authorization/permits have been obtained which authorize such actions. State and Federal "take authorization/permits are not required for potential kit fox dens when conducted in accordance with the USFWS's 2011 protocols. The recommendation to clarify that occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated would be included as a standard condition in any State and Federal "take authorization/permits. However, this clarification has also been added to Mitigation Measure *BIO-2*.

The language in *BIO-2* [*IS/DMND, page 37, bullet no. 3*] will be revised as follows: "Dens identified by a qualified biologist as either a "known" den or as a "suspected" pupping den shall not be excavated unless the appropriate California Endangered Species Act (CESA) and Federal Endangered Species Act permits authorized such excavations. In addition, any occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated."

**Comment 6:** Special-Status Kangaroo Rats: Known occurrence records document giant kangaroo rat (GKR) within 2 miles of the 21Z Lease and within 6 miles of the Ethel D Lease. In addition, known occurrence records document short-nosed kangaroo rat (SNKR) within 3 miles of both Project sites. In order to determine if GKR or SNKR occupy the Project site, focused protocol-level trapping surveys would need to be conducted by a qualified wildlife biologist that is permitted to do so by both the Department and United States Fish and Wildlife Service (USFWS). These surveys must be conducted well in advance of ground-disturbing activities in order to determine if impacts to GKR and SNKR could occur; It is important to note that GKR have been recorded in many new locations this past year demonstrating this species may be undergoing a potential expansion into currently unpopulated habitat patches within its historic known range. In order to implement full avoidance for GKR and SNKR, the Department recommends a minimum 50-foot no-disturbance buffer be employed around all burrows that could be used by these species. If full avoidance is not feasible and "take" could occur as a result of Project implementation, acquisition of a State (Incidental Take Permit) ITP for GKR would be warranted prior



to initiating ground-disturbing activities. Alternatively, the applicant has the option of assuming presence of GKR and securing a State ITP. Mitigation measures for GKR and SNKR should be fully addressed in the MND prepared for the Project.

**Response 6: GKR** – In the vast majority of cases, giant kangaroo rat precincts exhibit characteristics that enable identification of potential occupation through burrow size and configuration, scat size, and other indicators of presence. None of the typical indicators of possible presence of this species have been observed within the project site. During the surveys conducted for this project, a single area suspected to represent giant kangaroo rat activity was observed approximately 2,000 feet east northeast of the 21Z Lease Site. Another suspected giant kangaroo rat precinct was observed incidental to a site visit conducted outside of the 21Z Lease Site survey area. This observation is located approximately 2,700 feet northeast of the project site. No other evidence of sign of potential occupation by this species was observed during 2012.

**SNKR** – While this species may be present within the boundaries of Ethel D Lease Site, no suitable small mammal burrows were observed within the boundaries of 21Z Lease Site. This species may persist in some of the scattered small patches of undeveloped lands within the boundaries of the Ethel D Lease Site and along the edges of the project site. Numbers of individuals would be expected to be low given the intensity of development already present and when compared to the regional population. Therefore, the number of individuals likely to be affected by activities at the Ethel D Lease Site would be low, representing a less than significant impact to the population of this species in the vicinity of the Ethel D Lease Site.

**Comment 7: San Joaquin Antelope Squirrel (SJAS):** The Department recognizes that SJAS would be protected under the proposed mitigation measures in the IS/DMND.

**Response 7:** Comment noted.

**Comment 8: Burrowing Owl:** Known occurrence records document burrowing owl within 6 miles of the 21Z Lease and within 2 miles of the Ethel D Lease. In addition, burrowing owls have been observed nesting within the Project area (McCormick Biological, 2012). To avoid impacts to the species, focused surveys should be conducted following the survey methodology developed by the California Burrowing Owl Consortium (CBOC, 1993). If any ground-disturbing activities will occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the Project footprint, implementation of avoidance measures are warranted. In the event that burrowing owls are found, the Department's Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that impacts to occupied burrows be avoided by implementation of no-disturbance buffer zones, unless a qualified biologist approved by the Department verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Failure to implement the recommended buffer zones could cause adult burrowing owls to abandon the



nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure, in violation of Fish and Game Code and the Migratory Bird Treaty Act.

If the Project proposes to evict burrowing owls that may be present, the Department recommends passive relocation during the non-breeding season. The CEQA document should describe all avoidance measures that would be employed in the event that owls are found on the Project site, as well as methods that would be used to evict owls from burrows. The CEQA document should specify how the impact of evicting owls would be mitigated to a less than significant level. The Department's Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that foraging habitat be acquired and permanently protected to offset the loss of foraging and burrow habitat. The Department also recommends replacement of occupied burrows with artificial burrows at a ratio of 1 burrow collapsed to 1 artificial burrow constructed (1:1) as mitigation for the potentially significant impact of evicting a burrowing owl.

**Response 8:** Refer to Mitigation Measure *BIO-20* which provides for implementing avoidance measures consistent with the CDFG staff report identified above for Burrowing Owls. Note this Mitigation Measure will be revised to reflect the current [2012] CDFG Staff Report on burrowing owl mitigation.

The Biological Reconnaissance Survey Results report acknowledges that burrowing owl may occur within the project boundaries and buffer area. It is not necessary to conduct surveys per the CDFG staff report to establish that burrowing owls may be present in the vicinity. Burrowing owls will be one of the target species during preconstruction surveys conducted prior to vegetation disturbance. Burrowing owls have not been observed in large numbers during the focused blunt-nosed leopard lizard surveys within the highly disturbed portion of either site and would not be expected in high numbers in these areas. Burrowing owls frequently occur in western Kern oilfields in highly fragmented habitat patches and there is an abundance of burrowing opportunities, both natural and artificial, in the region. Finally, most of the wells proposed within the Ethel D Lease Site are in or adjacent to existing disturbed areas. Given the extensive habitat availability in the vicinity, the existing fragmentation of the habitat within the project boundaries, and the proposed avoidance of impacts to nesting burrowing owls, the loss of small patches of habitat adjacent to existing disturbance would not be a significant impact to this species. Additionally, burrowing owls that currently use these habitat types are very likely to continue to persist in extensive fragmented and intact habitat areas in the vicinity of the project sites.

**Comment 9:** Other Nesting Birds: Nesting birds have the potential to exist on the Project site. The Project proposed avoidance and minimization measures included in the IS/DMND for nesting and breeding birds are consistent with Department recommendations so long as a minimum no-disturbance buffer of 250 feet around active nests be added as an avoidance measure. No-disturbance buffers should be delineated around active nests until the breeding season has ended or until a



qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

**Response 9:** Comment noted. Mitigation Measure *BIO-20* will be revised as recommended to include the 250 foot buffer around active nests, and the buffer will be delineated around the active nests.

**Comment 10:** Special-Status Plant Species: There is the potential for multiple special-status plant species to occur on or adjacent to the Project sites. The Project sites should be surveyed for special-status plants by a qualified botanist. The Department recommends following the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (November 24, 2009). This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys may be necessary. Further, special-status plant species should be avoided whenever possible by delineation and observing a no-disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If buffers cannot be maintained, then consultation with the Department should occur to determine appropriate minimization and mitigation measures for impacts to special-status plant species. Should a State- or federally listed plant species be identified during botanical surveys then consultation with the Department and/or the USFWS should be conducted to determine the need for an ITP (issued by the Department) or a Biological Opinion (issued by the USFWS). Mitigation measures for special status plant species should be fully addressed in the MND prepared for the Project.

**Response 10:** The Biological Reconnaissance Survey Results report will be amended to include surveys for special-status plant surveys and avoidance for the portions of the Ethel D Lease Site in contiguous habitat along the edges of the project boundary if pre-construction surveys result in identification of habitat that could support the potentially occurring species. This avoidance measure will also be included as new Mitigation Measure *BIO-23*.

The language in the IS/DMND, under *Impacts to Plant Species*, page 34, paragraph 3 will be revised to: "Due to the current conditions and historic disturbance in the project areas, impacts to special-status plant species are not anticipated. However, a new mitigation measure is added to provide for conducting special-status plant surveys and avoidance for the portions of Site # 2 in contiguous habitat along the edges of the project boundary if pre-construction surveys result in identification of habitat that could support the potentially occurring species. (Refer to new Mitigation Measure *BIO-23*).

Mitigation Measure *BIO-23*: Surveys for special-status plant species and avoidance will be conducted for the portions of Ethel D Lease Site in contiguous habitat along the



edges of the project boundary if pre-construction surveys result in identification of habitat that could support potentially occurring species.

**Comment 11: Federally Listed Species:** The Department also recommends consulting with the USFWS on potential impacts to federally listed BNLL, SJKF, GKR, California jewel-flower, San Joaquin woollythreads, and Kern mallow. "Take" under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; "take" under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of Project implementation.

**Response 11:** Comments are noted. As the Berry Petroleum Company project is designed on a take avoidance basis, and no significant habitat modification or degradation will occur since any extant habitat areas will be strictly avoided, federal incidental take will not be needed for the proposed project.

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In addition to the revisions noted above, the paragraph on page 33 of the IS/DMND, under *Impacts Related to Habitat Disturbance* will be amended to include the following clarifying language: The plotted wells as shown on Figure 2 represent bottom hole locations. The surface location of any well located within an area that qualifies as habitat will be relocated to an existing disturbed area. The actual surface location of a well site can be adjusted up to 200 feet from any indicated bottom hole location. Therefore, the proposed Project will be designed to situate the surface location of the proposed wells within existing disturbed areas to avoid impacts to any potential habitat that may exist within the project area.





## Attachment 1



State of California – Natural Resources Agency  
 DEPARTMENT OF FISH AND GAME  
 Central Region  
 1234 East Shaw Avenue  
 Fresno, California 93710  
 (559) 243-4006  
[www.dfg.ca.gov](http://www.dfg.ca.gov)

EDMUND G. BROWN, Jr., Governor  
 CHARLTON H. BONHAM, Director



August 15, 2012

Mark Montelongo  
 San Joaquin Valley Air Pollution Control District  
 1990 East Gettysburg Avenue  
 Fresno, California 93726

**Subject: Initial Study and Draft Mitigated Negative Declaration  
 Berry Petroleum Company (BPC) Project  
 SCH No. 2012071066**

Dear Mr. Montelongo:

The California Department of Fish and Game (Department) has reviewed the Initial Study and Draft Mitigated Negative Declaration (IS/DMND) for the above Project. BPC is proposing to install nine (9) 85.0 MMBtu/hr gas fired steam generators and 255 thermally enhanced oil recovery (TEOR) wells within existing boundaries of the McKittrick (21Z Lease) and Midway Sunset (Ethel D Lease) oilfields in Kern County. Construction of the Project would occur over a 5 ½ year period. The McKittrick oilfield is located approximately 0.5 miles east of the town of McKittrick just north of Reserve Road. The Midway Sunset oilfield is located approximately 1 mile northeast of the town of Maricopa near the intersection of Kerto Road and Petroleum Club Road.

The San Joaquin Valley Air Pollution Control District (District) has received four (4) Authority to Construct application packages from BPC to install and operate five (5) of the planned 85.0 MMBtu/hr gas fired steam generators. Four (4) of these generators would be located at the 21Z Lease and one (1) at the Ethel D Lease. In the future, BPC would apply for Authority to Construct with the District an additional four (4) 85.0 MMBtu/hr gas fired steam generators and 255 TEOR wells within the Ethel D Lease.

The Department has concerns regarding the potential for the Project to impact special-status species known to occur in the Project area including, but not limited to, the State and federally endangered giant kangaroo rat (*Dipodomys ingens*), California jewel-flower (*Caulanthus californicus*), and blunt-nosed leopard lizard (*Gambelia sila*) which is also a State fully protected species; the State threatened and federally endangered San Joaquin kit fox (*Vulpes macrotis nutica*); the State threatened San Joaquin antelope squirrel (*Ammospermophilus nelsoni*); the federally endangered Kern mallow (*Eremalche kernensis*), and San Joaquin woollythreads (*Monolopia congdonii*); the State Species of Special Concern short-nosed kangaroo rat (*Dipodomys nitratoides*)

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*Conserving California's Wildlife Since 1870*



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*brevinasus*), San Joaquin whipsnake (*Masticophis flagellum ruddocki*), coast horned lizard (*Phrynosoma blainvillii*), American badger (*Taxidea taxus*), San Joaquin pocket mouse (*Perognathus inornatus*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), loggerhead shrike (*Lanius ludovicianus*), Le Conte's thrasher (*Thamnophis gigas*), and burrowing owl (*Athene cunicularia*), the California Rare Plant Rank 1B.1 listed Horn's milk-vetch (*Astragalus hornii* var. *hornii*), lesser saltscare (*Atriplex minuscula*), round-leaved filaree (*California macrophylla*), Tejon poppy (*Eschscholzia lemmonii* spp. *kemensis*), pale-yellow layla (*Layia heterotricha*), and oil neststraw (*Stylocline citroleum*); and the California Rare Plant Rank 1B.2 listed heartscale (*Atriplex cordulata*), Lost Hills crownscale (*Atriplex coronata* var. *vallicola*), Lemmon's jewelflower (*Caulanthus lemmonii*), recurved larkspur (*Delphinium recurvatum*), Temblor buckwheat (*Eriogonum temblorense*), Munz's tidy tips (*Layia munzii*), Jared's peppergrass (*Lepidium jaredii* ssp. *jaredii*), and showy golden madia (*Madia radiata*). All these species are known to occur on the subject site or in close proximity to the subject site, and several are known to occur even in disturbed oil fields in the Project area.

Therefore, in addition to the avoidance and minimization measures provided in the Biological Reconnaissance Survey Results for the Project (McCormick Biological, Inc., 2012), the Department is recommending additional mitigation measures to be included in the final Mitigated Negative Declaration (MND) prepared for the Project. Implementation of our recommendations would reduce the potential for Project-related impacts to sensitive biological resources and should be included as enforceable mitigation measures as appropriate for all Project-related impacts. Our comments follow.

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**Department Jurisdiction**

**Trustee Agency Authority:** The Department is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA) for commenting on projects that could impact plant and wildlife resources. Pursuant to Fish and Game Code Section 1802, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species. As a Trustee Agency for fish and wildlife resources, the Department is responsible for providing, as available, biological expertise to review and comment upon environmental documents and impacts arising from project activities, as those terms are used under CEQA (Division 13 [commencing with Section 21000] of the Public Resources Code).

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**Responsible Agency Authority:** The Department has regulatory authority over projects that could result in the "take" of any species listed by the State as threatened or



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endangered, pursuant to Fish and Game Code Section 2081. If the Project could result in the "take" of any species listed as threatened or endangered under the California Endangered Species Act (CESA), the Department may need to issue an Incidental Take Permit (ITP) for the Project. CEQA requires a Mandatory Finding of Significance if a project is likely to substantially impact threatened or endangered species (sections 21001(c), 21083, Guidelines sections 15380, 15064, 15065). Impacts must be avoided or mitigated to less than significant levels unless the CEQA Lead Agency makes and supports a Statement of Overriding Consideration (SOC). The CEQA Lead Agency's SOC does not eliminate the Project proponent's obligation to comply with Fish and Game Code Section 2080. The Project has the potential to reduce the number or restrict the range of endangered, rare, or threatened species (as defined in Section 15380 of CEQA).

**Unlisted Species:** Species of plants and animals need not be officially listed as Endangered, Rare, or Threatened (E, R, or T) on any State or Federal list to be considered E, R, or T under CEQA. If a species can be shown to meet the criteria for E, R, or T, as specified in the CEQA Guidelines (California Code of Regulations, Title 14, Chapter 3, Section 15380), it should be fully considered in the environmental analysis for the Project.

**Fully Protected Species:** The Department has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish pursuant to Fish and Game Code sections 3511, 4700, 5050, and 5515. "Take" of any fully protected species is prohibited and the Department cannot authorize their "take".

**Bird Protection:** The Department has jurisdiction over actions which may result in the disturbance or destruction of active nest sites or the unauthorized "take" of birds. Fish and Game Code sections that protect birds, their eggs, and nests include sections 3503 (regarding unlawful "take," possession or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the "take," possession or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful "take" of any migratory nongame bird).

#### Potential Project Impacts and Recommendations

**Blunt-nosed Leopard Lizard (BNLL):** Known occurrence records document BNLL within 1.5 miles of the 21Z Lease and 1 mile of the Ethel D Lease. Species-specific surveys for BNLL were conducted at the Ethel D Lease Project site in 2011 which resulted in negative results. Currently, surveys are being conducted at the 21Z Lease Project site. The Department is unclear what survey methodology was/is being used for these surveys since data sheets were not provided in the Biological Reconnaissance



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Survey Result Report prepared by McCormick Biological, Inc., dated June 1, 2012. Therefore, absent additional information, the Department is unable to concur with the negative results of the above survey efforts. The Department recognizes that the IS/DMND states in mitigation measure BIO-1 of the report that BNLL surveys would be completed no more than one year prior to initiation of the Project if construction activities will impact potential habitat. Suitable BNLL habitat includes all areas of grassland and shrub scrub habitat that contains required habitat elements, such as small mammal burrows. BNLL are also known to utilize open space patches between suitable habitats including disturbed sites and unpaved access roadways. Because BNLL is fully protected and, therefore, no "take" incidental or otherwise can be authorized by the Department, in disturbed open areas where small mammal burrows are available within 500 feet of proposed construction activities, protocol-level surveys should be conducted. Based on the information provided in the McCormick Biological Report, the Department has determined that both Project sites include potential habitat.

To observe avoidance of BNLL, focused surveys should be conducted following the 2004 survey methodology titled "Approved Survey Methodology for the Blunt-nosed Leopard Lizard", which was developed by the Department. These surveys, the parameters of which were designed to optimize detectability, must be conducted to reasonably assure the Department that "take" of this fully protected species will not occur as a result of Project implementation. It is important to note that protocol-level surveys must be conducted on multiple dates during late spring, summer, and fall and that within these time periods there are specific date, temperature, and time parameters which must be adhered to; as a result, protocol-level surveys for this species are not synonymous with 30-day "pre-construction" surveys often recommended for other wildlife species.

In addition, all potential burrows which could be occupied by BNLL should be avoided and all individuals observed to be above ground avoided as well. DFG also recommends that in all areas where ground-disturbing Project activities will occur, suitable burrows within and adjacent to potential habitat for BNLL should be avoided by a minimum 50 feet; that an appropriate number of qualified biologists be present during all ground-disturbing Project activities to ensure that BNLL above ground are not impacted; and that any individual that may enter an area of Project activity be allowed to leave unobstructed on its own. Dirt roads can be important habitat features for BNLL, and because the Project would result in an increase in traffic during construction which increases the potential for vehicle strikes, the MND should clearly state how impacts to individual BNLL using those areas will be avoided including the use of a biological monitor to guide heavy equipment onto the site, exclusion fencing, and reduced speed limits to assist drivers in visually noting when an animal may be moving into or off of the roadway.



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**San Joaquin Kit Fox (SJKF):** The Department recognizes that SJKF would be protected under the proposed mitigation measures in the IS/DMND so long as it is clarified that State and Federal "take" authorization/permits are required before any den excavation could occur and occupied natal or pupping dens cannot be destroyed until the pups and adults have vacated.

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**Special-Status Kangaroo Rats:** Known occurrence records document giant kangaroo rat (GKR) within 2 miles of the 21Z Lease and within 6 miles of the Ethel D Lease. In addition, known occurrence records document short-nosed kangaroo rat (SNKR) within 3 miles of both Project sites. In order to determine if GKR or SNKR occupy the Project site, focused protocol-level trapping surveys would need to be conducted by a qualified wildlife biologist that is permitted to do so by both the Department and United States Fish and Wildlife Service (USFWS). These surveys must be conducted well in advance of ground-disturbing activities in order to determine if impacts to GKR and SNKR could occur. It is important to note that GKR have been recorded in many new locations this past year demonstrating this species may be undergoing a potential expansion into currently unpopulated habitat patches within its historic known range. In order to implement full avoidance for GKR and SNKR, the Department recommends a minimum 50-foot no-disturbance buffer be employed around all burrows that could be used by these species. If full avoidance is not feasible and "take" could occur as a result of Project implementation, acquisition of a State ITP for GKR would be warranted prior to initiating ground-disturbing activities. Alternatively, the applicant has the option of assuming presence of GKR and securing a State ITP. Mitigation measures for GKR and SNKR should be fully addressed in the MND prepared for the Project.

6

**San Joaquin Antelope Squirrel (SJAS):** The Department recognizes that SJAS would be protected under the proposed mitigation measures in the IS/DMND.

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**Burrowing Owl:** Known occurrence records document burrowing owl within 6 miles of the 21Z Lease and within 2 miles of the Ethel D Lease. In addition, burrowing owls have been observed nesting within the Project area (McCormick Biological, 2012). To avoid impacts to the species, focused surveys should be conducted following the survey methodology developed by the California Burrowing Owl Consortium (CBOC, 1993). If any ground-disturbing activities will occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the Project footprint, implementation of avoidance measures are warranted. In the event that burrowing owls are found, the Department's Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that impacts to occupied burrows be avoided by implementation of no-disturbance buffer zones, unless a qualified biologist approved by the Department verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles

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from the occupied burrows are foraging independently and are capable of independent survival. Failure to implement the recommended buffer zones could cause adult burrowing owls to abandon the nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure, in violation of Fish and Game Code and the Migratory Bird Treaty Act.

If the Project proposes to evict burrowing owls that may be present, the Department recommends passive relocation during the non-breeding season. The CEQA document should describe all avoidance measures that would be employed in the event that owls are found on the Project site, as well as methods that would be used to evict owls from burrows. The CEQA document should specify how the impact of evicting owls would be mitigated to a less than significant level. The Department's Staff Report on Burrowing Owl Mitigation (CDFG 2012) recommends that foraging habitat be acquired and permanently protected to offset the loss of foraging and burrow habitat. The Department also recommends replacement of occupied burrows with artificial burrows at a ratio of 1 burrow collapsed to 1 artificial burrow constructed (1:1) as mitigation for the potentially significant impact of evicting a burrowing owl.

**Other Nesting Birds:** Nesting birds have the potential to exist on the Project site. The Project proposed avoidance and minimization measures included in the IS/DMND for nesting and breeding birds are consistent with Department recommendations so long as a minimum no-disturbance buffer of 250 feet around active nests be added as an avoidance measure. No-disturbance buffers should be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival.

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**Special-Status Plant Species:** There is the potential for multiple special-status plant species to occur on or adjacent to the Project sites. The Project sites should be surveyed for special-status plants by a qualified botanist. The Department recommends following the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (November 24, 2009). This protocol, which is intended to maximize detectability, includes the identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. In the absence of protocol-level surveys being performed, additional surveys may be necessary. Further, special-status plant species should be avoided whenever possible by delineation and observing a no-disturbance buffer of at least 50 feet from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If buffers cannot be maintained, then consultation with the Department should occur to determine appropriate minimization and mitigation measures for impacts to special-status plant species. Should a State- or federally listed plant species be identified during botanical surveys then consultation with the

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Department and/or the USFWS should be conducted to determine the need for an ITP (issued by the Department) or a Biological Opinion (issued by the USFWS). Mitigation measures for special status plant species should be fully addressed in the MND prepared for the Project.

**Federally Listed Species:** The Department also recommends consulting with the USFWS on potential impacts to federally listed BNLL, SJKF, GKR, California jewel-flower, San Joaquin woollythreads, and Kern mallow. "Take" under the Federal Endangered Species Act (FESA) is more broadly defined than CESA; "take" under FESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of Project implementation.

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More information on survey and monitoring protocols for sensitive species can be found at the Department's website ([www.dfg.ca.gov/wildlife/nongame/survey\\_monitor.html](http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html)). If you have any questions on these issues, please contact Reagen O'Leary, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014, extension 244, or by electronic mail at [roleary@dfg.ca.gov](mailto:roleary@dfg.ca.gov).

Sincerely,

  
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Regional Manager

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