

**UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
BAKERSFIELD FIELD OFFICE**

**Environmental Assessment**

**Atwell Island Extensive Recreation Management Area  
Orphan Well Abandonment  
DOI-BLM-CA-C060-2016-0053-EA**

**Chapter 1. Purpose and Need**

**PURPOSE AND NEED**

Bureau of Land Management (BLM) proposes to conduct well abandonment and site restoration for five (5) orphaned gas wells within the Trico Gas Field: Anderson Unit 1 #1-12, Anderson Unit 2 #2-12, Tidewater Associated Fee #2, Tidewater Associated Fee #3, and Guy 1. These wells are located on BLM managed lands within the Atwell Island Extensive Recreation Management Area (ERMA) and the Sand Ridge Unit of the Ancient Lakeshores Area of Critical Environmental Concern (ACEC); BLM does not manage subsurface mineral rights within the project footprint. The Atwell Island ERMA can be accessed using Road 38 in Alpaugh, California. California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (CDOGGR) would serve as contractors for this project and would oversee downhole plug and abandonment activity as well as basic re-contouring of each well location. All ancillary facilities including separators, meters, concrete slabs, and wooden well cellar covers would be removed from site and all underground piping would be purged, capped and abandoned in place.

The purpose of the proposed action is to restore portions of the Atwell Island ERMA and a portion of the Sand Ridge Unit of the Ancient Lake Shores Area of Critical Environmental Concern (ACEC) to native habitat for wildlife viewing and appreciation activities. The need for the proposed action is to meet ERMA, ACEC and biological goals, objectives, and decisions committed to in the 2014 Bakersfield Field Office Record of Decision and Approved Resource Management Plan.

This Environmental Assessment (EA) has been prepared in compliance with the National Environmental Policy Act (NEPA) and other relevant federal and state laws and regulations. The purpose of this document is to disclose the analysis of environmental consequences that are anticipated from the abandonment of 5 orphaned gas wells and ancillary facilities within the Atwell Island ERMA and the Sand Ridge Unit of the Ancient Lake Shores ACEC.

**CONFORMANCE WITH BLM LAND USE PLANS**

The proposed action has been reviewed for conformance with the Bakersfield Resource Management Plan approved on December 22, 2014; it has been determined that the proposed

action conforms with the land use plan, terms, and conditions as required by 43 CFR 1610.5. The proposed action and modifications were specifically provided for in the following land use plan decision:

**[AC-1] Ancient Lakeshores ACEC:**

**[Goal]** Protect and preserve important cultural resources, natural systems and processes, and habitat for listed species.

**[Objective]** Protect significant cultural resources from degradation. Maintain rare alkali sink plant communities and ensure no net loss of associated habitat for state and federally listed plants and animals.

**[BR-G-1]** Contribute to maintaining the biotic diversity within the Planning Area. Ensure public lands provide for a diversity of native species, ecosystems, and ecosystem processes.

**[BR-O-1]** Maintain or improve the quality and diversity of biological resources through maintenance, enhancement, and restoration of habitats. Manage public lands to meet or exceed the Standards for Rangeland Health.

**[BR-D-4]** Administratively delineate and manage Atwell Island for protection of sensitive biological resources and to restore retired farmlands to native habitat, including wetlands.

**[RVS-D-4] Recreation Objective:** Within the life of the RMP the Atwell Island ERMA will offer recreation opportunities in a front country setting (restored wetland from abandoned farmland), that focus of wildlife viewing and appreciation, through the non-motorized/non-mechanized exploration of the restored area(s).

## **RELATIONSHIP TO STATUTES, REGULATIONS AND OTHER PLANS**

### Endangered Species Act

The Endangered Species Act of 1973 (ESA) requires federal agencies to complete formal consultation with the United States Fish and Wildlife Service (FWS) for any action that “may affect” federally listed species or critical habitat. The ESA also requires federal agencies to use their authorities to carry out programs for the conservation of endangered and threatened species.

BLM completed formal consultation with the FWS for the Bakersfield RMP; the proposed action is in accordance with provisions of the Bakersfield RMP Biological Opinion. Additionally, this project would have no effect on federally listed species or critical habitat.

### Clean Air Act

The San Joaquin Valley Unified Air Pollution Control District has state air quality jurisdiction over the project area. Section 176(c) of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 et seq.) and regulations under 40 CFR part 93, subpart W, with respect to conformity of general Federal actions to the applicable State Implementation Plan (SIP) apply to projects within nonattainment and maintenance areas. Under those authorities “no department, agency or

instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.” Under CAA 176(c) and 40 CFR part 93 subpart W, a Federal agency must make a determination that a Federal action conforms to the applicable implementation plan before the action is taken.

#### National Historic Preservation Act of 1966, as amended

Section 106 of the National Historic Preservation Act (NHPA) requires agencies to make a reasonable and good faith effort to identify historic properties that may be affected by an agency’s undertakings and take those effects into account in making decisions. The BLM process for implementing this NHPA requirement is set forth in the State Protocol Agreement Among the California State Director of the Bureau of Land Management and the California State Preservation Officer and the Nevada State Historic Preservation Officer (2014).

#### Clean Water Act

The Clean Water Act of 1977 establishes authority to regulate any action where pollutants may be discharged into waters of the United States. Section 303 of the federal Clean Water Act requires states to adopt water quality standards that “consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses.” In California, these water quality standards and the administrative policies and procedures for protecting state waters are disclosed in regional water quality control board basin plans. Hence, California’s basin plans serve as regulatory references for meeting both State and federal requirements for water quality control (40 CFR Parts 130 and 131). These basin plans establish standards for ground waters in addition to surface waters, unlike the federal program.

The Clean Water Act also established the National Pollutant Discharge Elimination System (NPDES) permit program, regulating point source discharges of pollutants into waters of the United States. Section 402 of the Clean Water Act provides that storm water discharges associated with industrial activity and construction must be authorized under a NPDES permit. Clearing, grading, and excavation projects that disturb more than one acre are required to obtain a NPDES storm water discharge permit under EPA regulations, though certain regulations such as 40 CFR parts 122.26 (a)(2), (e)(8), and (c)(1)(iii) codify exemptions for oil and gas operations.

#### Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) of 1974 regulates the nation’s public drinking water supply to protect public health. SDWA authorizes the U.S. EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water.

#### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) of 1976 establishes a regulatory structure for the management and disposal of solid and hazardous wastes. Solid wastes consist of any discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities. Solid wastes include both hazardous and nonhazardous waste. A waste may be considered

hazardous if it is ignitable, corrosive, reactive, or contains certain amounts of toxic chemicals. Subtitle C of the RCRA creates a cradle-to-grave management system for hazardous waste, governing the generation, transportation, treatment, storage, and disposal of hazardous wastes. Subtitle D regulates the management of nonhazardous solid waste, establishing minimum federal technical standards and guidelines for state solid waste plans in order to promote environmentally sound management of solid waste.

## **Chapter 2. Proposed Action and Alternatives**

### **ALTERNATIVE 1: PROPOSED ACTION**

BLM proposes to contract CDOGGR to conduct five (5) orphan well abandonment and site restorations within the Atwell Island ERMA and Sand Ridge Unit of the Ancient Lake Shores ACEC. The five (5) wells include:

- Anderson Unit 1 #1-12 (Section 12, Township 24 South, Range 22 East, MDBM)
- Anderson Unit 2 #2-12 (Section 12, Township 24 South, Range 22 East, MDBM)
- Tidewater Associated Fee #2 (Section 16, Township 24 South, Range 23 East, MDBM)
- Tidewater Associated Fee #3 (Section 16, Township 24 South, Range 23 East, MDBM)
- Guy 1 (Section 7, Township 24 South, Range 23 East)

CDOGGR contractors would utilize a series of existing roads throughout Atwell Island to access well locations; all well and ancillary facilities are within 100 feet of an existing road, except for Guy 1. Mobile and other demolition equipment and ancillary facilities would be staged within a 100 by 200 foot mowed area, where mowing and vegetation disturbance would be conducted to the minimum extent practicable; access to Guy 1 would require a larger disturbance footprint due to the need for a temporary new “road.”

There are a number of aged wells, separators, meters, concrete slabs, wooden well cellar covers, and underground pipeline installed within the project footprint; CDOGGR would remove all items and dispose of at an approved facility, or in the case of underground pipeline, cap and abandon in place. Downhole abandonment of the gas wells would require digging 5 to 10 feet under surface, where piping would be cut after being filled with an inert fluid such as cement. A section containing conditions of project completion activities is included within this analysis, specifically referring to CDOGGR well abandonment and lease restoration procedures.

Following all downhole abandonment and ancillary facility removal, CDOGGR would perform basic re-contouring of the location so as to return the project site to pre-disturbance conditions. No depressions would be left that trap water or form ponds. BLM would then perform any additional associated restoration work for vegetation and erosion control, which would include distributing locally collected seed within the affected area.

#### ***The following conditions would apply to the project as stipulations set forth by CDGOGGR Well Abandonment and Lease Restoration Procedure (8.08.300):***

A. Well Abandonment. Prior to starting the plugging and abandonment of any well, the operator shall furnish the Petroleum Administrator with copies of the DOGGR notices required in Section 8.08.080, a copy of the DOGGR permit to conduct abandonment operations and the

anticipated date the plugging and abandonment operations are to commence. Any substantial changes in procedure or schedule shall likewise be furnished to the Petroleum Administrator by the operator.

1. The subsurface plugging and abandonment of the well shall be done in accordance with current DOGGR regulations. The operator shall furnish the Petroleum Administrator with the DOGGR notice required in Section 8.08.080 to verify compliance with all DOGGR requirements.

2. All drilling, production and appurtenant equipment, including pipelines, designated for the exclusive use of the subject well shall be removed. Existing pipelines and equipment designated for current operations may be left in place. The operator may petition the Petroleum Administrator to leave equipment and pipelines, designated for future use, in place.

3. The well casing shall be cut off at least five feet below the ground level. Nothing shall be placed in the excavation above the point of cutoff until the cutoff has been inspected by the Petroleum Administrator.

4. The surface cement plug depth shall conform to the requirements of the DOGGR.

5. A steel cap of not less than the same thickness as the well casing shall be welded to the casing. The steel cap shall be located via GPS and the well number and API number shall be welded on the top of the casing.

6. An investigation shall be conducted to determine if a sump or pit is present. If a sump or pit is found to be present it will be remediated per an approved plan.

7. All cellars and surface concrete structures shall be removed. Tie downs shall be removed to a minimum of six feet below ground surface. Soil below the cellars shall be tested for hydrocarbon contamination. If contamination is found to be present the area shall be remediated. All excavations and depressions shall be filled with clean soil. All oil, waste oil, refuse and waste material shall be removed from the drill site pursuant to all applicable laws and regulations.

#### B. Lease Restoration.

1. The petroleum unit will be the coordinating agency. The petroleum unit will coordinate with grading, planning and development, the fire department and other agencies, as required, to ensure all lease restoration requirements have been addressed.

2. Schedule. Prior to the abandonment of the last well on a lease, the operator shall file with the Petroleum Administrator a plan, for approval, to restore the lease to a condition in conformance with state, county, and local ordinances.

a. Partial lease restoration/remediation activities may be conducted at any time as detailed in this chapter. The record of any partial lease restoration shall be kept on file by the Petroleum Administrator as part of the final restoration package.

b. Facilities idle for over 15 years that have no reasonable potential of future use and:

i. Are a potential threat to public health; or

ii. Are a potential threat to the environment; or

iii. At the request of the surface owner shall be removed in a timely manner. For the purposes of this paragraph, a lack of reasonable potential of future use may be indicated by the cancellation of APCD permits, a continuous lack of maintenance around the facility, or similar indications as determined by the Petroleum Administrator of de facto abandonment. Upon

request, the operator shall submit to the Petroleum Administrator a list of all facilities that have been idle for over 10 years. To retain such facilities after the 15-year limitation, the operator shall submit to the Petroleum Administrator for approval a letter justifying why said facility is of value and should not be removed.

c. Equipment Removal.

i. Tank batteries, production islands, gas treating/compression areas, all appurtenant equipment areas, pipelines and foundations shall be removed. An investigation shall be conducted to determine if soil contamination is present. If soil contamination is found, the area will be remediated per the approved plan.

ii. Flow Lines and Utilities. All flow lines, gathering lines and other lease pipelines shall be flushed with water and removed, unless due to location the removal will cause more environmental damage than the potential benefit by its removal. The soil shall be sampled along the lines at a rate specified in the approved plan. Power and telephone lines shall be removed. Transformer locations that existed prior to 1970 shall be tested for PCBs.

iii. All buildings shall be removed from the lease. Buildings and areas used for storage and/or testing shall have an investigation to determine if soil contamination exists. If soil contamination is found the impacted area shall be remediated per an approved plan.

iv. Sumps, Pits and Areas of Soil Contamination. An investigation shall be conducted in locations of historic sumps, pits and known soil contamination. If soil impacts are identified, the areas shall be remediated per the approved plan. The original soil contamination locations shall be determined by GPS coordinates and shall be permanently kept on file by the Petroleum Administrator.

v. Roads and Well Site. Roads and well sites shall be removed and the areas re-contoured to as close to natural slope as reasonable.

vi. Completion. Upon completion of full site restoration the Petroleum Administrator will furnish a closure letter to the operator.

D. Exception. The Petroleum Administrator may modify any of the above conditions upon demonstration of good cause by the applicant that the intent of the above conditions has been met. (Ord. 02-01 § 1).

### **BLM Design Features**

Any area cleared for project purposes would be implemented through mowing. Mobile source emitters (such as work trucks and mowers) would be used to the minimum extent practicable. In addition, vehicles would abide by a 20 mile per hour speed limit on all unpaved roads and refrain from unnecessary vehicle idling.

#### Cultural Resources

1. Cultural Resources Monitoring- The presence of an archaeological monitor is required during all ground surface disturbing activities. This includes all excavation associated with the removal of all abandoned infrastructure, In the event that cultural resources are discovered, The operator shall suspend all activities in the vicinity of such a discovery and shall protect the discovery from damage or looting until the

discovery has been assessed and appropriate measures for avoidance or mitigation can be implemented. Work shall not proceed without written authorization from the BLM.

## **ALTERNATIVE 2: NO ACTION**

Under this alternative, BLM would not contract CDOGGR to perform abandonment activities for the five (5) orphan gas wells within the Atwell Island ERMA and Sand Ridge Unit of the Ancient Lake Shores ACEC. By taking no action, BLM would not meet the goals and objectives, or implement the management decisions outlined in the 2014 Bakersfield Field Office Record of Decision and Approved Resource Management Plan.

### **Chapter 3. Affected Environment**

This chapter briefly describes the physical and regulatory environment for elements that may be affected by the proposed action.

The proposed project area is within the Atwell Island ERMA and Sand Ridge Unit of the Ancient Lakeshores ACEC, which have lands situated within the Trico Gas Field. The project area consists of retired and current agricultural lands within the San Joaquin Valley. In addition, the Atwell Island Project contains portions of the once widespread lakeshore environments within the San Joaquin Valley. Two of the proposed well abandonments, Anderson Unit 1 #1-12 and 2 #2-12, are within the boundary of the Sand Ridge Unit of the Ancient Lakeshores ACEC; this area contains prime examples of rare alkali sink communities and iodine bush series vegetation. There are hundreds of active and abandoned gas wells within the Trico Gas Field; CDOGGR has record of abandoning a number of these wells on private lands adjacent to the project site.

The following elements of the human environment were considered but determined to be either not present or unaffected by the proposed action and will therefore not be addressed further in this analysis. The project will not affect special status species or species of concern. The project does not contain essential fish habitat, and there are no wetlands or riparian zones within or near the project footprint that would be affected. The proposed project is located on a BLM grazing allotment; however there are no plans for grazing within the project area. In addition, water resources were determined to not be affected. A cultural resource inventory was conducted for the Area of Potential Effect (APE) for the proposed action (BLM CRIR# 6000-2016-19).

Cultural Resources consisting of the miscellaneous gas field equipment proposed for removal are within the project APE. These features were formally evaluated for National Register of Historic Places eligibility and determined to be ineligible due to a lack of integrity. Therefore they do not constitute historic properties as defined by the National Historic Preservation Act. A certified letter containing maps and a description of the proposed project was mailed to Native American tribes affiliated with the project area. Although no known places of cultural importance to these groups which could be affected was specifically identified, due to the potential sensitivity described above, one of the recipients indicated that they wished to participate in project monitoring. As a result, no known unevaluated cultural resources or places of cultural importance to tribes or their access to them will be impacted and measures to address affects to potential discoveries are included with project stipulations.

## **Air Quality**

The proposed project area is located in Kings and Tulare Counties, California, and within the San Joaquin Valley Air Basin. At the state level, air regulatory duties lie with the California Air Resources Board (CARB) and at the federal level with the U.S. Environmental Protection Agency (EPA), Region IX. Oversight authority for air quality matters in California has been delegated to the county (District) level. The BLM has air program responsibilities through its permitting programs and Clean Air Act (CAA) requirements to analyze all actions for conformity to air quality plans.

The federal Clean Air Act (CAA), as amended, and the California Clean Air Act (CCAA) contain the primary provisions relating to air quality. Provisions of the federal CAA that apply to BLM actions include the National Ambient Air Quality Standards (NAAQS), nonattainment area designation, the development of state implementation plans (SIPs), prevention of significant deterioration (PSD), air toxics, and federal conformity. The U.S. EPA, CARB, and regional air districts have issued rules to implement federal and state Clean Air Acts.

EPA uses "criteria pollutants" as indicators of air quality and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called [National Ambient Air Quality Standards \(NAAQS\)](#). One set of limits (primary standard) protects health; another set of limits (secondary standard) is intended to prevent environmental and property damage. Under the federal CAA, the U.S. EPA has established NAAQS for seven criteria pollutants: ozone, respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. California has established state Ambient Air Quality Standards for the same criteria pollutants, plus an additional three pollutants (visibility reducing particulates, sulfates, and hydrogen sulfide). States may have standards that are more restrictive than the federal thresholds, but they cannot be less restrictive. Although more stringent, the State standards have no specific dates to attain, unlike federal standards. Under State law, designations are made by pollutant, rather than by averaging time. A geographic area that meets or exceeds the primary standard is called an attainment area; areas that do not meet the primary standard are called nonattainment areas (<http://www.epa.gov/air/caa/peg/>).

Federal air quality standards for PM<sub>2.5</sub> and ozone have been exceeded in the San Joaquin Valley air basin due to locally generated and/or transported in pollutants. This has resulted in the current designation of the air basin as a federal non-attainment area for PM<sub>2.5</sub> and ozone under the NAAQS. The air basin has recently been designated as a federal maintenance area for PM<sub>10</sub>. Based on the EPA 2010 designations, the primary pollutants of concern in the Project area are 8-hour ozone, PM<sub>10</sub>, and PM<sub>2.5</sub>. The remaining criteria pollutants are either unclassified or in attainment with the NAAQS.

The proposed project area is within the EPA Pacific Southwest Region 9 Planning Area; a State Implementation Plan (SIP) has been prepared for the planning area, which identifies sources of emissions and control measures to reduce emissions. In 2007, CARB adopted the State Strategy for achieving emissions reductions toward bringing these areas into attainment with federal

standards for ozone and PM<sub>2.5</sub>. The SIP mainly addresses stationary sources that have been identified as major contributors affecting regional air quality, such as power plants, facilities, etc.

District air quality plans that have recently been adopted and are relevant to the proposed Project include the *SJVAPCD 2007 Ozone Plan, 2013 Plan for the Revoked 1-Hour Ozone Standard, 2012 PM<sub>2.5</sub> Plan, and 2007 PM<sub>10</sub> Maintenance Plan*. These plans outline the strategy for achieving federal air quality standards by specific dates and identify control measures to reduce criteria pollutant emissions. Control measures identified in the *2007 Ozone Plan* reduce ozone precursor emissions, NO<sub>x</sub> and Volatile Organic Compounds (VOCs). Particulate matter attainment strategies include control measures to reduce dust from unpaved roads and construction activities.

### ***Applicable SJVAPCD Rules to Implement Air Quality Plans***

Once air quality attainment demonstration Plans are adopted, the reductions necessary to meet the respective reduction mandates contained in the Plan(s) are achieved through prohibitory rules created and enforced by the local air quality board/APCD. Compliance with applicable Rules, Regulations, and land use and zoning requirements ensures continued movement towards achieving the SJVAPCD attainment goals. Examples of SJVAPCD rules that may be applicable to the proposed project are described below

*Regulation VIII (Fugitive PM<sub>10</sub> Prohibitions)*: The purpose of Regulation VIII is to reduce ambient concentrations of particulate matter (PM<sub>10</sub>) by requiring actions to prevent, reduce, or mitigate anthropogenic fugitive dust emissions. Regulation VIII rules pertinent to the proposed project include, but are not limited to, the following:

*Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities)*: This rule limits fugitive dust emissions (PM<sub>10</sub>) from construction, demolition, excavation, extraction, and other earthmoving activities. This rule applies to any such activity and other earthmoving activities, including, but not limited to, land clearing, grubbing, scraping, travel on-site, and travel on access roads to and from the site.

*Rule 8031 (Bulk Materials)*: The purpose of this rule is to limit fugitive dust emissions from the outdoor handling, storage, and transport of bulk materials.

### ***Conformity Determination***

The classification of any area as a federal nonattainment and/or maintenance area brings an additional requirement for federal agencies. Section 176(c) of the CAA, as amended (42 U.S.C. 7401 et seq.), and regulations under 40 CFR, part 93, subpart W, state that “no department, agency or instrumentality of the federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan.” This means that under the CAA 176(c) and 40 CFR, part 93, subpart W (conformity rules), federal agencies must make a determination that proposed actions in federal nonattainment areas conform to the applicable EPA approved implementation plans (if pertinent) before the action is taken.

## **Area of Critical Environmental Concern & Extensive Recreation Management Area and Biological Resources**

This project is located within a portion of the Sand Ridge Unit of the Ancient Lakeshores Area of Critical Environmental Concern (ACEC) and the Atwell Island Extensive Recreation Management Area (ERMA) under the 2014 Bakersfield Resource Management Plan. BLM has designated these areas as an ACEC and ERMA to restore retired farmlands to native habitat and to provide recreational opportunities for the public.

These lands contain habitat for special status species and migratory birds. Most notably, the ACEC and ERMA provide habitat for horned lizard, mountain plover, San Joaquin kit fox and Tipton kangaroo rat. Also, Atwell Island ACEC has been designated for management of wetland and riparian habitat.

### **Soil Resources**

Two soil map units occur in the proposed project area: Posochanet silt loam (#141tw; 0-2% slopes) and Nahrub silt loam, overwashed (#129; 0-1% slopes).

Anderson Unit 1 #1-12 and Anderson Unit 2 #2-12 occur on soil map unit Posochanet silt loam. These soils are present on fan skirts and are considered farmland of statewide importance. The typical profile of these soils contain silt loam, stratified fine sandy loam to silty clay loam, and stratified silty clay loam to silty clay. Overall, these soils are moderately well drained, runoff is low, and the hazard of water erosion could be moderately high.

The above mentioned soil map unit has a water erosion K factor, whole soil rating of 0.55. Values of K can range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Therefore, these soils have a relatively high susceptibility to water erosion. The Posochanet map unit is assigned to wind erodibility group 6. A wind erodibility group consists of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The wind erodibility group provides an indication of how susceptible areas disturbed by construction activities are to wind erosion. Soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. Therefore, there is a low potential for wind erosion on the proposed project locations.

Tidewater Associated Fee #2 and #3 as well as Guy 1 occur on soil map unit Nahrub silt loam. These soils are present on rims and are considered farmland of statewide importance. The typical profile of these soils contain silt loam and clay. Overall, these soils are somewhat poorly drained, runoff is medium, and the hazard of water erosion could be moderately high.

The Nahrub map unit is assigned to K factor, whole soil rating of 0.55, therefore these soils have a relatively high susceptibility to water erosion. The wind erodibility group for these soils is 4 low, making them moderately susceptible to wind erosion.

Soils within the project area have been heavily impacted by agriculture, water well drilling, and have also been developed due to natural gas potential. Although soils are considered farmland of statewide importance, BLM has no future plans to develop these lands for agricultural purposes as they have been retired in order to manage for upland habitat for special status species and recreation activities.

## **Water Quality**

The proposed project is within the San Joaquin Basin of the Tulare Lake Hydrologic Region. This basin is bound on the east and southeast by granitic bedrock of the Sierra Nevada foothills and Tehachapi Mountains, and on the southwest and west by the marine sediments of the San Emigdio Mountains and Coast Ranges. According to California Department of Water Resources, “groundwater has historically been important to both urban and agricultural uses, accounting for 41 percent of the region’s total annual supply and 35 percent of all groundwater use in the State. Groundwater use in the region represents about 10 percent of the State’s overall supply for agricultural and urban uses.” The subbasin aquifers in the San Joaquin Valley are generally quite thick, commonly exceeding 1,000 feet in depth. The maximum thickness of freshwater-bearing deposits (4,400 feet) occurs at the southern end of the subbasin (DWR, 2003).

In general, water quality within the project area and surrounding areas is poor for human consumption, as arsenic levels are high; this appears to be associated with lakebed areas (DWR, 2003). In addition, boron is prevalent in the water. Groundwater is used for consumption and agricultural purposes, and some is also channeled through a man-made canal near the project area. A restored wetland within the Atwell Island Project utilizes groundwater sources through use of a water well onsite. There are numerous water wells within the Atwell Island project, all of which retrieve water from an aquifer with a base of about 1,200 feet underground.

## **Chapter 4. Environmental Impacts**

### **Air Quality**

#### **Proposed Action:**

Temporary air emissions associated with this project would be limited to operation of mowers, work trucks, and any other portable emissions equipment used to conduct abandonment activity. In addition, air emissions would be minimized through limiting soil disturbance by use of mower for preparation of equipment staging and access, establishing 20 mile per hour speed limits, and limiting the number of emissions producing equipment on the project site. Finally the implementation of SJVAPCD regulations and rules such as Regulation VII, Rule 8021, and Rule 8031 would limit fugitive dust emissions during the demolition, excavation, and other earthmoving activities. Air emissions from this project would be *de minimus* and therefore not require a conformity determination (40 CFR Part 93.153).

#### **No Action**

There would be no additional impacts to air quality from the No Action alternative. However, not conducting the proposed abandonments would neither result in the San Joaquin Valley Air

Basin coming closer to conformance with federal air quality standards or aid in the achievement of goals in the SIP.

### **Area of Critical Environmental Concern & Extensive Recreation Management Area and Biological Resources**

#### **Proposed Action:**

Temporary disturbance to habitat would be expected from the use of mowers and equipment operation. By conducting gas well abandonment operations in the ACEC and ERMA, BLM would meet the goal of restoring retired farmlands to native habitat. In addition, the project is not located in restored wetland areas used by wetland occupying birds or migratory birds. These areas are also not occupied by endangered or sensitive species such as San Joaquin kit fox, Tipton kangaroo rat, or horned lizard. Furthermore, design features of the project would limit disturbance of habitat to the most practicable amount. This project will contribute to the management goals, objectives, and decisions of the Bakersfield RMP and is not likely to adversely affect sensitive or special status species.

#### **No Action**

There would be no additional impacts to the ACEC & ERMA and biological resources from the No Action alternative. However, by not conducting abandonment activities, BLM would not contribute to the goals, objectives, and management decisions of the Bakersfield RMP for Atwell Island ACEC and Sand Ridge Unit of the Ancient Lakeshores ERMA.

### **Soil Resources**

#### **Proposed Action:**

This project would temporarily impact soil resources, where excavation, equipment traffic, and facilities removal will occur; measures such as mowing would be used to minimize disturbance to soil resources. In addition, water and wind erosion due to soil disturbance would be minimized or eliminated by re-contouring and restoration of the project site. Wind erosion from dirt work and increased vehicle traffic would be reduced by complying with SJVAPCD Regulation VIII, Rule 8021, and Rule 8031, resulting in negligible impacts to soil resources.

#### **No Action**

There would be no additional impacts to the soil from the No Action alternative. However, by not conducting the proposed action, restoration of these specific soils within the management area would not occur and therefore not contribute to achieving the goals, objectives, and management decisions committed to in the RMP.

### **Water Quality**

#### **Proposed Action:**

This project would not affect water quality, as water sources are either not close enough to the project footprint to be affected or are not affected because of location underground. Above ground water sources, such as the canal and wetlands, are not within close enough distance to the project footprint to be directly or indirectly impacted by activity. In addition, an inert fluid

would be used to plug the gas wells, which extend past the underground water table into the gas producing formation. Although there is potential for groundwater contamination from pipeline abandoned in place, CDOGGR 8.08.300 requirements would eliminate or reduce these threats. Therefore, the underground water table would not be adversely impacted by downhole abandonment activity. Direct and indirect threats to water quality are not expected through implementation of this project, and therefore are not discussed further in this document.

### **No Action**

There would be no additional impacts to water quality from the No Action alternative.

## **CUMULATIVE IMPACTS**

### **Air Quality**

This project would not have adverse cumulative impacts to air quality, as emissions from this project are *de minimus* and temporary in nature. The effectiveness of this mitigation process is demonstrated in the California ARB Almanac of Emissions and Air Quality (2009). According to the Almanac, air quality in the San Joaquin Valley Air Basin has shown dramatic improvement. Since 1990, ozone levels have decreased approximately 10 percent in the San Joaquin Valley.

### **Soil Resources**

This project would not have adverse cumulative impacts to soil resources, as direct and indirect soil disturbance would be minimal and temporary in nature.

## **Chapter 5. Consultation and Public Involvement**

### **Recipients of Native American Notification Letters**

Mr. Neil Peyron, Chairman, Tule River Reservation  
Ms. Kerri Vera, Environmental Department, Tule River Reservation  
Ms. Kathryn Montes-Morgan, Chairwoman, Tejon Indian Tribe  
Mr. Ruben Barrios, Chairman, Santa Rosa Rancheria  
Mr. Hector Lalo Franco, Cultural Resources Specialist, Santa Rosa Rancheria  
Ms. Shana Brum, Archaeologist, Santa Rosa Rancheria

### **Persons, groups, and agencies consulted**

Caroline Kilbane, Atwell Island Intern, BLM  
Gabriel Garcia, Bakersfield Field Office Manager, BLM  
John Hodge, Assistant Field Manager for Minerals, BLM  
Kevin Coodey, Petroleum Engineer Technician, BLM  
Michael Toland, Senior Oil and Gas Engineer, CDOGGR  
Ryan Klausch, Ecologist, BLM  
Sue Porter, Planning and Environmental Coordinator, BLM

## **SUMMARY OF PUBLIC PARTICIPATION**

The public was notified of this project through its listing on the BLM National NEPA Register beginning on March 9, 2016.

**National Historic Preservation Act:** For the purposes of public notification and review, as required under Section 106 of the National Historic Preservation Act, a description of this project was posted on the BLM National NEPA Register. This description included a statement that indicated that this action has been determined to have no effect to historic properties. As required under the Protocol, this determination was posted for a period of 15 days. There was no response by the public to this decision.

## LIST OF PREPARERS

Tamara Whitley, Archaeologist  
Tiera Arbogast, Natural Resource Specialist

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