

# 1.0 PURPOSE AND NEED

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## 1.1 INTRODUCTION

### 1.1.1. Description and Location

Anadarko E&P Company (AEPC) and Warren E & P, Inc. (Warren), collectively referred to as the Companies, have notified the Bureau of Land Management (BLM), Rawlins Field Office (RFO) that they propose to explore for and potentially develop coal bed natural gas (CBNG) wells in the Red Rim area (Project Area). The Project Area lies within the Atlantic Rim Environmental Impact Statement (EIS) study area in south-central Wyoming ([Figure 1-1](#)). The Project Area is located within the administrative boundary of the RFO in T20N R89W in Carbon County, Wyoming, and is one of nine areas or well pods where BLM may allow interim drilling activity while an EIS is being prepared for the Atlantic Rim Natural Gas Project.

The Red Rim interim development proposal consists of constructing, drilling, completing, testing, and producing eight exploratory gas wells and up to two injection wells; testing and operating eight existing exploratory wells; and constructing and operating two water conditioning facilities, three surface discharge outfalls, and a compressor station. Related access roads, utilities, flowlines, a market access line, self-contained tanks that allow beneficial use of produced water by livestock, and production facilities also are included in the proposed project. The life of the project is estimated to be 10 to 20 years.

Of the eight proposed well locations, five would be located on surface ownership lands administered by the BLM RFO and would develop federal minerals. One proposed well would be located on surface ownership lands administered by the RFO and would develop minerals owned by the State of Wyoming. The remaining proposed wells (two) would be located on fee lands and would develop fee minerals. The proposed water injection wells, zeolite water conditioning facilities, surface discharge outfalls, and compressor station all would be located on fee lands. In addition, eight existing or authorized wells also will be tied into the project.

The Project Area, which encompasses approximately 3,200 acres, is located about 8 miles southwest of Rawlins, Wyoming, along Carbon County Road 605 (Twentymile Road), which intersects Interstate 80 (I-80) near Rawlins. The Project Area is within the Great Divide Basin, a closed basin.

**Figure 1-1 Location Map**

## **1.2 PURPOSE OF AND NEED FOR ACTION**

### **1.2.1. Purpose and Need for the Proposed Project**

The purpose of the Companies' proposal is to search for and test certain geologic formations for the presence of commercial quantities of natural gas. The proposed project would allow the Companies to evaluate through exploration and production whether the larger-scale development is feasible. The primary objective of the exploration project is to evaluate the following in support of the larger Atlantic Rim Natural Gas Project EIS (Atlantic Rim EIS):

- Ø Productivity of and reserves within the coals;
- Ø Economics of drilling and completion techniques;
- Ø Feasibility of dewatering the coals; and
- Ø Depths or pressure windows that may be preferred as the target for economic gas production.

Exploration and development of federal oil and gas leases by private industry is an integral part of the BLM's oil and gas leasing program. Statutory authority for BLM's oil and gas program is derived from the Mineral Leasing Act of 1920, as amended; the Mining and Minerals Policy Act of 1970; the Federal Land Policy and Management Act of 1976; the National Materials and Minerals Policy, Research and Development Act of 1980; and the Federal Onshore Oil and Gas Leasing Reform Act of 1987.

The proposed development would exercise the leaseholders' existing rights within the Project Area to drill for, extract, remove, and market gas products. National mineral leasing policies recognize the statutory right of leaseholders to develop federal mineral resources to meet continuing national needs and economic demands so long as natural resource values and uses are sustained. Also included is the right of the leaseholders within the Project Area to build and maintain necessary improvements for drilling, producing, and marketing the natural gas, in accordance with the appropriate authority.

Natural gas is an integral part of the U.S. energy future because of its availability, the presence of an existing infrastructure for market delivery, and the environmental advantages of clean-burning natural gas as compared with other fuels. In addition, development of abundant domestic reserves of natural gas would reduce the country's dependence on foreign sources of energy and maintain an adequate and stable supply of fuel for economic well being, industrial production, power generation, and national security. The environmental advantages of natural gas combustion versus other conventional fuels are emphasized in the Clean Air Act Amendments of 1990.

## **1.2.2. Environmental Analysis Process**

This environmental assessment (EA) documents the environmental analysis process BLM uses to make decisions in accordance with the National Environmental Policy Act (NEPA). This document provides the decision-makers with information needed to make a decision that is fully informed and that is based on factors relevant to the proposal. The decisions to be made by BLM include which alternative to adopt, and whether the action adopted would be significant under NEPA. This EA also documents the analysis conducted on the proposal and alternatives and identifies environmental effects and mitigation measures. Finally, this document provides a vehicle for public review and comment on the proposal, the environmental analysis, and conclusions about the relevant issues.

This EA has been prepared to evaluate and disclose the potential environmental impacts associated with this project. The proposed exploration project would affect BLM lands managed by the RFO.

Factors considered during the environmental analysis for the exploratory project include the following:

A determination of whether the proposal and alternatives conform to BLM policies, regulations, and the direction approved in the Resource Management Plan (RMP).

A determination of whether the proposal and alternatives conform to policies and regulations of other agencies that are likely to be associated with the project.

A determination of well pad locations, access roads, pipelines, and production facilities that best meet other resource management objectives and minimize impacts to surface resources while honoring the lease rights within the Project Area.

A determination of impacts on the human environment that could result from the project and alternatives, and development of mitigation measures necessary to avoid or minimize these impacts.

## **1.3 RELATIONSHIP TO POLICIES, PLANS, AND PROGRAMS**

The EA is prepared in accordance with NEPA and complies with all applicable regulations and laws passed subsequent to the act. This EA assesses the environmental impacts of the project and alternatives, including the no action alternative, and guides the decision-making process.

### **1.3.1. Conformance with Great Divide Resource Area RMP**

In accordance with Title 43 Code of Federal Regulations (CFR) Part 1610.5, the proposed project has been reviewed and conforms to the Great Divide RMP, approved on November 8, 1990.

The BLM's Great Divide RMP and Record of Decision (ROD) (BLM 1987, 1988a, 1990) direct management of BLM-administered lands within the Project Area. Management of oil and gas resources, as stated in the RMP, provides for leasing, exploration, and development of oil and gas while protecting other resource values. According to the RMP, all public lands in the resource area are suitable for oil and gas leasing and development, subject to certain stipulations on leases and site-specific conditions of approval (COAs) attached to applications for permits to drill (APDs).

The project is located outside areas where surface-disturbing activities would be restricted and intensively managed to maintain important resource values, such as the Baggs Elk Crucial Winter Range or any areas of critical environmental concern (ACECs). All proposed roads, flowlines, and the delivery pipeline are located outside avoidance areas for utility and transportation systems.

### **1.3.2. Conformance with Interim Drilling Guidelines**

Proposed drilling and development on public land will be consistent with the guidelines provided in the Interim Drilling Policy – “Development Authorized Concurrent with EIS Preparation for the Atlantic Rim Coalbed Methane Project” ([Appendix A](#)).

### **1.3.3. Relationship to Other Plans and Documents**

The proposed project conforms with the State of Wyoming Land Use Plan (Wyoming State Land Use Commission 1979) and the Carbon County Land Use Plan (Pederson Planning Consultants 1997, 1998) and would comply with all relevant federal, state, and local laws and regulations. Development of this project would not affect attainment of the Wyoming Standards for Healthy Rangelands, originally produced in August 1977, and updated in May 2003 (BLM 2003a), or the July 1998 Fire Management Implementation Plan for Wyoming.

The BLM is required to consult with the Wyoming State Historic Preservation Office (SHPO) and others, as necessary, regarding potential impacts of the proposed undertaking upon historic properties. This consultation is required as part of the process under Section 106 of the National Historic Preservation Act of 1966, as amended. The project lies within the general area that contains the historic Rawlins-Baggs Stage Road that is eligible for inclusion in the National Register of Historic Places (NRHP), and prehistoric camps are evident (Hatcher 2003).

## 1.4 ISSUES AND CONCERNS

Environmental and social issues and management concerns associated with the proposed project are identified as follows:

### **Surface Water and Groundwater Resources**

1. The proposed project could affect the quality of surface water in the Project Area and surrounding areas.
2. The proposed project could affect groundwater resources in the Project Area and surrounding areas.

### **Management of Produced Water**

1. If discharges were confined to one tributary of Hadsell Draw, the impacts to the area would be localized.
2. Reservoirs associated with surface discharge should be designed and maintained to handle the volumes of water that would be anticipated during wet years.
3. An in-channel reservoir that is located just below an outfall could serve as a check on erosion. This reservoir could be enlarged so that releases into the channel below would simulate natural conditions.
4. Water should not be stored in the reservoir during winter unless riprap is placed on the face of the dam to prevent erosion from freeze-thaw movements or wave action.
5. Additional water sources should be developed to supply water after the project ends to facilities that are developed to use produced water from the project.
6. The locations and sizes of culverts should be determined in consultation with BLM and other affected stakeholders. The channel crossing to the federal wells on the west side of the drainage in Section 29 may require a culvert larger than 18 inches in diameter.
7. The calculated flood flows in the water management plan may be high and should be verified. For example, the average flow for Hadsell Draw is 0.81 cubic feet per second (cfs), but the 2-year channel maintenance flow is 176 cfs, which seems high.
8. According to the water management plan, discharge of produced water would add 1.14 cfs, which on an average day would more than double the flow. This estimate should not be compared with the peak flow, since the effects of flood flows on drainages are different from the effects of constant flows.

9. Successful strategies for livestock management, soil conservation, and protection of riparian areas encourage the use of water sources in the uplands, instead of sources in streamside riparian areas. The use of potholes near drainages as water sources because of enhanced flows could damage riparian areas or increase erosion of soils.

### **Rangelands and Livestock Grazing**

1. Surface flows caused by discharge of produced water into Hadsell Draw and associated tributaries likely would affect distribution of livestock, grazing use, and rangeland vegetation.
2. Surface discharge could lead to unrestricted, concentrated use by livestock during periods of high stress for plants and throughout the year.
3. Watering facilities that are well planned could be used to improve distribution and timing of use by livestock, which would lead to better conditions in upland and riparian areas.
4. An estimated 6 miles along Hadsell Draw and 3 miles along feeder draws likely would be affected by surface discharge of produced water. Construction and use of extensive pasture fencing would be an effective way to manage livestock use in this area. This issue would probably be addressed most appropriately through a cooperative agreement among the Companies, Blake Sheep Company, and the BLM that would be analyzed in an allotment-wide management plan.
5. The area north and west of Atlantic Rim is currently used for grazing primarily during late fall, winter, and early spring; the addition of an open source of water would attract livestock throughout the year.
6. A controlled pipeline and trough system that could be unavailable to cattle during late spring, summer, and fall would mitigate the effects of surface discharge on rangelands and grazing.
7. Limits on the areal extent of drainages that would be affected by surface discharge or eliminating a surface discharge site (outfall) would mitigate the effects of surface discharge on rangelands and grazing. The outfall in Section 29 of T20N R89W could be eliminated, curbing surface flows to the channel below the outfall in Section 21.
8. New water developments should remain viable long after gas production ends; the livestock operator should be responsible for repairing and maintaining the developments.
9. Livestock watering facilities should be contained and shut off when not in use.

10. Reservoirs that would contain produced water should be fenced in a manner that could control when livestock have access to the water.
11. Far more produced water would be available for livestock management than could reasonably be used beneficially. Injecting produced water from the proposed federal wells would decrease the need for surface disposal of 36 percent of the water.

### **Wildlife Resources**

1. Wildlife habitats and populations within the Project Area and adjacent lands, primarily nesting areas for greater sage grouse and crucial winter range for big game, may be affected by surface-disturbing activities, human presence, noise from the compressor station, traffic, or management of produced water.
2. Livestock fencing associated with additional water development may alter migration of wildlife to and from winter range.
3. Development of water in crucial winter range for wildlife may increase animal grazing and reduce forage that would be available during severe winters when it may be needed.
4. New watering locations may change the distribution of animals or their use of areas.
5. Bioaccumulation of inorganic constituents in water discharged to the surface may be detrimental to waterfowl over time.
6. The Red Rim-Daley Wildlife Habitat Management Area, located just west of the Project Area, could be affected by the proposed project.

### **Soil Resources**

Soil resources in the Project Area and surrounding areas could be affected by the proposed project.

1. Erosion of surface drainages can be reduced by minimizing the distance that produced water must flow from outfalls through channels or diversions to reservoirs.
2. Disturbed areas associated with construction activities should be reclaimed.

### **Other Resources and Uses**

1. The corridor for the Continental Divide National Recreation Trail could be affected near Rawlins by the proposed market access pipeline.
2. The proposed project could affect the historic Rawlins-Baggs stage road or historic and cultural values.
3. The proposed project (especially generators and compression facilities) could affect air quality or noise levels in the Project Area or surrounding areas.
4. Vegetation resources in the Project Area and surrounding areas could be affected by surface-disturbing activities. Invasive species or noxious weeds could increase in the Project Area.
5. The cumulative effects on all resources and uses should be addressed.

### **Monitoring**

1. The Companies should monitor the immediate, primary effects of surface discharge. Secondary effects on rangeland resources should continue to be monitored by the BLM and livestock operator.
2. Surface drainages that receive produced water should be monitored to mitigate development of headcuts. Permanent cross sections should be established in Hadsell Draw (three sites) and in each affected tributary (one site in the draw of each tributary). One site would contain a stream gage. The locations of these sites would be selected in consultation with the BLM and affected stakeholders.
3. The measurements needed and methodology for monitoring surveys should be established in consultation with BLM and other affected stakeholders.
4. Monitoring requirements that would measure effects on groundwater resources should be established.