



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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Bureau of Land Management
BLM Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834

Duane Spencer
Bureau of Land Management
BLM Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834

Re: Comments on the Environmental Assessment
for Lance Oil & Gas Company Inc.
Augusta Unit Zeta Plan of Development

Dear Messrs. Beels and Spencer:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed the Bureau of Land Management's (BLM) Environmental Assessments (EA) for the Lance Oil & Gas Company Inc. proposed Augusta Unit Zeta Plan of Development (POD). EPA appreciated the opportunity to meet with BLM to discuss the project and related concerns. In accordance with EPA responsibilities under the National Environmental Policy Act (NEPA), 42 U.S.C. 4232(2)(c) and EPA's authority under Section 309 of the Clean Air Act, 42 U.S.C. Section 7609, EPA offers the enclosed comments for your consideration.

The proposed action includes the development of 134 coal bed natural gas (CBNG) wells at 67 locations within the POD and associated infrastructure on an 80-acre spacing pattern. Each location would include two wells producing from both the Big George coal seam and the Wall coal seam. EPA understands that this site-specific analysis tiers into and incorporates by reference the information and analysis included in the 2003 Powder River Basin Oil and Gas Project Environmental Impact Statement (EIS) and Resource Management Plan Amendment (RMP), and the EA is intended to address impacts that were not covered within the referenced Final EIS and RMP.

EPA's primary concerns involve water and air quality impacts and the need for additional analysis. EPA acknowledges that these issues will also need to be examined on a broader scale as the Resource Management Plan for the Buffalo Field Office is being revised. Additionally, EPA

also has comments regarding mitigation and adaptive management plans for potential habitat loss and related impacts on elk population within the project area.

Water Resources

EPA is concerned that the EA does not include sufficient water resources analyses for tributaries of the Upper Powder River Basin and associated wetland/riparian areas within and downstream of the projects boundaries. Furthermore, it cannot be determined if the impacts of the water management plan are in fact insignificant given the information available for evaluation in the EA. EPA recommends that additional information regarding water resource analyses for the Upper Powder River Basin be included in the EA.

The project area is within the Fortification Creek, Barber Creek and Turner Draw drainage systems, tributaries of the Upper Powder River. The EA describes the proposed water management plan offered by the Lance Oil and Gas Company (LOG). The proposal is to provide passive treatment consisting of aeration provided by a drop structure at each discharge point outfall. While aeration reduces the dissolved iron content, it does not lower the salinity or the sodium content. The company's water management plan has three discharge locations: (1) the Upper Powder River discharge at 3 outfalls requiring an 11-mile pipeline, (2) direct discharge to Fortification Creek, and (3) re-injection of a portion of the produced water into the Salt Creek oil field. The produced water is projected to have a sodium adsorption ratio (SAR) between 30.9 and 33.3 (see Table 4.7). The existing water quality in the Upper Powder River has SAR values between 4.76 and 7.83. As the passive treatment will not affect the SAR concentrations, the expected SAR in the discharge will be the same as in the produced water, i.e. in the range of 31-33. The EA fails to reconcile how this elevated SAR may potentially impact agricultural uses as well as the riparian plant and aquatic conditions of these streams. Discharging produced water with high salinity and SAR values may affect soil infiltration capacity and significantly reduce root penetration of native grasses. Documented impacts in similar conditions include soil salt build-up and soil slumping along the ephemeral channel bank. Such impacts are likely during winter when the discharge can freeze and then overflow the channel banks. BLM concludes that no additional mitigation measures are required (Draft EA at page 66).

This EA lacks a critical analysis of the proposed water management system which may adversely impact riparian conditions. Therefore, additional information and/or further mitigation are needed in order to fully support a Finding of No Significant Impact (FONSI). If mitigation measures are proposed, NEPA requires an analysis of how the proposed mitigation measures will reduce impacts to insignificance. Some mitigation measures to consider include but are not limited to: (1) implementation of an alternative water management plan which may require reverse osmosis or similar treatment to reduce SAR and salinity; (2) a managed irrigation program; and/or (3) expansion of underground re-injection capacity to manage and support the expected 6 cubic feet per second produced water discharge.

Air Quality and Visibility

According to the 2003 EIS and RMP, the CALPUFF model was used to predict criteria pollutants, select hazardous air pollutants (HAPs) and Air Quality Related Values (AQRVs) in both the near and far fields. Since the EIS and RMP were published, the National Ambient Air Quality

Standard (NAAQS) for the 24-hour PM_{2.5} standard was reduced from 65 µg/m³ to 35 µg/m³. Table AQ-5 of the EIS and RMP presents a PM_{2.5} total impact of 43 µg/m³, which is over the current NAAQS. Table AQ-10 at the Northern Cheyenne Indian Reservation Class I area indicates adverse visibility impacts with up to 16 days of impairment. At Cloud Peak and Crow Indian Reservation (Class II areas) 12 and 16 days (respectively) of impairment were indicated. No other negative criteria, prevention of significant deterioration or HAPs air impacts were predicted from the near field modeling.

No modeling was conducted to predict ozone for this project. This project's incremental ozone increase is anticipated to be minimal; however, ozone concentrations in the surrounding area are very near the ozone standard (Wyoming Department of Environmental Quality Thunder Basin Natural Grassland site 2006-2008 design value of 72 ppb). The reduction of ozone precursor emissions (NO_x) should strongly be considered through the use of Tier II or better drill rig engines, 1.0 g-hp/hr or better compressor engines. See the recommendations of the 4-Corner Air Quality Task Force for CBM operations (http://www.nmenv.state.nm.us/aqb/4C/Docs/4CAQTF_Report_FINAL_Oil_and_Gas.pdf), and Best Management Practices from the EPA GasStar website (<http://www.epa.gov/gasstar/>).

The BLM is currently revising the RMP for the Buffalo Field Office planning area. EPA provided scoping comments for this RMP revision on January 8, 2009, that specified the levels of air quality impact analysis that should be considered for these types of projects. We have significant concerns that the cumulative nature of the emissions from the various engines used in the coal bed methane process (drilling and compression NO_x emissions) may be contributing to the overall ozone levels measured in the nearby areas. An air impact analysis should be conducted to determine the overall impacts to air quality including criteria pollutants like ozone and PM_{2.5} and Air Quality Related Values like visibility impairment from the projected development.

Wildlife

EPA acknowledges BLM's work with the Wyoming Game and Fish Department to establish significant thresholds for the Fortification Creek elk herd, which includes a reduction in the amount of security habitat by 20% as a trigger. The EA discloses that existing habitat for the elk could be degraded by impacts from water drawdown needed for gas production that could affect elk-dependent water sources (EA pages 67 and 68). Among other things, habitat fragmentation is also highlighted in the EA as an impact from CBNG development (EA page 69). Prior to the EA analysis, BLM's 2007 "Environmental Report: Coalbed Natural Gas Effects on the Fortification Creek Area Elk Herd" states "with the proposed level of CBNG development the WSA [Wilderness Study Area] could likely support 46 to 64 elk for twenty years, but lacking the ability to roam freely, the overall herd health would likely decrease" (2007 Environmental Report page 18). The EA further describes modeled results from both federal and non-federal CBNG development impacts, and states that "Loss of effective habitat anticipated with the implementation of the operator's federal CBNG development is 100% within the Augusta Unit Zeta POD" (EA page 69).

Although EPA is pleased that some mitigation is offered regarding timing of surface disturbing activities and the mention of monitoring tied to possible adaptive management

alternatives, EPA believes that additional information on mitigation plans and adaptive management development specific to the location of this project area should be disclosed in the EA. EPA encourages BLM to continue working with the Wyoming Game and Fish Department and, if appropriate, establish meaningful adaptive management thresholds applicable to the area surrounding the project, which is within the yearlong range but south of the WSA and neighboring northern CBNG development where previous analysis has been conducted.

Conclusion

In summary, EPA's primary concerns to consider for the proposed CBNG project are protection of water quality, wetlands and riparian areas and associated ecosystems, additional air quality analysis, and impacts to wildlife habitat. To fully support a FONSI, EPA believes that further information on mitigation and additional analysis are needed. Specifically, EPA believes the following should be addressed: 1.) EPA recommends that BLM analyze, address and disclose the potential impacts to riparian vegetation due to the discharge of the high salt, high SAR water; 2.) provide additional air quality analysis and modeling, including but not limited to ozone; and 3.) determine if current mitigation and adaptive management thresholds for the elk population and associated habitat are appropriate and applicable within the project site and surrounding area. If we may provide further explanation of our comments during this phase of your planning process, please contact me at 303-312-6004, or Melanie Wasco of my staff at 303-312-6540.

Sincerely,

A handwritten signature in cursive script that reads "Larry Svoboda (for)".

Larry Svoboda
Director, NEPA Program
Ecosystems Protection and Remediation