



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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May 15, 2002

Ref: 8EPR-N

Sherry Barnett, Acting State Director
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P.O. Box 36800
Billings, Montana 59107-6800

Jan Sensibaugh, Director
Montana Department of Environmental Quality
P.O. Box 200901
Helena, Montana 59620-0901

David Ballard, Chairman
Montana Board of Oil and Gas Conservation
2535 Saint Johns Avenue
Billings, Montana 59012

RE: EPA's Review of the Statewide Draft Oil and Gas Environmental Impact Statement
and Amendment of the Powder River and Billings Resource Management Plans, (CEQ #020060)

Dear Ms. Barnett, Ms. Sensibaugh, and Mr. Ballard:

The U.S. Environmental Protection Agency (EPA) offers comments on the Statewide Draft Oil and Gas Environmental Impact Statement (Draft EIS) and Amendment of the Powder River and Billings Resource Management Plans, Montana. This Draft EIS relates to the BLM's proposal to amend the Powder River and Billings Resource Management Plans to allow for coal bed methane (CBM) production and, to a lesser degree, conventional oil and gas development in the portion of the Powder River Basin in the State of Montana, as well as a comparable proposal from the State of Montana for State-administered lands.

As a cooperating agency in the development of this environmental impact statement, the EPA is providing its review and comments pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations at 40 CFR Sections 1500-1508, and Section 309 of the Clean Air Act. The EPA is concurrently providing comments on a Draft EIS addressing coal bed methane development in the Wyoming portion of the Powder River Basin. Please see the enclosed copy of the letter to Al Pierson, the BLM's Wyoming State Director.

Management of produced water from coal bed methane development creates an inter-jurisdictional water quality question that the EPA believes needs to be addressed. We believe that this complex situation must be resolved by effective dialogue among the BLM, the States of Montana and Wyoming, and the Northern Cheyenne and Crow Tribes.



Our agencies made progress in that direction during our April 30, 2002, meeting in Sheridan, Wyoming, in which Dennis Hemmer and Ms. Sensibaugh, Directors of the Departments of Environmental Quality for Wyoming and Montana, respectively, committed their States to assuring that the discharges of CBM-produced water would be protective of these streams' present beneficial uses, such as agricultural irrigation. I personally offer my assistance to the BLM, the States, and the Tribes in moving to a clear resolution that will protect all affected streams for all designated uses. The EPA's intent is to collaborate with all interested parties to help develop a watershed management framework that will allow coal bed methane development to occur in an environmentally sound manner.

Background information. The contemplated coal bed methane development would include drilling wells in a portion of the Powder River Basin for which the BLM already has approved coal leases. The oil and gas extraction industry predicts 9,551 coal bed methane wells in the Montana portion of the Powder River Basin by 2010. In this Draft EIS, the BLM estimates that over the next 20 years, up to 18,300 coal bed methane wells are reasonably foreseeable in the Montana portion of the Basin, of which approximately 47% involve federal minerals managed by the BLM. The BLM projects that this number of wells would disturb 35,100 acres of land, directly impact 67,500 acres of wildlife habitat, adversely affect 2,800 acres of riparian habitat, result in 6,680 miles of new roads, and necessitate 20,700 miles of new electric utility corridors. Cumulatively, there will be indirect adverse impacts to wildlife on 4.7 million acres.

To extract methane from underground coal formations, large quantities of ground water need to be brought to the surface. Although the produced water may be suitable for humans and livestock to drink, it is typically not suitable for irrigation. Due to its high levels of sodium (which is described in terms of sodium adsorption ratio or SAR) and salinity, coal bed methane-produced water can irreversibly destroy soil structure, leaving the soil unable to percolate water in a manner that can support plant growth. At certain salinity levels, crop production is diminished. This is particularly important in the Powder River Basin, where over 30,000 acres are irrigated.

To analyze reasonably foreseeable development, the BLM presents four alternatives, which differ by water management theme: Alternative B provides for water injection underground, Alternative C provides for discharge of untreated water, Alternative D provides for water treatment prior to discharge, and Alternative E, the Preferred Alternative, is intended to prevent stream degradation by emphasizing beneficial use and considering injection, treatment, and impoundment. Alternative A is the "No Action" Alternative.

EPA's rating of this Draft EIS. EPA, as part of reviewing environmental impact statements, rates their preferred alternatives according to EPA's concerns over their potential environmental impacts. However, because this Draft EIS does not present sufficient information to understand the impacts of the Preferred Alternative, we are not rating its environmental impacts. Our NEPA review process also calls for providing a rating regarding the adequacy of the information provided in the Draft EIS. In this case, we have significant concerns over the adequacy of the Draft EIS and have rated the document as "inadequate," to which we assign the number "3," according to the enclosed "Summary of Rating Definitions."

In the Preferred Alternative, Alternative E, the agencies identified the laudable goal of preventing degradation of watersheds. However, the Draft EIS does not present a full analysis of how the discharge of produced water without treatment would degrade these watersheds. Furthermore the Draft EIS does not specify how produced water will be managed to meet the goal of preventing degradation of the watersheds. Although the Draft EIS states generally that industry would treat the produced water or find beneficial uses

for it, there is no specific information on produced water management options or implementation that would assist the public in understanding how the produced water will be managed. Without this information, it is difficult to determine whether or how agricultural irrigation and riparian vegetation would be protected.

The basis for our rating is the lack of specifically identified, economically and technically feasible water management practices for each watershed that are adequate to assure attainment of water quality standards under the Clean Water Act. The Draft EIS recognizes the importance of choosing an alternative that is economically and technically feasible. In order to achieve these conditions under the Preferred Alternative, the Draft EIS must include the specific information on how water quality standards will be met. A summary of the most important significant concerns follows:

Impacts to the Tongue River and Rosebud Creek may not meet Clean Water Act requirements. The Draft EIS shows that discharge of untreated water into the Tongue River and Rosebud Creek would not be consistent with BLM's goal of avoiding degradation of the watershed. With respect to Alternative C, the only alternative where predicted water quality information is provided, the BLM states that if the produced ground water is allowed to flow untreated to surface streams and rivers it would render the Little Powder River, the Powder River, the Tongue River and Rosebud Creek unusable for irrigation based on the scientific relationship of salinity and SAR effects. EPA also conducted an analysis of the impacts to water quality. EPA's analysis indicates that if produced water is discharged without treatment, water quality in the Tongue River and Rosebud Creek would result in significantly reduced crop production and irreparable soil dispersion. Applying what EPA considers to be critical flow and appropriate background water quality conditions, the predicted water quality for discharge without treatment would be inconsistent with the existing agricultural practices in the basin and inconsistent with the State's requirement to protect these streams for irrigation uses. The results of EPA's analysis show that only a small fraction of the produced water could be discharged without treatment before reaching the salinity and SAR cumulative effects threshold for adverse crop and soil effects. EPA urges BLM to comprehensively address the water quality issues for the Tongue River in the two Draft EISs and to prepare a predictive analysis for this river that is acceptable to the States and the Tribes.

Impacts to the Powder River and Little Powder River are not well understood. The Montana EIS predicts that these rivers may become unsuitable for irrigation with the discharge of untreated produced water. In contrast, the Wyoming EIS predicts these streams may remain suitable for irrigation with discharge of untreated produced water. EPA's analysis indicates that on average the water quality in the Powder and Little Powder Rivers, which naturally are characterized by higher salinity, may remain suitable for irrigation when untreated produced water is discharged to the rivers. This is contrary to the finding in the Montana Draft EIS primarily because the produced water in the Powder and Little Powder Rivers drainages is not as saline as reported in the Draft EIS. EPA's analysis suggests that the frequency of flows with salinity suitable for alfalfa irrigation may decrease. At the same time, there would likely be an increase in the volume of flow suitable for alfalfa irrigation due to mixing CBM-produced water discharge with river flow. It is not yet understood how such changes would affect irrigation practices. EPA urges BLM to comprehensively address the water quality issues for the Powder River and Little Powder River in the two Draft EISs and to prepare predictive analyses for these rivers that are acceptable to the States.

Combined analyses for this Draft EIS and the Wyoming Draft EIS should be prepared. The bifurcation of the Powder River Basin into two EISs does not enable the decision-maker and the public to fully evaluate the cumulative impact of both projects. In addition, the separation of the EIS's between the

two states has resulted in conflicting information. For example, for future water quality conditions in the same streams at the same monitoring locations, the analyses in the two Draft EISs differ. Another difference exists between the Reasonably Foreseeable Development (RFD) scenario for each Draft EIS. The Wyoming RFD projects much less recoverable gas than does the RFD in the Montana EIS. These inconsistencies should be evaluated and harmonized for both draft EISs. The EISs should also refer to the USGS report issued in 2001 concerning the recoverable coal bed methane for the entire Powder River Basin.

Impacts to ground water, air quality, Tribal communities and their natural resources, and wildlife have not been fully analyzed. In their January 17, 2002, letter transmitting the Draft EIS to other agencies for review, the BLM and the State of Montana indicated that they had not yet analyzed:

- 1) the drawdown of the regional ground water system using a 3-D model;
- 2) potential human health and visibility changes due to degraded air quality;
- 3) impacts upon sites that the Crow and Northern Cheyenne Tribes consider sacred; and
- 4) the potential impacts upon the Crow and Northern Cheyenne tribal communities and their natural resources.

Air quality conditions have changed considerably in the Powder River Basin in Wyoming in the last several years. Beginning in 1999, particulates 10 microns or smaller have been recorded at or above the Class II PSD increment, culminating in 13 exceedances of the health-based standard (NAAQS) in 2001 and 2002. Impacts from the addition of 6,680 miles of unpaved roads in the Montana portion of the Powder River Basin, when combined with the 17,000 additional miles of mostly gravel roads or dirt two-track roads in Wyoming could further exacerbate particulate air pollution in the Powder River Basin. These events and mitigation measures should be included and analyzed in a revised or supplemental Draft EIS.

Additionally, the Draft EIS refers to a biological assessment discussing the impacts on threatened or endangered species, which should be made available.

Steps toward quick resolution of issues. We suggest completing an analyses of Tribal issues, ground water, air quality and wildlife, to meet the NEPA and Montana Environmental Policy Act (MEPA) obligations to determine significant impacts. We suggest the following next steps for the agencies:

Adopt the scientific analyses of water quality criteria being prepared by the Montana Department of Environmental Quality and the Northern Cheyenne Tribe. By using the analytical information prepared for the Montana Board of Environmental Review for water quality criteria and the similar work prepared by the Northern Cheyenne Tribe, BLM can promote and expedite a process with regard to Clean Water Act compliance. The State of Montana is currently in a process to adopt water quality standards in response to new water use practices identified with the coal bed methane industry. The Northern Cheyenne Tribe recently proposed water quality standards on the Tongue River. Montana has plans to complete a Clean Water Act process known as a Total Maximum Daily Load (TMDL) for the Tongue River, Rosebud Creek, Powder River and Little Powder River by early 2003. The State's TMDL effort will define the cumulative loading limits needed to avoid degrading the watersheds. BLM could adopt and support the scientific rationale being developed by the State and the Tribe to protect these watersheds for their beneficial uses and present that information in a revised or supplemental Draft EIS.

A Watershed Management Framework should be prepared. EPA offers its assistance in preparing a watershed management framework that utilizes the scientific basis described above and consists of the following steps: 1) setting a cumulative allowable threshold of untreated produced water as a percentage of the total water expected from the number of wells that could be reasonable foreseen, 2) defining the mix of technically feasible and economically viable water management practices other than discharge without treatment, and 3) analyzing the cumulative environmental impacts of those water management practices.

Include all additional key information in a Revised or Supplemental Draft EIS. The EPA believes the above watershed information, the biological assessment, as well as the four broad categories of information referenced in the lead agencies' transmittal letter should be included in a revised or supplemental Draft EIS in order for the public to have an adequate opportunity to review and provide comments on it. BLM should (1) harmonize the two current analyses of the impacts on this basin; (2) present alternatives that industry can implement and that are sufficient to protect all affected water bodies; and (3) provide an adequate opportunity for the public to review and comment on these complex issues. Without resolution of the inadequacies in the current draft EIS, the proposed amendment of these Resource Management Plans could become a candidate for referral to the President's Council on Environmental Quality.

We appreciate the opportunity to review this Draft EIS. We welcome working with you further as your agencies complete the NEPA process. If you have any questions, please call me at (303) 312-6308 or Max Dodson, Assistant Regional Administrator for Ecosystems Protection and Remediation, at (303) 312-6598, or, have your staff call Weston Wilson, our lead NEPA reviewer for this project, at (303) 312-6562.

Sincerely,

original signed by:

/s/ Robert E. Roberts
Regional Administrator

Enclosures

cc: Al Pierson, BLM, Cheyenne, Wyoming
Dennis Hemmer, Wyoming DEQ, Cheyenne, Wyoming
Geri Small, Northern Cheyenne Tribe, Lame Deer, Montana
Joseph Speakhunder, Ft. Belknap Agency, Montana
Clifford Bird-in-Ground, Crow Tribe, Crow Agency, Montana
Keith Beartusk, Bureau of Indian Affairs, Billings, Montana