

SUMMARY

Introduction

In 2003, the Bureau of Land Management (BLM) and the State of Montana jointly prepared the Montana Final Statewide Oil and Gas Environmental Impact Statement and Proposed Amendment of the Powder River and Billings Resource Management Plans (Statewide Document). For the BLM, the Statewide Document analyzed the environmental impacts associated with the exploration and development of oil and gas resources, including coal bed natural gas (CBNG) in the Powder River and Billings Resource Management Plan (RMP) areas. The BLM Record of Decision (ROD) for the Statewide Document, approved on April 30, 2003, amended the Powder River and Billings RMPs to change existing land use decisions regarding the development of oil and gas resources, including CBNG exploration and development.

As a result of lawsuits filed against the BLM's ROD, the U.S. District Court issued orders, dated February 25, 2005, and April 5, 2005, that required the BLM to 1) prepare a Supplemental Environmental Impact statement (SEIS) to evaluate a phased development alternative for CBNG production, 2) include the proposed Tongue River Railroad in the cumulative impact analysis and to 3) analyze the effectiveness of water well mitigation agreements.

The Final SEIS (FSEIS) provides additional information and analyses regarding the topics identified by the U.S. District Court. It is intended to expand on the information presented in the Statewide Document, not replace it. The FSEIS has been prepared according to the National Environmental Policy Act (NEPA) of 1969, as amended, and the Federal Land Policy and Management Act of 1976, as amended. It considers the three topics identified above at a programmatic planning level.

Additionally, the FSEIS updates the Statewide Document with new information and reflects any changes in policies, regulations, or activities since that document was approved. Summaries of monitoring data and the results of studies completed since the Statewide Document was finalized have been incorporated to update the public. These additions can be found in Chapter 3 under the individual resource topics as well as in appropriate appendices.

This summary discusses the following information:

- The planning area analyzed in the SEIS.
- The federal agencies responsible for preparing the SEIS.
- A brief explanation of what CBNG is and why it occurs in coal beds.
- A summary of the purpose of and need for the SEIS.
- An explanation of how the SEIS conforms with the Powder River and Billings RMPs.
- A description of the environmental issues discussed in Chapters 3, 4, and 5 of the SEIS.

The Planning Area

The planning area for the SEIS encompasses the BLM-administered lands and minerals in the Powder River and Billings RMP areas (Map 1-1). The planning area excludes those lands administered by other agencies such as the Forest Service; and sovereign tribal governments, such as the Crow Tribe of Indians, and the Northern Cheyenne Tribe. Indian allotted lands are also excluded from the planning area. The BLM will make oil and gas decisions based on the Statewide Document and this SEIS for the oil and gas estate it administers within the Powder River and Billings RMP areas. See the location map on the next page.

Preparers of the SEIS

The BLM is the lead agency responsible for preparing the SEIS. The information and proposed decisions discussed in the plan are not final until the BLM signs a ROD. The ROD will be signed no sooner than 30 days after the FSEIS is published. The BLM will take any protests into account before signing the ROD.

What does the Summary Include?

The sections in this summary are the same as the five major chapters within the FSEIS. In most cases, second-level headings in the summary cover the same information as the same headings in the Draft SEIS (DSEIS). Readers of this summary with questions should go to the parallel chapter or section in the FSEIS.

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The following cooperating agencies and tribes assisted the BLM in the preparation of the DSEIS:

- U.S. Environmental Protection Agency (EPA)
- Department of Energy (DOE)
- Bureau of Indian Affairs (BIA)
- U.S. Army Corps of Engineers (USACE)
- Montana Department of Environmental Quality (MDEQ)
- Montana Board of Oil and Gas Conservation (MBOGC)
- Lower Brule Sioux Tribe
- Crow Tribe of Indians
- Commissioners from the following counties: Big Horn, Carbon, Golden Valley, Musselshell, Powder River, Rosebud, Treasure, and Yellowstone.

The Northern Cheyenne Tribe has also commented on the development of the SEIS.

The cooperators' assistance included the submission of technical information and frequent consultation meetings with the BLM to discuss issues and concerns along with possible mitigation measures. The cooperators may use or reference the SEIS for their future actions.

Coal Bed Natural Gas

CBNG is a natural hydrocarbon gas, primarily methane (CH₄) that occurs in beds of coal. Coal beds developed when dead plant material collected in ancient swamps and bogs. Once preserved and covered by soil and rocks, the plant material began to decay and to lose water, becoming more compact and dense, and its temperature began to increase. Over thousands of years, these natural processes ultimately produced various types of coal. Methane is usually found in sub-bituminous and bituminous coals.

CBNG exploratory wells are drilled in an attempt to find viable commercial quantities of trapped methane. If the CBNG exploratory wells are successful, additional wells are drilled to produce the methane by bringing it to the surface where it is processed and transported through pipelines to markets. Currently, the only methane production in Montana is from approximately 555 wells at the CX Field and a few other fields near Decker, Montana.

Chapter 1: Purpose and Need

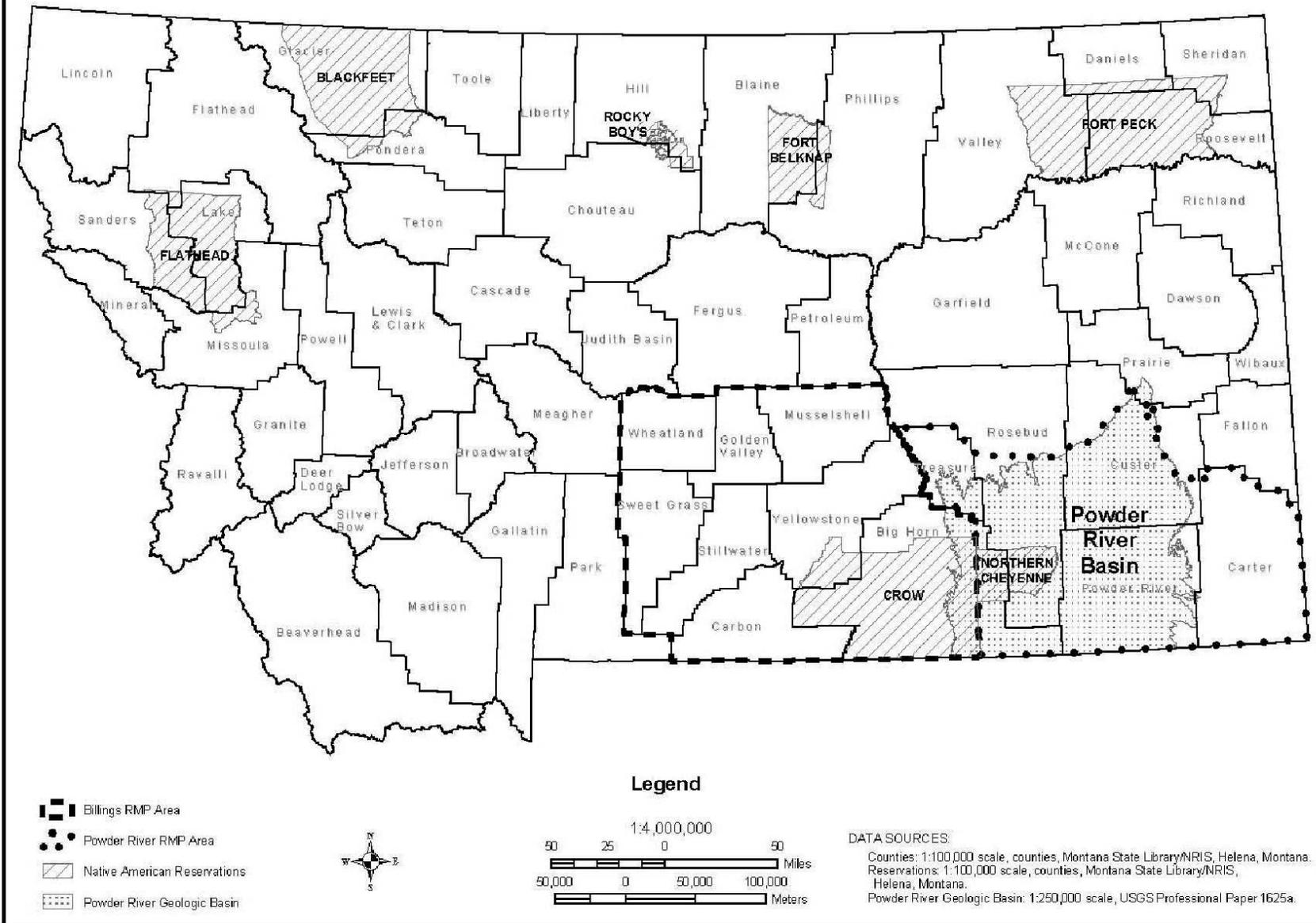
The BLM and the State of Montana were co-leads for preparation of the Statewide Document. The BLM is responsible for managing federally owned oil and gas resources. For the BLM, the purpose of the Statewide Document was to analyze impacts from oil and gas activity, including CBNG exploration, production, development, and reclamation in the Powder River and Billings RMP areas. The EIS was used to analyze options for the BLM to change its planning decision by considering oil and gas management options, including mitigating measures that will help address the environmental and social impacts related to CBNG activities.

The analysis in the Statewide Document focused on oil and gas development issues not covered in the 1994 and previous RMPs, such as water management from CBNG production. The alternatives provided a range of management options for amending the RMPs. The preferred alternative (Alternative E) was BLM's proposed and selected RMP amendment.

For the State of Montana, the purpose of the Statewide Document was to support the state's development of a program to address CBNG exploration, development, production, and reclamation in Montana. The Statewide Document, in part, responded to the stipulation and settlement agreement, dated June 19, 2000, resulting from a lawsuit brought by the Northern Plains Resource Council challenging the MBOGC in the Montana First Judicial District Court, Lewis and Clark County.

The BLM published the original Notice of Intent for the Statewide Document in the *Federal Register* on December 19, 2000. The BLM published the Notice of Availability in the *Federal Register* on January 17, 2003. Immediately following approval of the ROD on April 30, 2003, several lawsuits were filed against the BLM's decision in the U.S. District Court. The U.S. District Court issued orders, dated February 25, 2005, and April 5, 2005, that required the BLM to prepare an SEIS to evaluate a phased development alternative for CBNG production. The U.S. District Court also advised the BLM to include the proposed Tongue River Railroad in the cumulative impact analysis and to analyze the effectiveness of water well mitigation agreements.

Map S-1: Planning Area - Billings and Powder River RMP Areas



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This SEIS addresses the three topics identified by the U.S. District Court. For the evaluation of CBNG phased development, this document will analyze the direct, indirect, and cumulative environmental and social impacts of phased development alternatives based on issues identified by the U.S. District Court, cooperating agencies, and public scoping comments. These phased development alternatives, coupled with the alternatives presented in the Statewide Document, will provide a range of management options for amending the Powder River and Billings RMPs to address CBNG development. The SEIS impact analysis in Chapter 4 will also include the cumulative impacts from the proposed Tongue River Railroad and will address the effectiveness of water well mitigation agreements, as required under 85-11-175, Montana Code Annotated (MCA).

This SEIS updates the description of the Affected Environment (Chapter 3) and the Environmental Consequences (Chapter 4) presented in the Statewide Document with relevant new information and reflects any changes in policies, regulations, or activities since that document was approved. Summaries of monitoring data and the results of studies completed since the Statewide Document was finalized have been incorporated to update the public.

Conformance with BLM Land Use Plans

This SEIS considers alternatives that would amend the two BLM RMPs:

- The Billings RMP issued by BLM on September 28, 1984, and subsequently amended to consider oil and gas development in 1994
- The Powder River RMP issued by the BLM on March 15, 1985, and subsequently amended for oil and gas in 1994
- The 1994 amendment to the RMPs analyzed oil and gas leasing operations and management actions on BLM administered lands.

Consultation

As part of the scoping effort, BLM consulted with the U.S. Fish and Wildlife Service (FWS), regarding analysis in the SEIS and compliance with the Endangered Species Act.

In addition to the cooperating agencies, a number of state departments were consulted, including the Montana Bureau of Mines and Geology (MBMG), the Montana Fish, Wildlife and Parks (MFWP), the Montana Department of Natural Resources and Conservation (DNRC), and the Montana State Historic Preservation Office (SHPO).

Finally, consultation included meetings with the three Native American tribes. The Crow Tribe of Indians and the Northern Cheyenne Tribe have land in the planning area. The Lower Brule Sioux Tribe has areas of historic use within the planning area. The BLM has met with these Tribes several times to discuss their concerns about CBNG development.

Issues Developed During Scoping

The following issues were identified from the public scoping process held during August and September 2005. The issues raised were in relation to CBNG phased development. Note, these issues have been expressed in the form of questions.

Air Quality/Climate

- How will air quality, including visibility, be protected and mitigated, especially when considering all existing and proposed sources within the region? Concerns include general air quality, visibility, and potential adverse effects to public health from cumulative emissions of fine particles and fine particle precursors.
- How will air quality, including visibility be protected within the Northern Cheyenne Indian Reservation airshed and other Class I airsheds?
- How will impacts on water chemistry in high altitude lakes with little acid neutralizing capacity be prevented?
- How will potential for fires from the migration of methane be avoided?
- What additional impacts will the Tongue River Railroad have on regional air quality?

Cultural Resources

- How will culturally important springs and other traditional cultural properties be affected and protected? These include all traditional cultural properties identified by the Northern Cheyenne Tribe as important such as the Rosebud and Wolf Mountains Battlefield sites and Northern Cheyenne Homestead sites in the Tongue River Valley.
- What traditional cultural properties in the RMP areas may be affected by CBNG development and how will they be managed?

Native American Concerns

- How will unique environmental, social, economic, and cultural impacts to Native Americans be addressed by phased development?

- How will phased development provide an economic base to benefit tribal members, while not leading to another boom-and-bust cycle?
- How will subsistence hunting, fishing, and gathering be affected and protected?
- How will phased development help BLM to fulfill its Native American treaty trust obligations?
- How will phased development provide protection to tribal reserved water rights?
- How will phased development include coordination and consultation with tribal representatives?

Oil and Gas

- How will phased development be structured to address the national supply and demand situation and reduce the United States' dependence on foreign energy resources?
- How will RMP- or landscape-scale effects be addressed by phased development?
- How will lease stipulations be used to mitigate for effects from phased development?
- How will phased development be structured to minimize infrastructure development (to reduce both costs and impacts), including coordination with neighboring landowners?
- How will reclamation and restoration be addressed by phased development?

Phased Development

- How will be phased development be planned to account for and protect other resources?
- How will resource impacts from development and other CBNG activities be evaluated and addressed throughout the implementation of phased development?
- How will phased development minimize fluctuations in populations, air quality impacts, overburdening of infrastructure and services, and increases in secondary development?
- How will drainage of federal gas resources and impacts to federal lessees be addressed or affected by phased development?
- What phased development implementation strategy or strategies will be included (e.g., restrictions on location [specific area or coal seam], timing, or number of wells)?

- Will more than one phased development alternative be addressed in the SEIS/Amendment?
- How will phased development reduce impacts, improve mitigation options, or protect multiple-use of resources?

Socioeconomics

- How will social and cultural changes be addressed by phased development? Specific concerns included infrastructure and service costs borne by state, local, and tribal governments, increased population, social pathologies (e.g. crime, alcoholism, drug use) and environmental exploitation.
- How will revenues (income lessees and state and local taxes) be affected by phased development, and how will these effects differ for reservation and off-reservation communities?
- How will phased development affect jobs, job security, local economy, and farming and ranching activities, and how will these effects differ for reservation and off-reservation communities?

Vegetation

- How will phased development address impacts to and the reclamation of sagebrush steppe and grassland ecosystems?
- How will phased development account for the relatively slow vegetative response to changes in groundwater or surface water characteristics?
- How will phased development address the spread of non-native species in affected areas?
- How will phased development affect medicinal and ceremonial native plants important to Native Americans?

Water Resources

- How will produced water be managed by phased development?
- How will groundwater impacts be addressed by phased development? Concerns include groundwater drawdown in area or neighboring aquifers, effects on drinking water and stock watering wells, natural springs, and approved water rights.
- How will phased development address surface water effects and mitigation? Concerns include the consequences of changing surface water quality and transforming ephemeral or intermittent streams into perennial water bodies.

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- How will effects from development outside the planning area be addressed by phased development?
- How will water well mitigation agreements mitigate the effects of aquifer drawdown and methane migration?
- How will phased development affect surface and groundwater quality?

Wildlife

- How will phased development address impacts on wildlife (particularly fish and other aquatic species) and habitat from changes to water quality?
- How will phased development address impacts (both site-specific and at the RMP, landscape, or ecosystem scale) to terrestrial wildlife species (and associated habitats), including song birds, burrowing owls, and bald eagles, but especially sage grouse and prairie dogs? Particular concerns included habitat fragmentation and cumulative effects from development outside the planning area and the ability to assign and quantify impacts from various anthropogenic influences.
- How will phased development address potential effects on big game and other subsistence wildlife populations relative to tribal hunting and fishing rights?
- How will phased development affect ESA-listed or potentially listed ESA species?

Data Gaps

The SEIS incorporates relevant new data collected since the spring of 2002 to update information presented in the Statewide Document, as needed to meet the requirements of the Court's decision. The BLM incorporated this new data to address the topics identified by the Court and during public scoping, to evaluate project effects from phased development alternatives, and to analyze significant new environmental information relevant to environmental concerns that have a bearing on alternatives or their impacts.

Chapter 2: Alternatives

The SEIS presents eight alternatives that describe and analyze different actions regarding the management of CBNG activities. The No Action Alternative describes and analyzes current management of CBNG activities by BLM and the State while the other seven alternatives describe and analyze other management actions including phased development that provide

different methods of protection to other resources and land uses from CBNG activities. The eight alternatives analyzed in detail are described briefly below.

Alternatives Considered

Alternative A—No Action (Existing CBNG Management)

BLM would continue to review and approve APDs for conventional oil and gas and for CBNG wells in accordance with the 1994 Oil and Gas Amendment.

Approved APDs would include only CBNG exploration wells, not production wells. The State would conduct its permitting process by complying with the Stipulation and Settlement Agreement dated June 19, 2000. Under this agreement, the State can approve up to a maximum of 325 producing wells in the CX Field and 200 exploratory CBNG wells throughout the rest of the state.

Alternative B—CBNG Development with Emphasis on Soil, Water, Air, Vegetation, Wildlife, and Cultural Resources

BLM and the State would review and approve CBNG activities with an emphasis on resource protection. BLM and the State would use stringent mitigation measures to minimize or eliminate adverse impacts to other resources. Examples of such mitigation measures would include requiring the injection of water produced with CBNG and requiring all compressors to be fueled by natural gas rather than by diesel or electricity.

Alternative C—Emphasize CBNG Development

BLM and the State would review and approve CBNG activities with an emphasis on facilitating production of CBNG. BLM and the State would use the least restrictive mitigation measures to minimize or eliminate adverse impacts to other resources. Examples of such measures would be to authorize the discharge of water produced with CBNG onto the ground or into the water bodies when the discharge water meets applicable standards. Compressors could be fueled by gas, diesel, electricity, or other means as long as other permitting standards, such as air quality, are met.

Alternative D—Encourage CBNG Exploration and Development While Maintaining Existing Land Uses

BLM and the State would review and approve CBNG activities with an emphasis on maintaining or enhancing land uses in combination with CBNG development. BLM and the State would use mitigation measures, as much as possible, that compliment the needs of land owners and other lessees. Management of water produced with CBNG would be greatly influenced by the surface owner. The water could be made available for beneficial uses or may be required to be reinjected. Location of facilities, such as compressors, would be influenced by the needs of the landowner.

Alternative E—Allow CBNG Exploration and Development with Enhanced Mitigation to Minimize Environmental Impacts While Maintaining Existing Land Uses

BLM and the State would review and approve CBNG activities in a manner that facilitates efficient and orderly CBNG activities while providing the appropriate type of resource protection on a site specific basis as well as an ecosystem basis. Different management actions, such as discharge, impoundment, reinjection or beneficial use, would be applied to water produced with CBNG. Likewise, different management actions such as location, size, and mufflers (as required) would be applied to compressors. Also, realty questions, such as the handling of surface disturbance, would be handled by requiring the operator to consult with the owner of the surface rights.

The State chose this alternative as their Preferred in 2003 and issued a ROD based on this approach.

Alternative F – Phased Development Multiple Screens (High Range)

Under this alternative, development of CBNG on federal leases in the Billings and Powder River RMP areas would be done in a phased manner through restrictions imposed by the BLM. The BLM would limit the number of federal applications for permit to drill (APD) approved each year (910) cumulatively (both state and federal APDs combined) and in each fourth order watershed. BLM would also limit the percentage of disturbance on BLM surface or on private surface overlying federal minerals within each identified crucial habitat polygon. Furthermore, conditions would be placed on any proposed federal

CBNG development within crucial sage-grouse habitat areas with the goal of avoiding displacement of sage-grouse from crucial habitat areas. BLM would place a limit on the volume of untreated water discharged to surface waters from federal CBNG wells within each fourth order watershed. The fourth order watershed level was adopted for this alternative because it provides a geographic perspective consistent with the analysis completed for the 2003 FEIS and is appropriate for the SEIS analysis.

Exploration and development of CBNG resources on BLM-administered minerals would also be subject to a Reservation buffer (5 miles), an evaluation of water management options, POD requirements, State and federal permits, and lease stipulations.

Alternative G – Phased Development Multiple Screens (Low Range)

Under this alternative, development of CBNG on federal leases in the Billings and Powder River RMP areas would be done following the same management actions as described under Alternative F; however, development would be limited to the low range of predicted wells (6,470) from the RFD (325 per year). Therefore, the following would be applied under Alternative G:

- Annual cumulative limit (5 percent or 325 APDs/year)
- Fourth order watershed rate of development
- Wildlife habitat (20 percent over 20 years)
- Crucial Sage-grouse habitat conditions
- Untreated produced water (10 percent of 7Q10) thresholds
- Reservation buffer distance (5 miles)
- Principles of adaptive management
- Plan of development (POD) requirements
- State and federal permits, and lease stipulations
- Discussion of a range of water management options

The low range of development, as described in the reasonably foreseeable development (RFD) scenario, was developed following the same assumptions as the high range.

Alternative H – Preferred Alternative - Multiple Screens

Alternative H is the BLM’s preferred alternative for the development of CBNG resources on BLM-administered lands. Mitigation measures and screens in this alternative would be applied to BLM administered mineral estate.

Alternative H has three key components. First, a phased development approach would be implemented where CBNG proposals would be reviewed against four filters or screens to determine if the proposal needs to be modified. Second, this alternative would include extensive requirements that an operator must meet when submitting a POD. Third, mitigation measures would be considered and applied to each POD, as appropriate.

The review screens would be applied to water resources, wildlife, Native American concerns, and air resources. The screens would be implemented to monitor impacts and develop a decision-making process that could control and reduce impacts before authorizing the action. The phased approach is intended to reduce the overall cumulative impacts to any resource by managing the pace of development. Reduced development rates may extend the overall time required for extraction of the CBNG resources. Such reductions might be one outcome of the phased development approach. No restrictions on the pace of development may occur if POD submittals were slower than anticipated, or if monitoring data indicates that additional impacts to resources are being mitigated. In other words, full-field development may be allowed if each POD passed the four screens and sufficient monitoring data were available to evaluate each POD against the four screens.

Exploration and development of CBNG resources on BLM-administered minerals would be subject to agency decisions, lease stipulations, permit requirements, and surface owner agreements.

Chapter 3: Affected Environment

This chapter in the SEIS does not present impacts. It describes what is currently present or happening within the counties being analyzed.

The affected environment includes the physical, biological, social, and economic resources that the alternatives could impact. For the BLM, these resources are in two resource planning areas located in south-central and southeastern Montana. Several federally recognized Indian tribes own land within the RMP areas analyzed in the SEIS. These tribal governments include the Crow Tribe of Indians, the

Northern Cheyenne Tribe, The Lower Brule Sioux Tribe, and the North Dakota Turtle Mountain Tribe. Their land holdings are an important share of the planning area:

- The Crow Reservation comprises nearly 2,296,000 acres in south-central Montana.
- The Northern Cheyenne Reservation comprises about 445,000 acres in southeastern Montana, and lies just east of the Crow Reservation.
- The North Dakota Turtle Mountain Tribe has approximately 61,250 acres of federal trust lands allotted to their members, which are scattered throughout the emphasis area.
- The Lower Brule Sioux Tribe has also contacted BLM about the allotted lands held in trust by the federal government in the emphasis area, along with numerous traditional cultural sites.

These Native American land holdings share many of the same resource values as those summarized below for the planning area.

Resources in the emphasis area are described in the SEIS based on the scope and intensity of the potential impacts. The following bullet points highlight the existing resource conditions. For more information about the resources in the study area, see Chapter 3 in the SEIS.

- Air quality is generally very good, based on few industrial emission sources and on scattered residences in small communities and isolated ranches.
- The area is rich in cultural resources, especially historic sites, including fur trading posts, homesteads, emigrant and stage trails, Indian war battle sites, ranch centers, and many Native American sites (the use of which continued well into the historic period).
- Minerals include uranium, gold, silver, gypsum, vanadium, and bentonite. Oil and gas resources are scattered across the analysis area. Extensive coal beds are an especially important resource in south-central and southeastern Montana.
- Surface water is the primary water source for Montana users. The quality of surface water is generally good to fair, but some problems with salinity occur during periods of low flow. Groundwater is a minor source of usable water, however in some areas groundwater is the only source of water for domestic stock use. Groundwater quality is sometimes a problem, often making it unsuitable for irrigation; however it typically meets standards for domestic and stock use.

- Indian trust assets include lands, timber, water resources, other natural resources, and assets held in trust by the U.S. government for Indian tribes and individual Indians.
- Livestock grazing is an important economic activity. The planning area includes some 1,205 federal grazing allotments, covering about 1.6 million acres of federal land.
- Recreation is an increasingly important feature of the Montana economy. Large areas of federal and state land are dedicated to recreation, including land for fishing, hunting, hiking, photography, wildlife viewing, water sports, off-road vehicle activities, camping, touring, and caving.
- Population within the planning areas is increasing at an average annual rate of 1.1 percent. Socio-economic data from the 2000 census shows a total population of about 238,760 people in the planning area. These residents, along with the many thousands who annually visit and use Montana resources, are important contributors to the overall health of the Montana economy.
- Socio-economic data includes the per capita income figure for the planning area: \$17,427. The statewide per capita figure was \$21,229, while the total U.S. figure was \$27,203. Per capita income has been increasing in the planning area at roughly a 5.2 percent annual rate.
- Vegetation varies within a wide range of plant communities: grasslands, shrublands, forests, and riparian areas.
- Visual resources in the analysis area are diverse and of high importance, both to residents and to the many visitors to Montana.
- Wildlife include mammals such as elk, mule deer, white-tailed deer, and pronghorn; bird species, including waterfowl, raptors, and songbirds (many of which are neotropical migrants); reptiles and amphibians; and many species are either listed for protection or are of special management concern, including sage grouse, mountain plover, prairie dogs, gray wolf, Canada lynx, and the grizzly bear.

Chapter 4: Environmental Consequences

This chapter of the SEIS presents the scientific and analytical information that supports conclusions about the potential impacts of the alternatives analyzed.

The resource impacts summarized in this section focus on the most important impacts of Alternative H—Preferred CBNG Development Alternative.

Alternative H is the one that the BLM currently consider to be “preferred” (that is, the alternative that the BLM will likely select in their respective RODs following issuance of the FSEIS).

Resources with Low Intensity Impacts

Potential impacts on some resources are of low intensity and do not change much, if at all, among alternatives. Impacts of this sort do not help readers distinguish between alternatives.

This similarity among alternatives occurs because the alternatives are programmatic in nature. Programmatic alternatives do not and cannot reflect actual conditions at specific sites. The APD process is used to verify that the BLM and the State have considered actual site conditions before issuing an APD. Resources with low intensity and similar impacts include the following:

- Cultural Resources
- Environmental Justice
- Geology and Minerals
- Livestock Grazing
- Paleontological Resources
- Solid and Hazardous Wastes
- Wilderness Study Areas

Resource Impacts that are Important Features of Alternative H

The following sections highlight those impacts that would help readers understand the context and intensity of the actions included in Alternative H. For more information about these impacts, see the full text of Chapter 4 in the SEIS.

Air Quality

Alternative H project emissions would not alone cause a potential violation of National or Montana Ambient Air Quality Standards (NAAQS/MAAQS) or Prevention of Significant Determination (PSD) Class I/Class II Increments. However, impacts on visibility at several (15) Class I and Class II areas, including the Northern Cheyenne, and Crow Indian Reservations, have been predicted through modeling. BLM has developed the Air Quality Screen under Alternative H to mitigate potential impacts to air resulting from project related emissions. Additionally, the air quality permitting process would be used to analyze emission sources at the project level for CBNG development. Emission sources that would violate standards would not be permitted by the agencies. Thus, the residual impacts to air quality would remain within standards.

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Hydrological Resources

Surface Water

Surface water quality would be slightly altered from current water quality conditions, which are generally good. Downstream uses would not be diminished. Surface water flows moderately increase from existing flows, causing some minimal riparian erosion as well as associated sedimentation.

Groundwater

Groundwater drawdown of more than 20 feet is anticipated to extend 4 to 5 miles from the edge of production within the coal seam. However, this value may vary, depending on the intensity of CBNG development and site-specific conditions. Minor impacts on shallow groundwater quality could occur, due to some infiltration from impoundments and from other water management practices.

Beneficial Reuse

The required use of Water Management Plans would increase beneficial reuse of production waters (more than 20 percent of the production water from a given well).

Indian Trust Assets

Impacts on Indian trust assets would be mitigated, as with the preceding discussion of surface water, groundwater, and beneficial reuse management requirements. Potential effects from groundwater drawdown would be reduced by implementation of a 5-mile buffer zone. With regards to Tribal CBNG resources, mitigation and monitoring measures would protect the resources of the Tribes. Wildlife monitoring and protection measures would be employed to prevent the loss of important hunting, fishing, and plant gathering locations. Traditional cultural property sites would be identified sooner through the use of block surveys and Tribal consultations. Air Quality impacts would be mitigated through site specific permits and implementation of the control measures included within the Air Quality Screen under Alternative H.

Lands and Realty

Impacts would result from ground disturbance associated with roads, utility corridors, and CBNG drill pads. The land disturbed by CBNG activities could range from approximately 32,850 acres (long-term) to as many as 55,100 acres (short-term). These acreages are less than 1 percent of the planning area analyzed (approximately 19.4 million acres).

Recreation

Adverse impacts from roads, utility corridors, and well pads would be balanced by the increased road access. The overall impacts of Alternative H would be limited in intensity and would vary greatly from site to site.

Social and Economic Values

Exploratory and production wells could result in some new employment opportunities and some associated increases in population, but the overall percentage increase would be less than 1 percent. These impacts would be economically beneficial, but the social impacts could be either beneficial or adverse.

Soils

Disturbance to soils would be minor, based on the estimate that only 32,850 acres (long-term) would be disturbed by CBNG activities. Changes in soil chemistry would also be minimal, based on the control of production water discharges and water quality protection measures.

Vegetation

Alternative H would potentially disturb nearly 55,100 acres in the initial short-term period. Of this, approximately 48,850 acres would be native vegetation consisting of 21,450 acres of grassland, 13,200 acres of shrubland, 11,700 acres of forest land, and 2,500 acres of barren land. Noxious weed controls would be employed to control the potential spread of these unwanted species. This disturbance is less than 1 percent of the acreage in the emphasis area.

No federal threatened or endangered plant species are known to occur within the Planning Area.

Visual Quality

Visual impacts would be moderate in nature and, in some cases, permanent. For example, power line access corridors are likely to be permanent and highly visible. Required management actions (mitigations) would lessen the impacts on visual quality by employing camouflage techniques and limiting development on certain visual resource classified areas.

Wildlife

Direct impacts on wildlife would include habitat loss, death from collisions with vehicles, and disturbance from human access. Mitigation of these impacts would occur through implementation of the control measures included within the Wildlife Screen under Alternative H.

Chapter 5: Consultation and Coordination

The BLM and the State conducted extensive consultation and coordination and provided opportunities for public comment during SEIS preparation. Public comment periods are intended to provide interested and concerned individuals opportunities to express their concerns and issues related to decisions the BLM should make.

The National Environmental Policy Act (NEPA) scoping and consultation included federal agencies, state departments, and Native American tribes. Key steps and dates in the consultation and coordination were as follows:

- The BLM published a Notice of Intent in the *Federal Register*, informing the public and other agencies that the SEIS process is beginning (August 5, 2005 (Vol. 70, No. 150, Page 45417)).
- The BLM held four scoping meetings and circulated written requests for information and questions (August and September 2005).
- The BLM met with FWS and with other federal agencies, including the agencies that are official cooperators in the SEIS process. The BLM and the State also met with the Crow Tribe of Indians, and the Northern Cheyenne Tribe throughout 2005 - 2007.