

Many people living on the Reservation today are direct descendants of these original Tongue River Valley homesteaders. Narrative Report at 7-21. Since current archaeological survey data is inadequate to identify all these sites, all sections where land records indicate Northern Cheyenne homesteading activity took place should be withheld from CBM exploration and development. These sections are identified in Appendix G to the Tribe's Narrative Report.

3. Significant Hunting, Fishing and Plant Gathering Areas in Tongue River Valley.

As discussed in the Tribe's Narrative Report, the Northern Cheyenne value the Tongue River Valley because of the vegetation and wildlife it sustains. About 57% of Birney residents and 84% of Ashland residents supplement their income or partially subsist by hunting, fishing and gathering wild plants and herbs. These subsistence sources remain important today. Edible plants collected along the Tongue River are listed on page 7-27 and in Appendix F of the Narrative Report. Plants of the Tongue River region are also valued by the Northern Cheyenne for their medicinal properties and are also listed on page 7-27 and Appendix F of the Narrative Report. Plants in the Tongue River valley such as cottonwood trees also have spiritual significance to the Northern Cheyenne. *Big Medicine*, a rare and important medicinal root, is collected along the east side of the Tongue River, as well as along Poker Jim Creek. Increasing the ease of access to the medicinal plants across from Birney and in the Poker Jim area has been a major concern for the Tribe. Narrative Report at 7-21 - 7-27. Consultation with the Tribe should begin immediately to identify specific hunting, fishing and plant gathering areas that would be protected in a phased development alternative.

4. Culturally Important Springs.

The Northern Cheyenne believe that springs, rivers, swamps and groundwater are living beings with spirits. According to the 2001 Northern Cheyenne Reservation Survey on Traditional Economy and Subsistence, over 97% of the people believe that springs have important spiritual value. The Northern Cheyenne communicate with these spirits. The ongoing traditional cultural importance of these water locations can be seen in the respect shown to these locations and in the ceremonial offerings made at these locations. Narrative Report at 7-12. Failure to protect culturally important springs, both on and off the Reservation, will constitute an irretrievable and irreversible cultural and spiritual impact to the Northern Cheyenne Tribe. Consultation with the Tribe should begin immediately to identify cultural important springs that would be protected by a phased development alternative.

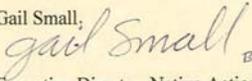
IV. Conclusion

The Tribe believes the SEIS/Amendment remand process is an excellent opportunity for BLM to comply with its trust responsibility to the Tribe and to correct significant flaws in the 2003 FEIS. As the district court has ordered, the primary purpose of the SEIS/Amendment is to evaluate phased CBM development alternatives. The Tribe believes that such alternatives must contain two components – restrictions on the rate of development and restrictions on the location of development within the Powder River and Billings RMP areas. Moreover, restrictions on the rate of development should be evaluated under high, medium and low intensity scenarios. Both

the rate and location restrictions are complementary aspects of phased development and are critical to BLM's consideration of an alternative that fulfills the 2003 FEIS' purpose and need of "minimiz[ing] the environmental and societal impacts related to CBM activities."

Once BLM has selected a range of phased development alternatives, it must compare and evaluate the effects of those alternatives on the human environment. In particular, the agency must consider the effects of phased development on the Tribe's social, economic and cultural well-being, the air quality of the Northern Cheyenne Reservation, surface water quality, groundwater and methane migration, methane drainage, wildlife resources, and the Tribe's cultural resources. Because this evaluation of impacts involves many areas of unique tribal expertise and knowledge, it should be undertaken in close consultation with the Tribe.

Submitted this 2nd day of September, 2005 on behalf of Native Action, Inc.

Gail Small,

Executive Director, Native Action



VIA EMAIL AND CERTIFIED MAIL, RETURN RECEIPT REQUESTED

September 2, 2005

U.S. Bureau of Land Management
Miles City Field Office
Attn: Mary Bloom, SEIS/Amendment Comments
111 Garryowen Road
Miles City, Montana 59301

Re: Northern Plains Resource Council's Scoping Comments in Response to BLM's Notice of Intent to Prepare a Supplement to the Statewide Oil and Gas Final Environmental Impact Statement and Amendment of the Powder River and Billings Resource Management Plans. See 70 Fed. Reg. 45417 (August 5, 2005).

To Whom It May Concern:

I. Introduction

Northern Plains Resource Council (Northern Plains) welcomes the opportunity to comment on the scope of the Bureau of Land Management's (BLM) supplement for the 2003 Final Statewide Oil and Gas Environmental Impact Statement and Amendment of the Billings and Powder River Resource Management Plans (2003 FEIS/RMP).

As indicated in the Notice of Intent to prepare a supplement to the 2003 FEIS/RMP, BLM is preparing the supplement to comply with an Order of the U.S. District Court for the District of Montana. This order resulted from Northern Plains and other parties' successful challenges to the BLM's decision approving the 2003 FEIS/RMP. In its February 25, 2005 Order, the U.S. District Court for the District of Montana found that the 2003 FEIS/RMP was inadequate because it failed to consider a phased development alternative. See *infra* §II.B herein for a more

detailed discussion of the decision. The Court remanded to BLM to prepare a supplement to the 2003 FEIS/RMP to remedy this flaw.

In light of the ruling that the 2003 FEIS/RMP was inadequate because it failed to consider a phased development alternative, the district court determined that it "need not examine plaintiffs' hard look claims." See February 25, 2005 Order at 27. Nevertheless, the court proceeded to issue an "advisory opinion" that "as a whole, the FEIS adequately considered the impacts of CBM development in the Powder River Basin." *Id.* at 27. At the same time, the "advisory opinion" also provided, "for the guidance of BLM in its further analysis on remand," an analysis of two "areas of concern" – the effectiveness of private mitigation agreements in addressing aquifer drawdown and the need to include the Tongue River Railroad in the analysis of cumulative effects. *Id.* at 28-29. As a result, Northern Plains' other NEPA claims were dismissed without prejudice. Northern Plains expects BLM to take this opportunity to remedy these other flaws, not just the NEPA alternatives deficiency, in the 2003 FEIS/RMP.

As you are aware, Northern Plains and its members were deeply disappointed with BLM's level and analysis and approach in the 2003 FEIS/RMP. We remain hopeful that BLM will take advantage of this opportunity to carefully evaluate and disclose the cumulative environmental impacts of coal bed methane development in Montana on other resource values. More important, BLM needs to take this opportunity to develop and adopt a preferred alternative that allows for responsible development of methane resources on federal lease parcels in Montana while preventing unacceptable adverse impacts on other resource values in the region.

During the 2003 FEIS/RMP NEPA process, Northern Plains submitted numerous documents with our scoping comments, comments on the DEIS, and protest of the FEIS. BLM did not even include many of these documents in the administrative record for the NEPA process much less consider them in reaching their decision to adopt Preferred Alternative E. Northern Plains is again including documents along with its scoping comments and incorporates by reference those documents. In an attempt to facilitate BLM's review of those documents, Northern Plains is including a list of such documents and providing them in electronic format. See Exhibit A.

II. BLM Needs to Take a Hard Look at a Full Spectrum of Phased Development Alternatives that Address Several Key Concepts

Because BLM and industry have significantly muddied the water regarding the concept of a "phased development," Northern Plains feels it is imperative to identify the key components a phased development alternative must address. At this time, Northern Plains does not want to prejudice the range of phased development alternatives considered in detail by the BLM in the supplement. Instead, Northern Plains provides key components that any such alternative must address. Before doing so, a brief history of the phased development concept is in order.

A. BLM's Failure to Consider Any Phased Development Alternative in 2003 FEIS/RMP.

The 2003 FEIS/RMP states that the purpose and need for BLM's amendment of the RMPs is "to change [BLM's] planning decisions by considering oil and gas management options, including mitigating measures that will help minimize the environmental and social impacts related to CBM activities." FEIS at 1-2.

Despite this broad statement of purpose and need, the FEIS never gave detailed consideration to an alternative other than full-field development of all federal CBM resources throughout the Powder River RMP area. FEIS at 2-5 to 2-17. The only alternative BLM examined with a lesser degree of development was the "no action" alternative required by NEPA's implementing regulations. The differences between the four action alternatives considered involved only relatively minor variations in the mitigation measures BLM and other agencies would require when approving CBM drilling permits. FEIS at 2-18 to 2-21.

In examining only full-field alternatives, BLM expressly declined to consider "phased development" alternatives suggested by the Environmental Protection Agency (EPA), Montana Department of Fish, Wildlife, and Parks (MDFWP) and others throughout the NEPA process. In its scoping comments, EPA asked BLM to consider a phased development alternative. EPA explained that "[a]n alternative that incorporates a phased development of coal-bed methane could help reduce the significance of impacts by spreading them out over a period of time." EPA also recommended that BLM's alternatives analysis should identify (1) areas where methane development "cannot avoid creating significant environmental impacts and should be closed to leasing" and (2) areas that "require lease stipulations in order to reduce environmental impacts to an acceptable level." The MDFWP asked BLM to consider a phased development alternative that would protect regional wildlife corridors.

In comments on the preliminary DEIS, numerous state and federal agencies and other parties again criticized BLM failure to analyze any alternatives to full-field methane development.

BLM acknowledged several of the phased alternatives proposed during the NEPA process in the FEIS:

Staged of phased development was presented to BLM during scoping in several ways. First, the number of rigs operating in the emphasis area could be controlled and leases developed in stages. Second, companies would be allowed to develop production in one geographic area at a time and when complete, move to another. Lastly, corridors could be left undeveloped to allow for wildlife movement.

FEIS at 2-4.

Northern Plains repeatedly submitted specific comments regarding the type of phased development alternatives that BLM should consider. These concepts included (1) placing a limit on the number of operating methane wells drilled in particular areas or over specific time periods, (2) closing the Basin to additional leasing for methane development, and (3) the development of new lease stipulations to mitigation the unique impacts of methane development on other resources and ranchers in the Basin.

BLM rejected all of these alternatives without detailed consideration. The agency argued that the 1994 RMP Amendment had already determined the areas to be open to oil and gas development and the stipulations to be attached to oil and gas leases. FEIS at 2-2. Although BLM acknowledged that the 1994 RMP Amendment did not include any analysis of full-scale methane development, BLM refused to reconsider these leasing decisions and stipulations because "CBM is part of the oil and gas estate" and "[e]xisting oil and gas leases include the right to explore and develop CBM." FEIS at 1-1, 2-2. BLM also contended that phased development would be inconsistent with the "investment-backed expectations" of the lessees and the Mineral Leasing Act, 30 U.S.C. § 181 *et seq.* FEIS at 2-4.

In its Order, the U.S. District Court rejected all of BLM contentions as to why a phased development alternative could not be considered in detail or required.

B. Court Order Requiring BLM to Consider a Phased Development Alternative

In *Northern Plains Resource Council v. U.S. Bureau of Land Mgt. (Northern Plains I)*, 298 F. Supp. 2d 1017 (D. Mont. 2003), Northern Plains argued that BLM's issuance of oil and gas leases pursuant only to the 1994 RMP Amendment violated NEPA because BLM knew or should have known that the leases would be developed for their methane potential and the 1994 RMP Amendment did not address the environmental impacts of methane development. Northern Plains contended that the issuance of oil and gas leases constituted an irreversible commitment of resources under *Connor v. Burford*, 848 F.2d 1441 (9th Cir. 1988), because they conveyed an unqualified right to develop the entire oil and gas estate, including methane. *Id.* at 1022. In response, BLM and industry intervenors contended that the rights granted by the leases were limited by the 1994 RMP Amendment which allowed only exploration and small-scale methane development. The district court agreed. It held that oil and gas leases issued under the 1994 RMP Amendment "did not in fact convey development rights any greater than those authorized by the [1994 RMP Amendment]." *Northern Plains I*, 298 F. Supp. 2d at 1023. The court reasoned that "the rights to develop the leasehold interest were subject to and limited by the provisions of the 1994 RMP/EIS" and therefore that "the lessees were granted only the right to undertake exploratory drilling and small-scale development of CBM resources." *Id.* at 1024. Because the leases conveyed no right to full-field methane development, the issuance of leases did not violate NEPA. *Id.* This Court affirmed the district court's decision in an unpublished ruling. 107 Fed. Appx. 166 (9th Cir. 2004).

Northern Plains filed suit challenging the BLM decision approving the 2003 FEIS/RMP in May 2003. On February 25, 2005, the court ruled on the parties' cross motions for summary judgment. *Northern Plains Resource Council v. U.S. Bureau of Land Mgmt.*, No. CV 03-69-BLG-RWA (D. Mont. Feb. 25, 2005) (February 25, 2005 Order).

The Court held that NEPA required BLM to consider a phased development alternative because it was both consistent with the agency's stated purpose and need and was feasible under the circumstances. See February 25, 2005 Order at 12, 19. In reaching this conclusion, the district court dismissed BLM's reasons for not considering anything less than full-field development. *Id.* at 12-19). The Court examined the FEIS's broad purpose and need statement and found that "[n]othing in the Statement restricts [the alternatives] to full-field development." *Id.* at 13. Additionally, the Court concluded that a phased development alternative would not hinder the stated goal of "minimiz[ing] the environmental and societal impacts related to CBM activities" but in fact would further this objective. *Id.* at 13-14.

The court also rejected BLM's argument that it need not consider phased development alternatives because they were not feasible. First, the court reasoned that the agency's concerns about drainage of federal minerals did not trump BLM's obligation to conduct a thorough environmental analysis under NEPA, "particularly where the minerals were leased before the environmental impacts of CBM development had been analyzed." *Id.* at 16. Second, the court relied on its holding in *Northern Plains I* to conclude that a phased development alternative would not interfere with the leaseholders' investment-backed expectations. They had purchased leases subject to the limitations of the 1994 RMP Amendment, which allowed "only the right to undertake exploratory drilling and small-scale development of CBM resources." *Id.* at 16-17 & n.9 (quoting *Northern Plains I*, 298 F. Supp. 2d at 1024). Consequently, BLM was not obligated to approve full-field development, as its claim that phased development would unduly restrict leaseholder rights was based on a premise that was "legally untrue." *Id.* at 19. The district court concluded that BLM's "failure to analyze a phased development alternative renders the EIS inadequate." *Id.*

C. Key Components Any Phased Development Alternative Must Address

1. Start with Premise that Existing Leases Convey Only Limited Rights

BLM's identification and evaluation of phased development alternatives must start with the fundamental premise that the federal oil and gas leases in the Basin *do not yet* convey the right to full field development. In the 2003 FEIS/RMP, the BLM, relying upon its erroneous assumption that the leases conveyed the right to each company to engage in development of its federal lease acreage, refused to evaluate any alternative (except the required no action alternative) that did not allow development of federal leases for methane development whenever and wherever it was proposed by the methane industry. By definition, phased development alternatives must include limits on where, when, and under what conditions methane development on federal leases can occur.

BLM's own analysis showed that all of these development alternatives, including the preferred alternative E, would cause irreparable harm to virtually all the other resource values of the Basin even after all available mitigation measures were implemented. All of the development alternatives developed in the 2003 FEIS/RMP, including the BLM's Preferred Alternative E, violate the central tenet of the Federal Land Policy and Management Act (FLPMA) that requires that the public lands be managed "in a matter that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values." 43 U.S.C. § 1701(a)(8). The FLPMA also requires that BLM prevent undue and unnecessary degradation of other resource values. Most, if not all, of the impacts of methane development are both undue and unnecessary. BLM is blatantly violating the FLPMA unless it puts these other resource values on an equal footing with methane development, as it is required to do, at the RMP-level. In identifying and evaluating phased development alternatives, BLM will have to put these other resource values on an equal playing field with methane development in the Basin.

2. Utilize a Basin-wide Approach

In identifying and evaluating phased development alternatives, BLM must engage at planning across the entire Basin at the RMP level as the FLPMA envisioned. While Northern Plains can sympathize the enormity of the task upon which BLM must engage at the RMP stage, BLM in essence dug its own grave by leasing most of the Basin for methane development before evaluating the environmental impacts of development of those leases. Planning across all the leases in the Basin with moderate to high methane potential requires that the BLM inventory and disclose existing lease acreage held by individual leases (federal parcels as well as state and fee minerals). BLM also needs to disclose and discuss the ramifications of existing unitization agreements and communitization agreements in the Basin.

3. Complete Baseline Resource Inventories

As discussed in §IV.A herein, BLM needs to complete adequate inventories of other resource values on the Basin for resources likely to be impacted by methane development. The BLM is required to base its management decisions on current or up-to-date resource inventories. These inventories are an essential prerequisite to meaningful land-use planning. Without such inventories of its resources, the BLM cannot know the value of its resources, nor make decisions on how those resources should best be used. Section 201(a) of the FLPMA mandates that:

The Secretary *shall* prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values, giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. 43 U.S.C. §1711(a).

BLM needs to complete inventories for virtually every resource in the planning areas including but not limited to baseline inventories of wells and springs tapping coal seam

aquifers (locations, flow rates, water quality, etc.), prime agriculture land (irrigated hay and alfalfa meadows), key wildlife habitat (sage grouse leks and wintering grounds, mule deer winter range and calving grounds, riparian zones), surface water quality, geologic formations suitable for reinjection of methane wastewater, air quality, populations of sensitive plant and animal species (population numbers, trends, habitat requirements, etc.), soil types under irrigation, etc.

After completing these inventories, BLM needs to establish baseline conditions for each resource value across the Basin. It is impossible to develop a phased development alternative to protect these other resource values without knowing what is out there at the landscape level.

4. Identify Critical Areas Where Other Resource Values Need to be Protected

BLM needs to use the baseline inventories to identify critical areas where other resource values need to be protected from the impacts of methane development (wildlife migration corridors, prime farm land, concentrated springs and associated riparian vegetation along coal outcrops, etc).

5. Re-Consider its Alternatives at the Leasing Stage

BLM needs to do what it refused to do in the 2003 FEIS/RMP and reconsider its leasing decisions. BLM made its leasing decisions in 1994 without evaluating the impacts of methane development. BLM's preliminary planning criteria state that the supplement "will incorporate the requirements of the BLM Handbook H-1624-2, *Planning for Fluid Minerals*. See Preliminary Planning Criteria (August 5, 2005).

BLM's planning handbook requires the BLM to consider the following alternatives at the lease stage: (1) identify areas closed to leasing, (2) identify areas open to leasing and development subject to standard lease terms, (3) identify areas open to leasing and development subject to seasonal restrictions; (4) identify areas open to leasing and development subject to no surface occupancy stipulations; (5) develop lease stipulations needed to protect other resource values at the Basin level in areas open to leasing including the development of new lease stipulations and revision of out-of-date stipulations, and (6) develop procedures for the waiver, exception, or modification of such stipulations. BLM has ample authority to reconsider these leasing decisions under the decision in *Northern Plains Resource Council v. Bureau of Land Management et al.*, 298 F.Supp.2d 1017 (D. Mont. 2003)(holding that existing federal leases in Basin convey only the limited right to exploration and small-scale development).

Given the level of impacts predicted by BLM from developing methane resources on existing federal leases in the Basin, the BLM needs to take a step back and consider closing the Basin to additional leasing for methane development. BLM also needs to consider buying back or terminating existing leases or imposing NSO stipulations to protect critical areas and other resource values.

BLM also needs to evaluate and modify existing lease stipulations and develop new lease stipulations to address the unique impacts of methane development. BLM has never even considered developing new lease stipulations to protect other resource values from the impacts of methane development. By BLM's own admission, many of the existing stipulations to protect wildlife are inadequate (sage grouse stipulations). For example, BLM could develop a water well and spring mitigation stipulation to address the impacts caused by drawdowns. BLM could also consider developing a lease stipulation outlining reclamation requirements for impoundments and LAD sites, including increased per acre bonding requirements. BLM needs to apply the modified lease stipulations and new stipulations retroactively on existing leases in the Basin.

BLM needs to consider imposing No Surface Occupancy clauses on existing leases to protect other resource values such as irrigated hay meadows and alfalfa fields, cattle calving grounds, sage brush leks, nesting and wintering grounds, crucial big game winter range and calving grounds, wetlands, etc.

6. Establish Threshold Levels of Impact for Other Resource Values at the Basin Level that are Specific, Measurable, and Achievable

Once BLM has given other resource values as much protection as possible at the lease stage, BLM needs to develop conservative thresholds (specific and measurable by monitoring) for each resource value. Exceedence of the threshold value, as indicated by monitoring, would trigger immediate response and remedial actions. For example, there could be a percentage degradation in water quality for EC or SAR (well below water quality standards), # of sage grouse leks abandoned, number of springs lost in given area, road densities in an area, etc. These thresholds should be set to test the BLM's proposed mitigation measures and other protections for other resource values. The response and remedial actions should be specific, achievable, and mandatory. The thresholds and response and remedial actions should be requirements in the Record of Decision and should be incorporated as lease stipulations.

The FLPMA and BLM's planning regulations clearly contemplate such a proactive preventative approach. BLM's planning regulations provide that RMPs:

[S]hall establish intervals and standards, as appropriate, for monitoring and evaluation of the plan. Such intervals and standards shall be based on the sensitivity of the resources to the decisions involved and shall provide for evaluation to determine whether mitigation measures are satisfactory, whether there has been significant change in related plan of other Federal agencies, State or local governments, or Indian tribes, and whether there is new data of significance to the plan. 40 C.F.R. 160.4-9.

The predicted violations of air and water quality standards in the 2003 FEIS/RMP emphasize the importance of this RMP requirement. After acknowledging that waiting for standards to be exceeded will trigger a "lengthy, burdensome, and costly" regulatory process, the BLM's own air quality analysis recommended establishing thresholds short of regulatory standards

that would trigger implementation of control and mitigation measures to avoid reaching regulatory thresholds and regional monitoring to track changes in air quality. *FEIS AIR-3*. The EPA made similar recommendations to protect air quality and groundwater resources.

In its response to Northern Plains' Protest, the BLM Director concluded that the RMP Amendment did not include intervals and standards under which to evaluate the RMP and to determine whether mitigation measures are satisfactory as required by FLPMA. The Director instructed the State Director to include such intervals and standards in the ROD. The ROD does not include intervals and standards for evaluating the RMP, nor does it incorporate any of the EPA's or its own air quality analysis.

7. Establish a Regional Monitoring Plan

BLM needs to establish, at a regional level in the Record of Decision, monitoring plans for each resource. The regional monitoring should be funded by industry. There should be a monitoring team established for each resource and there should be at least annual if not quarterly reports. All monitoring data should be available on the internet. In the 2003 FEIS/RMP, BLM established some regional monitoring. BLM needs to provide an update on the status of each regional monitoring plan (surface water quality, ground water, air quality, wildlife, etc.) including funding commitments, etc.

8. Cooperate with Other State and Federal Agencies

BLM needs to work with the Montana Board of Oil and Gas and require unitization of leases and require communitization agreements to minimize infrastructure within individual fields and ensure companies share infrastructure to the extent possible. For example, shared reinjection facilities would facilitate reinjection by spreading out the costs between several companies and ensure a large volume of produced water that might be necessary to drive companies to invest the capital in such a project.

BLM makes no mention of its sister co-lead agencies in the 2003 FEIS/RMP process, MDEQ and MBOGC, in the Notice of Intent for this supplement. It is simply impossible for BLM to develop and evaluate a phased development alternative without working closely and in a cooperative fashion with these Montana agencies. The MBOGC regulates methane development on fee minerals. The Montana State Land Board exercises similar jurisdiction over school trust property and minerals. The Basin consists of an intermingled checkerboard surface and mineral ownership pattern. Without the working with these Montana agencies and entities in a cooperative fashion, BLM cannot even start to develop, much less evaluate, a phased development alternative.

B.. Spectrum of Phased Development Alternatives to be Evaluated

Northern Plains believes BLM needs to give detailed consideration to a full spectrum of phased development alternatives that address all the components discussed above. Such phased development alternatives might include but should not be limited to the following:

- BLM needs to consider a phased development alternative that requires lessees to develop their lease acreage in one geographic area at a time and combines such a development pattern with reinjection of some or all of the volume of wastewater produced in subsequent phases of development into coal seams depleted in initial stages of development.
- BLM needs to consider a phased development alternative placing a limit on the number of producing wells drilled in particular areas (watersheds or sub-watersheds) or over specific time periods.
- BLM needs to consider a phased development alternative that allows for the development of only certain coal seams at a time starting with the deeper geological formations. When these initial zones have been depleted, produced water from other coal seams, developed in subsequent development phases could be re-injected into these depleted coal seams by converting the original wells into reinjection wells.

When BLM has developed its spectrum of phased development alternatives, BLM must then take the next step and basin on the information provided in the sections on the Affected Environment and Environmental Consequences evaluate the environmental impacts of the spectrum of phased development alternatives. 40 CFR 1502.14

But more important, BLM must compare the impacts of the phased development alternatives with the impacts of the full field development scenarios of the 2003 FEIS/RMP. These analysis needs to provide a clear choice among the competing options for both the BLM and the public. *Id.*

III. **BLM Should Consider Other Alternatives**

A. Alternative Requiring Operators to Implement Wastewater Technologies and Practices to Prevent and Reduce the Volume of Wastewater Produced.

If wastewater could be eliminated or reduced from methane operations, water-related impacts would not be an issue with coal bed methane extraction. Some technologies like down-hole separation hold promise to deliver those results but are not yet available. However, research being performed as more methane data becomes available also shows that several means are already available to eliminate or at least substantially reduce the wastewater produced from methane operations.

Research on methane well completion methods in the Basin of Wyoming has shown that the fracturing that is propagated during well completion to make the coal seam formation more porous, whether the fractures are vertical or horizontal, can significantly affect wastewater production rates. *See* Document 1, Exhibit Y. The practice of well stimulation entails the high-pressure injection of fluid, mostly water and sand, into a producing formation to create conduits for the migration of gas to a well-bore. As the fluid flows back to the well, the sand remains in place to prop open the fractures. By

controlling the pressures, it may be possible to induce more horizontal fractures in the coal seams while reducing vertical fracturing. Horizontal fracturing of the coal seam induces less permeability outside of the coal seam and therefore results in less wastewater production than vertical fracturing. Vertical fracturing of the coal seam tends to increase the amount of wastewater produced during the dewatering phase because water from other, non-producing formations, enters the well-bore. By limiting the extent of vertical fracturing during well completion and stimulation, which appears to be possible in most cases, the amount of wastewater produced as a result of methane operations can be reduced by from 30–70%. *Id.* BLM needs to consider, in detail, an alternative requiring operators to implement these technologies and practices.

The data also indicate that many methane wells produce large amounts of water without producing significant quantities of gas. In some cases no gas has yet been produced, although water pumping has been ongoing for many years. BLM needs to consider, in detail, an alternative requiring operators to shut-in these wells with high water to gas production ratios.

All of these alternatives have the potential to significantly reduce the total volume of produced wastewater. In addition to surface water quality benefits, this type of alternative would reduce the total volume of water dewatered from the coal seam aquifers, which in turn could reduce the potential impacts on wells and springs. This type of alternative could also reduce or eliminate the number of acres disturbed by reducing or eliminating the need for wastewater impoundments, LAD sites, and related infrastructure. Reductions in disturbed acres could potentially reduce impacts to private landowners, reduce impacts on wildlife habitat and populations, reduce air quality impacts from particulates, and reduce potential reclamation costs.

BLM should take its analysis one-step further and consider, in detail, an alternative not only requiring operators to implement these technology and practices, but also requiring reinjection of the remaining wastewater. By reducing the volumes of wastewater of which operators must dispose, reinjection of the remaining volume of wastewater may be technically feasible in many areas.

B. Reclamation and Bonding Alternative

BLM needs to develop and evaluate an alternative requiring increased reclamation and bonding requirements for oil and gas development on federal leases in Montana. Numerous studies, including one by the Government Accounting Office, have documented the gross inadequacies of performance bonds to cover estimated reclamation costs for conventional oil and gas development. Methane development posed significant reclamation issues because of the amount and type of ground disturbance, which often includes the disposal of wastewater on native soils and vegetation in the form of impoundments and land application and disposal (LAD) sites. Over the last five years, Northern Plains has provided BLM with numerous documents and studies estimating reclamation costs for such sites and showing the inadequacies of the existing bonding scheme.

The Mineral Leasing Act (MLA) and Federal Lands Policy and Management Act (FLPMA) ensure reclamation will occur and unnecessary and undue degradation will be prevented by obligating the agency to set bonds in an amount that will afford full reclamation. The MLA requires that BLM:

[E]nsure that an adequate bond, surety, or other financial arrangement will be established prior to surface disturbance activities on any lease, to ensure the complete and timely reclamation of the lease tract, and the restoration of any lands or surface waters adversely affected by lease operations after the abandonment or cessation of oil and gas operations on the lease.

30 U.S.C. §226(g). The Act's plain language is clear - BLM must ensure bonds are adequate for complete reclamation. "If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency must give effect to the unambiguously expressed intent of Congress." *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 842-45 (1984).

To ensure bonds are adequate for reclamation, regulations give BLM authority to increase the amount of a bond "whenever it is determined that the . . . total cost of plugging existing wells and reclaiming lands exceeds the present bond amount based on the estimates determined by the BLM." 43 C.F.R. §3104.5(b). The bond increase may be to any level but cannot exceed the total of the estimated costs of plugging and reclamation. *Id.*

FLPMA further requires that BLM take any action necessary to prevent "unnecessary or undue degradation" (UUD) of the public lands. 43 U.S.C. § 1732(b) (1994). The UUD standard "imposes a definite standard on the BLM." *Sierra Club v. Hodel*, 848 F.2d 1068 (10th Cir. 1988). For hard rock mining, BLM has defined its obligation to prevent UUD by requiring financial guarantees, usually in the form of a surety bond, to ensure full reclamation. 43 C.F.R. §3809.1-9(b) (1999). The requirement for adequate bonding for CBM is the same as for hard rock mining; the mandate to prevent UUD includes all BLM lands.¹

¹ In its recent revisions of the § 3809 mining regulations, BLM recognized the important link between requiring adequate financial guarantees and complying with FLPMA's mandate to prevent UUD. BLM stated, "We are adopting financial guarantee requirements to prevent unnecessary or undue degradation caused by failure to fulfill the reclamation obligation." 65 Fed. Reg. 69998-69999. Posting of a financial guarantee provides an incentive to the operator to reclaim the land and protects the taxpayer from having to pay for the operator's failure. BLM concluded that adequate bonding "is necessary to ensure performance of reclamation." 65 Fed. Reg. 70067. See *MPC v. Norton*, 292 F.Supp. 2d 30, 45 (D.C. Dist. 2003). (upholding regulations based upon BLM's assurance of site specific compliance.). While most of the UUD requirements for hardrock mining are appropriate for methane development, methane development involves broad, landscape level impacts that require additional UUD consideration and compliance.

The situation of Fidelity Exploration & Production Company (FEPCO) illustrates the need for BLM to develop a reclamation and bonding alternative. FEPCO has a paltry nationwide bond of \$150,000 to cover **all** its federal leases and operations, the minimum allowable amount for nationwide bonds. 43 C.F.R. § 3104.3(b). FEPCO has a statewide bond of \$200,000 to cover all its operations on private and state mineral leases in the State of Montana. Such a bond is woefully inadequate to reclaim land application sites and waste water disposal ponds. Moreover, BLM is never made any attempt to estimate reclamation costs for any of FEPCO's methane projects.

Jim Kuipers, a leading expert in reclamation costs, estimates that FEPCO's reclamation costs just for its methane operations in Montana is currently \$6,661,000. FEPCO's total bond amount is \$350,000, which creates a potential shortfall and taxpayer liability of \$6,311,000. Regardless of any potential disagreement over estimated reclamation costs, the point is that BLM has failed in its obligation under the MLA and FLPMA to address reclamation costs and to ensure FEPCO's bond is adequate to cover these costs. *See* Document 1, Exhibit Q.

BLM's Solicitor General recently issued a Memorandum concluding that BLM has the authority and the responsibility when addressing reclamation in the context of methane to request bonds that exceed the nation-wide \$150,000 bond if the situation warrants. The Memorandum, issued July 19, 2004, construes 43 C.F.R. § 3104.5 (b), part of the regulation relied upon by BLM before this Court to argue that the \$150,000 nationwide bond is *per se* adequate. The Solicitor states that BLM has the authority and the responsibility to approach bonding issues on a lease by lease basis and require **separate bonds** in amounts **greater** than the nation-wide bond. "We construe [language of 43 C.F.R. 3104.5 (b)] to allow BLM to require that the addition [beyond the nation-wide bond] be in a separate bond tied to a specific lease or lease on which the BLM has determined it has an unacceptable risk.")

In addition, the Memorandum addresses whether BLM can require bonding for reclamation of off site impoundments, compressor stations and other facilities on non-federal lands. The Solicitor answers the question affirmatively, relying on the plain language of § 226 (g), which states BLM must reclaim surfacing disturbing activities on federal lands and "the restoration of any lands or surface waters affected by lease operations." 30 U.S.C. § 226 (g). Because statute "does not specifically limit the bonding to the restoration federal lands and because "any lands" is broad enough to include non-federal lands, we read 30 U.S.C. §226 (g) and 43 C.F.R. §3104 (a) to allow BLM to take in consideration the costs of the restoration of [non- federal lands and surface waters]." The Memorandum specifically addresses the imposition of a separate bond for CBM wastewater impoundments off-site of federal leases, and instructs BLM officers to review particular cases to see if additional bonding is applicable. The Memorandum further notes that reclamation costs on a single CBM project was estimated at six million dollars." This figure is of course identical to Kuipers estimate in the case of bar. The Solicitor's interpretation of BLM's bonding requirements is consistent with BLM's

broader statutory duty to "take any action necessary to prevent undue and unnecessary degradation of public lands." 43 U.S.C. §1732 (b).

Wyoming BLM and the Wyoming Department of Environmental Quality (WDEQ) recently released a joint bonding program for impoundments. This recent decision only highlights the need for BLM to develop and evaluate such an alternative for methane development in Montana.

The BLM needs to take the opportunity in this supplement process and develop a reclamation and bonding alternative to address the reclamation issues posed by methane development.

BLM needs to coordinate with the Montana Department of Environmental Quality (MDEQ) and Montana Board of Oil and Gas Conservation (BOGC) in developing this alternative. In developing this alternative, BLM needs to discuss the environmental impacts of not adopting increased reclamation and bonding requirements for federal oil and gas minerals and compare them to the impacts if such alternative were adopted. This discussion should include but not be limited to impacts on native soils and vegetation, impacts on noxious weed populations, impacts on wildlife habitat and populations, impacts on private farm and ranch land, impacts on erosion and sediment rates, impacts on surface water quality and aquatic life, impacts on taxpayer liability for cleanup costs, etc.

BLM needs to develop detailed reclamation requirements for the Basin that take into account the fragile native soils and vegetation of the Basin. The arid to semi-arid grassland and shrubland ecosystems of the Basin are incredibly fragile and difficult to reclaim, much less restore, even under ideal situations. BLM needs to solicit input from private landowners in developing these reclamation requirements.

These reclamation requirements should include con-current reclamation requirements as well as post-closure reclamation requirements. BLM needs to develop interim (six months after disturbance, 1-year post disturbance, 3-year post disturbance, 5-year post disturbance, etc.) and final reclamation requirements that are specific, measurable, and achievable in the Basin. BLM needs to develop a monitoring, inspection, and enforcement program to ensure compliance with these reclamation requirements. These reclamation requirements need to be mandatory and uniform for all federal lease parcels, and to the maximum extent possible apply to the surface above fee and state sections. These reclamation requirements must ensure the reclamation of all lands disturbed by methane development, a requirement of the Montana Constitution with which BLM is obligated to comply, while taking into account the concerns of private landowners to the extent they are consistent with the requirements of the Montana Constitution.

C. *Alternative Prohibiting Production in Coal Seams Feeding Large Numbers of Wells and Springs by Lease Stipulation*

As discussed in §II infra, BLM needs to consider, in detail, an alternative prohibiting the development of coal seam aquifers feeding large numbers of wells and springs. BLM's decision to rely exclusively on discretionary "water well mitigation agreements" to attempt to mitigate drawdown impacts on these springs and wells violates its obligation under the FLPMA. 43 U.S.C. § 1701(a)(8); § 1702(c); and §1732(b).

IV. Significant Remaining Issues with 2003 FEIS/RMP that BLM Must Address in Supplement

In addition to the failure to consider a phased development alternative and failure to evaluate the cumulative impacts of the proposed Tongue River Railroad, the 2003 FEIS/RMP suffers from many other flaws. The fact that no less than five separate lawsuits were filed challenging the BLM's decision approving the 2003 FEIS/RMP stands as a testament to the poor quality of the BLM's environmental analysis and illegality of its preferred alternative for methane development in Montana. BLM needs to address these issues to end the unfortunate cycle of litigation. If BLM fails to do so, it does so at its own peril.

Northern Plains has repeatedly raised its concerns with the 2003 FEIS/RMP to no avail. Northern Plains incorporates by reference its previous comments on the 2003 FEIS/RMP. While Northern Plains does not believe it is a productive use of our time to restate its concerns, we do wish to highlight some of the most significant remaining issues with the 2003 FEIS/RMP.

A. Inadequate Baseline Data or Inventory

Much of flaws in analysis in the 2003 FEIS/RMP are the direct result of the lack of baseline inventories for virtually every resource that is likely to be impacted by methane development. BLM's failure to gather such baseline data for this process violates the central mandates of FLPMA and NEPA. Section 201(a) of the FLPMA mandates that:

The Secretary *shall* prepare and maintain on a continuing basis an inventory of all public lands and their resources and other values, giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values. 43 U.S.C. §1711(a).

Similarly, NEPA, 40 C.F.R. §1502.15, requires agencies to "described the environment of the areas to be affected or created by the alternatives under consideration." Establishment of baseline conditions is a requirement of NEPA. In *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988), the Ninth Circuit stated that "without establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment, and consequently, no way to comply with NEPA." "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process."

The existence of incomplete or unavailable scientific information on baseline resource conditions that may be adversely impacted by methane development triggers the requirements of 40 CFR 1502.22. This provision requires "the disclosure and analysis of the costs of uncertainty [and] the costs of proceeding without more and better information." *Southern Oregon Citizens Against Toxic Sprays, Inc. v. Clark (SOCATS)*, 720 F.2d 1475, 1478 (9th Cir. 1983). "On their face these regulations require an ordered process by an agency when it is proceeding in the face of uncertainty." *Save Our Ecosystems v. Clark*, 747 F.2d 1240, 1244 (9th Cir. 1984). 40

CFR 1502.22 imposes three mandatory obligations on the BLM in the face of scientific uncertainty: (1) a duty to disclose the scientific uncertainty; (2) a duty to complete independent research and gather information if no adequate information exists unless the costs are exorbitant or the means of obtaining the information are not known; and (3) a duty to evaluate the potential, reasonably foreseeable impacts in the absence of relevant information, using a four-step process. *Unless the costs are exorbitant or the means of obtaining the information are not known, the BLM must gather the information in studies or research.*

The 2003 FEIS/RMP violates NEPA's environmental full disclosure mandate because it does not disclose the uncertainty concerning baseline conditions in the area or the environmental impacts of CBM development. The BLM must "make clear that it is proceeding [with methane development] in the face of [substantial] scientific uncertainty" concerning the baseline conditions of numerous adversely impacted resources. *Save Our Ecosystem*, 747 F.2d 1240, 1244 (9th Cir. 1984). The duty to conduct independent research when faced with incomplete or unavailable information insures agencies comply with NEPA's central purpose – "to obviate the need for speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action. *Save Our Ecosystems* at 1248-49. The Ninth Circuit has held that "Section 1502.22 clearly contemplated original research if necessary." *Id.* at 1244 note. 5.

The BLM has ignored to comply with this NEPA requirement at every level. First, the BLM fails to disclose that it lacks baseline information for virtually every resource likely impacted by methane development. By failing to disclose that it lacks this information, BLM has misled the public because without such data the BLM will not be able to evaluate the environmental impacts of development at the planning stage or project stage.

Second, the BLM fails to explain why it did not gather and compile this information or explain why it could not do so because the costs of obtaining the information are exorbitant. To the extent that the BLM did not collect and compile such data for this NEPA analysis, it has violated NEPA.

Third, the BLM has violated its NEPA obligation to evaluate the potential, reasonably foreseeable impacts in the absence of relevant information, using a four-step process by (1) stating that such information is incomplete or unavailable; (2) stating of the relevance

of the incomplete or unavailable information to evaluating reasonably foreseeable environmental impacts; (3) summarizing existing credible scientific evidence which is relevant to evaluating those impacts; and (4) evaluating the impacts based on theoretical approaches or research methods generally accepted in the scientific community.

B. Failure to quantify the intensity and degree of impacts on other resource values.

One of the most pervasive flaws that permeates the entire 2003 FEIS/RMP concerns BLM's reliance on qualitative versus quantitative impact assessments. BLM has mastered the obvious in being able to state the *types* of impacts but have done very little in actually telling the public what the actual intensity or magnitude of the impacts to various resources will be. BLM's failure to quantify the intensity of the impacts on other resource values is the direct result of the lack of meaningful baseline data. Without this baseline data, it is impossible to conduct a meaningful environmental impact analysis.

Courts have repeatedly emphasized that merely identifying "risks" of adverse impacts, without including an analysis of the *nature and extent* of the resulting impacts is insufficient for purposes of NEPA. See, e.g., *Defenders of Wildlife*, 130 F. Supp. 2d 121, 128 (D. D.C. 2001)(setting aside agency's EIS where it "states that noise would be increased and both the pronghorn and their habitat would be disturbed" but contained "no analysis of what the nature and extent of the[se] impacts will be"); *National Parks & Conservation Association v. Babbitt*, 241 F.3d 722, 743 (9th Cir. 2001) (NEPA document found to be inadequate where it identified "an environmental impact" but "did not establish the intensity of that impact.").

NEPA requires, to the point reasonably ascertainable, analyzing and disclosing the degree of impacts to resources, not just merely stating the obvious. E.g., how many square miles will experience in-field aquifer drawdowns, what will the magnitude of the drawdowns be across the Basin, how many wells and springs will likely be lost or adversely impacted from such drawdowns, how many of these wells and springs will be able to be replaced, what are the economic impacts the loss of these resources will have on individual ranches, the farming and ranching community of the Basin, and how many acres of riparian habitat fed by these coal seam springs will be lost? In *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F.3d 1372, 1379-80 (9th Cir. 1998), the Ninth Circuit summarized the agencies obligation in this regard:

[T]he analysis provided was very general, and did not constitute the hard look that the Forest Service is obligated to provide under NEPA. Significantly, the Forest Service has failed to even mention the number or percentage of trees meeting the definition of old growth that would be destroyed by the three other proposed timber sales in the Cuddy Mountain Roadless area, and whether the sales would affect the same pileated woodpecker home ranges that would be affected by the Grade/Dukes sale. The sole reference to future sales stated, "Future timber sales over the next several years would propose to treat additional old-growth habitat." . . . General statements about "possible" effects and "some risk" do not constitute a "hard look" absent a justification regarding why more definitive information

could not be provided. . . . Nor is it appropriate to defer consideration of cumulative impacts to a future date.

See Also. *National Parks & Conservation Association v. Babbitt*, 241 F.3d 722, 733 (9th Cir. 2001) ("Before one brings about a potentially significant and irreversible change to the environment, an EIS must be prepared that sufficiently explores the intensity of the environmental effects it acknowledges.").

Throughout the 2003 FEIS/RMP, BLM has for the most part done a good job of stating the obvious by listing the types of impacts that methane development is likely to cause. However, NEPA requires more than a fifth grade analysis of environmental impacts; it requires a hard look under which the agencies must quantify environmental impacts in terms of magnitude, duration, intensity, and geographic scope. While this may seem overwhelming considering the magnitude of development and magnitude of impacts, NEPA requires that BLM do so. BLM's decision to lease virtually all the available methane resources prior to considering the impacts of development of those leases makes this obligation even more important in this case.

These general statements do not "satisfy NEPA's reporting and notice requirements because it fails to provide the public [and decision-makers] with a basis for evaluating the impact" of methane on other resource values. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1999). Without an analysis of the on-the-ground effects that are likely to flow from the various "risks" identified in the EIS, there is no way for either the agency or the public to make a meaningful evaluation of competing alternatives which, after all, is the core purpose of preparing a NEPA document in the first place. BLM must fix this fatal flaw before it can meaningfully evaluate and compare the phased development alternatives with the full-field development alternatives of the 2003 FEIS/RMP.

C. Failure to Take a Hard Look at the Direct, Indirect, and Cumulative Impacts of Methane Development

NEPA requires BLM to consider direct, indirect, and cumulative impacts on the environment. 40 C.F.R. §1502.16. In *City of Carmel-by-the-Sea v. U.S. Dep't of Trans.*, 123 F.3d 1142, 1160 (9th Cir. 1997), the Ninth Circuit held that a NEPA document must "catalogue adequately the relevant past projects in the area" and include a "useful analysis of the cumulative impacts of past, present, and future projects [which] requires a discussion of how [future] projects together with the proposed . . . project will affect the environment." The NEPA document must analyze the actions' combined effects in sufficient detail to be "useful to the decision-maker in deciding whether, or how, to alter the program to lessen cumulative impacts." *Neighbors of Cuddy Mountain v. USFS*, 137 F.3d 1372, 1379 (9th Cir. 1998). "To consider cumulative effects, some quantified or detailed information is required. Without such information, neither the courts nor the public, in reviewing the [BLM's] decisions, can be assured that the BLM provided the hard look that it is required to provide." *Cuddy Mountain*, 137 F.3d at 1376.

When taking this hard look at the impacts of methane development, NEPA requires BLM to disclose the scientific data and analysis supporting its conclusions and assumptions; unsupported assumptions and conclusory statements do not satisfy NEPA. *Idaho Sporting Congress v. Thomas*, 137 F.3d 1146, 1150 (9th Cir. 1998); *See* 40 C.F.R. §1502.24 and §1502.1.

Finally, NEPA requires that BLM consider any new significant new information relevant to environmental concerns and bearing on the proposed action or its impact when it develops the supplement to the 2003 FEIS/RMP. 40 C.F.R. §1502.9(c)(1).

As discussed in Northern Plains' previous comments on the 2003 FEIS/RMP, BLM has failed to adequately consider numerous impacts of methane development on other resource values. The following comments are intended to highlight the most significant remaining issues.

1. BLM Failed to Take a Hard Look at Impacts on Surface Water Quality

a. Scope of Analysis is too Narrow

BLM's analysis of surface water quality impacts in the 2003 FEIS/RMP is limited to an evaluation of the impacts of methane discharges on electroconductivity (EC) and sodium adsorption (SAR) levels in the mainstems of the Tongue, Powder, Little Powder Rivers and Rosebud Creek. The analysis for the Tongue River and Powder River mainstems is also limited to the upper stretches of the rivers. There is no analysis for EC and SAR levels for the mainstem of the Tongue River below Ashland and the Powder River mainstem below Locate. This void leaves almost 50 miles of the mainstems for each river unexamined in the FEIS. To the contrary, the DEIS disclosed the impacts on EC and SAR levels for the entire length of the mainstems of both rivers. The BLM gives no explanation for the change. The impacts of CBM discharges on EC and SAR levels will not magically stop at Ashland and Locate, but will continue downstream. Without analysis of the lengths of the rivers, there is no way for irrigators or BLM to know whether methane discharges will violate EC and SAR standards in the lower sections of the rivers; the FEIS is thereby inadequate. 40 C.F.R. §1502.16. Such violations are likely given the predicted violations in the rivers' upper stretches. Furthermore, analysis of such surface water quality impacts for the entire length of the mainstems would resolve an emerging dispute as to the reasons for the higher EC and SAR levels in the lower stretches of the Tongue River below the T&Y dam. The methane operators contend such degradation is the result of return flows from irrigated agriculture. An equally likely cause is the discharge of numerous tributaries, such as Pumpkin Creek, which historically have had poor water quality.

In the DEIS, BLM disclosed the impacts on EC and SAR levels for the entire lengths of the rivers. BLM asserts three bases for its change of position in the 2003 FEIS/RMP: (1) a lack of adequate baseline data for the lower stretches precluded a proper analysis; (2) there will be no CBM discharges into these lower stretches and any impacts in these lower stretches would be from existing sources (natural, irrigation return flows, and the impacts of the T&Y diversion); and (3) CBM discharges "are likely to improve surface water quality (particularly in regard to SAR) in the Tongue and Powder Rivers

downstream of these stations due to dilution." To the extent the lack of baseline data precluded a meaningful analysis, BLM violated NEPA by not collecting such data. *Half Moon Bay*, 857 F.2d at 510.

BLM's second rationale represents a fundamental misunderstanding of its NEPA obligations. Under NEPA, BLM must consider impacts of CBM discharges on EC and SAR levels when combined with impacts from past and present projects. BLM's own analysis in the DEIS shows SAR and EC levels increase from Ashland and Locate to the mouths of the rivers. DEIS 3-12, 4-48. The FEIS predicts CBM discharges will increase SAR and EC levels at Ashland to 4.9 and 1377 and at Locate to 19.1 and 2259 respectively. These levels will only be higher (not lower) at the mouth of the rivers.

Finally, in its brief, BLM offers an illegal post-hoc justification that methane discharges will improve water quality in these stretches. *Olenhouse v. Community Credit Corp.*, 42 F.3d 1560, 1579-1980 (10th Cir. 1994). BLM also violates NEPA by failing to provide any scientific data or studies to support its conclusory statement. *Idaho Sporting Congress*, 137 F.3d at 1150.

The 2003 FEIS/RMP is inadequate because it does not include any analysis of the cumulative impacts of discharges on EC and SAR levels and changes in the perennial tributaries of the Powder and Tongue Rivers. CBM discharges will impact the surface water quality of these waters, and the BLM violated NEPA by not disclosing those impacts. 40 C.F.R. §1502.16. Ranchers use these streams for irrigation. The Aldersons and Hayes hold water rights to and irrigate with water from Hanging Woman Creek - a tributary of the Tongue, which drains over 470 square miles. Without this analysis, there is no way for irrigators or BLM to know whether CBM discharges under Alternative E will violate EC and SAR standards for these waters. CBM discharges with high EC and SAR levels into these streams could impact irrigation uses and violate water quality standards. BLM violated NEPA by not mentioning potential impacts on these streams, because it entirely failed to consider an important aspect of the problem.

BLM's post-hoc justification, offered for the first time in litigation, that impacts to tributaries were not evaluated because "untreated produced water discharges to perennial tributaries of the Tongue and Powder River are not likely to ever occur because of the water quality standards adopted by the State of Montana for such tributaries (i.e. EC = 500)" is untenable. Northern Plains has provided BLM with volumes of evidence refuting this assumption and showings untreated methane discharges (from impoundment failures, overflows, or creation of saline seeps) into Youngs Creek, Squirrel Creek, and Badger Creek - all tributaries of the Tongue River. *See* Document 1. All the discharges were from "total containment" impoundments that failed. One failure discharged almost 2.5 million gallons of wastewater into Youngs Creek, measurably increasing pollution. Had this occurred in Montana, EC and SAR standards would have been violated. Raymond and Roger Muggli, Northern Plains' members, have documented numerous failures of impoundments in Montana and Wyoming, resulting in similar discharges. *Id.*

b. BLM Relied on Unsupported Assumptions and Conclusions in its Surface Water Quality Analysis that Underestimate Impacts

BLM's surface water quality analysis (SWQA) is based on numerous unsupported assumptions and conclusions that likely underestimate the volume of wastewater that will reach the mainstems of the Tongue and Powder rivers. First, BLM assumed that operators will use certain disposal methods in each watershed, and then made assumptions about how much wastewater from each means of disposal would reach the mainstems of the rivers. Second, BLM assumed that *none* of the wastewater put to a beneficial use (including land application and disposal operations), or discharged into impoundments would reach surface waters. Third, BLM assumed that none or at least minimal volumes of wastewater discharge to ephemeral or intermittent tributaries of the Powder and Tongue Rivers would ever reach the mainstems. These assumptions are the linchpins of BLM's surface water quality analysis yet have no basis in reality. These assumptions are dead wrong.

Using these unsupported assumptions, BLM arbitrarily concludes the discharge of 11,051 gallons per minute (gpm) into 1,741 impoundments and the discharge of 4,912 gpm to numerous beneficial uses (LAD operations) in the Rosebud Creek drainage will have *no* impact on surface water quality. BLM assumes that over 4,900 gpm of wastewater will be injected despite the BLM's own conclusion that injection is not "commercially viable" in the Basin at this time. FEIS 2-11. BLM's reliance on this disposal method defies logic because it assumes that operators will use an unviable disposal option.

BLM provides neither scientific data nor references to support these assumptions, and thus its reliance on them to analyze impacts on surface water was arbitrary and violated NEPA. *Blue Mountains*, 161 F.3d at 1214.

As if BLM's reliance on these unsupported assumptions and conclusions wasn't sufficiently egregious, significant new information has emerged since 2003 that directly contradicts and undermines many of the assumptions and conclusions. This new information includes but is not limited to the following:

- Growing body of evidence from the Wyoming portion of the Basin showing that discharges into intermittent and ephemeral tributaries of the Powder River are in fact transforming these streams into perennial waterbodies. Many months of the year, the flows of these tributaries are comprised entirely of methane wastewater. BLM need only compile enforcement and inspection files from the WDEQ, visit with landowners along these tributaries, and download the data from the United States Geological Survey website. More significantly, these discharges are reaching the mainstem of the Powder River for months at a time and are coming from "total containment" reservoirs. BLM needs to gather, evaluate, and disclose these issues in the supplement and revise its SWQA to reflect reality as it is playing out on the ground in the Basin
- Growing body of evidence from the Wyoming portion of the Basin that land application and disposal activities are resulting in the unpermitted discharges of methane wastewater

into tributaries of the Powder and Tongue River. BLM need only compile the enforcement and inspection files from the WDEQ and visit landowners living downstream of such operations. The preliminary results of the impacts of LAD operations on native soils and vegetation from ongoing studies at Montana State University and the University of Wyoming are also available to BLM. BLM needs to gather, evaluate, and disclose these issues in the supplement and revise its SWQA to reflect reality as it is playing out on the ground in the Basin.

c. New Information and Changes in Circumstances that Need to be Addressed

While Northern Plains has attempted to highlight at least some of this significant new information and changes in circumstances, Northern Plains reminds BLM that it has an independent duty to gather and evaluate new information and changes in circumstances that has emerged since April of 2003 and to update its analysis.

- FEPCO has submitted an application to transfer over 5500 acre-feet of produced water per year out-of-state from its methane operations in Montana. FEPCO has proposed marketing such water and using it for a variety of alleged beneficial uses, including but not limited to industrial uses, irrigation, etc. BLM needs to evaluate the potential impacts of such a proposal in the supplement and evaluate the potential likelihood of other reasonably foreseeable proposals from other operators.
- Northern Plains has completed two studies examining the economic and technical feasibility of numerous wastewater disposal and treatment alternatives and examining the impacts of such alternatives. *See* Document 1, Exhibits J and K.
- Northern Plains Resource Council, Tongue & Yellowstone Irrigation District, Surface Owners of the Wolf Mountains Area, Bear Creek Council, Stillwater Protective Association, Bull Mountain Land Alliance, Rosebud Protective Association, Dawson Resource Council, Carbon County Resource Council, Bones Brothers Ranch, Muggli Brothers, Huggo Muggli Inc., Golder Ranch, Greenleaf Cattle Company, Rocker 6 Cattle Company, FL Ranch, and the Fix Ranch petitioned the Montana Board of Environmental Review in May of 2005. *See* Document 1.

The Petition asks that the Board of Environmental Review (Board) promulgate a rule pursuant to their authority under the Montana Water Quality Act (MWQA) to address one of the primary problems associated with coal bed methane (methane) extraction in Montana: the draining of aquifers and the resulting drying up of wells and springs, along with damages to crops, native plants, and soils.

The Board initiated rulemaking on the petition in June of 2005. The proposed rules would limit the discharge of pollutants into waters of the United States from the methane industry by establishing minimum technology-based control and treatment requirements for the methane industry. The effluent limitations being proposed will prohibit the discharge of wastewater by requiring reinjection into suitable geologic formations unless the operator can demonstrate that site-specific geologic conditions make zero discharge

technically unfeasible. To the extent zero discharge is not technically feasible because of site-specific geologic limitations, the required effluent limitations at the end of the pipe prior to discharge can be met using numerous existing treatment technologies.

The proposed rules would also amend several sections and repeal one section of ARM §17.30.670. The amendment of ARM §17.30.670(6) eliminates the determination that changes in electrical conductivity (EC) and sodium adsorption ratio (SAR) caused by methane discharges are non-significant and designates EC and SAR as harmful parameters. The amendment of ARM §17.30.670(7) requires that the Montana Department of Environmental Quality (MDEQ) use 7Q10 flows in determining compliance with water quality standards and non-degradation thresholds for the methane industry.

These rulemaking proceedings are ongoing. Pursuant to Montana law, the Board has until mid-February 2006 to make a final decision in the rulemaking proceedings. BLM needs to work closely with the MDEQ, a co-lead agency in the 2003 FEIS/RMP process, to ensure any new requirements are addressed in the supplement.

d. BLM Failed to Consider the Impacts of CBM Discharges on Levels of Other Pollutants in Surface Waters.

BLM's SWQA is focused exclusively on the impacts of discharges on EC and SAR levels. BLM's failure to evaluate impacts of CBM discharges on levels of other pollutants in surface waters is arbitrary because the agency entirely failed to consider an important aspect of the problem. BLM argues that EC and SAR standards "will restrict discharges to protect all beneficial uses of water. BLM's reliance on this unsupported conclusion violates NEPA because the 2003 FEIS/RMP contains no reference to any material to support it. *Blue Mountains*, 161 F.3d at 1214. As discussed in § herein, there are numerous other pollutants in methane wastewater that pose acute and chronic toxicity issues to aquatic life that BLM is ignoring.

BLM did not address the potential impacts of transforming ephemeral and intermittent streams into perennial waterbodies, including impacts on surface water quality, impacts on stream morphology, impacts on sedimentation and erosion rates (head cutting), impacts on riparian vegetation including spread of saltcedar and killing of cottonwoods, impacts on native aquatic life including reptiles and amphibians. This transformation represents a fundamental change in the ecology of these prairie ecosystems that will likely have devastating impacts. BLM needs to evaluate impacts of such transformations on farming and ranching operations, and impacts of such discharges such as creating ice jams and resulting overland flows of water with high EC and SAR levels onto adjacent meadows. BLM needs to consider the impacts of such incidents on native soils and vegetation and the impacts of the potential loss of these resources on local ranches.

BLM failed to evaluate water chemistry changes in impoundments caused by evaporation and potential impacts of such changes on surface water quality.

2. BLM Failed to Consider the Impacts of the Land Application and Disposal of Methane Wastewater

In the 2003 FEIS/RMP, BLM ignored the potential wide ranging and long-term impacts caused by the land application and disposal of methane wastewater onto native soils and vegetation. BLM make no effort to attempt to quantify the impacts of such disposal practices on native soils and vegetation, including potential impacts on loss of infiltration, spread of noxious weeds, loss of native vegetation, and encroachment by salt tolerant species, etc.

BLM dismisses impacts of such disposal practices on the water quality of shallow ground water resources and nearby surface waters by assuming, without providing any supporting data or studies, that *none* of the wastewater applied will reach ground water or surface waters because the wastewater will be applied at agronomic rates. In doing so, BLM is ignoring countless studies showing the potential impacts of LAD operations on ground water and surface water resources.

Northern Plains has provided expert testimony and evidence contradicting BLM's assumptions. Northern Plains has provided photographs documenting wastewater being disposed of in excess of agronomic uptake rates. *Id.*

3. BLM Failed to Take a Hard Look at Impacts on Ground Water Resources and Wells and Springs Tapping these Aquifers

BLM's analysis of the impacts of methane development on regional aquifers and the wells and springs tapping them is grossly inadequate. BLM's analysis fails to answer fundamental questions about the level of impacts such development may have on these scarce yet vital resources. To remedy this flaw, BLM need not start from scratch. John Wheaton of Montana Bureau of Mines and Geology completed a 2-dimensional and 3-dimensional model of Hanging Woman Basin on behalf of BLM. With some exceptions, the model evaluated the impacts of development in one small part of the Basin-Hanging Woman Basin. BLM needs to fund a project that would allow the model to be expanded to evaluate the cumulative impacts of methane development across the entire Basin. The analysis needs to take into account regional geology, including significant faults, and take into account the drawdowns caused by Wyoming methane development.

Without a Basin-wide groundwater model, the 2003 FEIS/RMP gives a false impression of the impacts of methane development on such resources and dramatically underestimates the potential impacts.

Most important, BLM needs to be upfront and honest and answer some fundamental questions regarding the potential impacts of methane development on coal seam aquifers and other potentially connected aquifers, and wells and springs tapping those aquifers. Those questions include, but are not limited to the following:

1. How many wells and springs in the Basin tap coal seam aquifers? Document the specific coal seams tapped by these wells and springs. For example, what percentage of the existing wells and springs tap the Dietz coal seam, Carney coal seam, or Monarch coal seam, etc.? What is the flow rate, depth to ground water, water quality, and baseline conditions of these wells and springs? What uses are made of such wells and springs at the present time?
2. What is the magnitude and geographic extent of drawdowns of coal seams going to be across the *entire* Basin over time as development progresses on existing leased acreage? These impacts should be shown in time-lapse maps that are easily understood by people without a scientific or technical background.
3. How many of the wells and springs tapping the coal seam aquifers are likely to be impacted by drawdowns or methane migration?
4. What is the estimated recharge rate for the coal seam aquifers of the Basin? What factors influence recharge of these coal seam aquifers?
5. Quantify how long it will take the coal seam aquifers to completely recover and show such recovery in time-lapse maps. The 2003 FEIS/RMP said that predicted recovery of the coal seam aquifers could be significantly longer if development occurs on a regional level, which is what is proposed. The BLM needs to honestly answer how long it will take for the coal seam aquifers to completely recover.
6. Are these coal seam aquifers confined or is there hydrologic connectivity between the coal seam aquifers and other overlying aquifers? If the coal seam aquifers are confined by shale and other geologic strata, how can recharge from infiltration impoundments possibly occur? If the coal seam aquifers are not confined and are hydrologically connected to overlying aquifers, how many wells tap those overlying aquifers? How many of these wells are likely to be impacted by drawdown or methane migration?
7. Quantify the impacts of the loss of springs and wells tapping these aquifers on the individual ranches in terms of increased pumping and treatment costs. Quantify the impacts of the loss of these springs and wells on the region's farming and ranching economy?
8. Are drawdowns from methane development likely to impact surface water resources such as Rosebud Creek and the Tongue River Reservoir? If so, BLM needs to quantify those potential impacts and discuss the indirect impacts such as interference with the water rights of downstream users, implications for the water rights of the Northern Cheyenne and Crow Reservation and implications for the Northern Cheyenne Compact.
9. BLM needs to consider alternative means (in the form of full blown alternatives) of addressing the impacts of drawdowns on wells and springs, including imposing NSO stipulations in areas where wells and springs are concentrated, and imposing stipulations prohibiting the development of coal seam aquifers with large numbers of wells and springs tapping them. For example, if 85% of the wells and springs tap the shallow Dietz coal seams, BLM should consider an alternative imposing a stipulation on existing leases prohibiting the development of such coal seam. Imposing after the fact mitigation is simply inadequate given the potential severity and longevity of the impacts on spring and wells.
10. BLM needs to gather and analyze the water well mitigation agreements being "offered" in the Basin. BLM needs review and evaluate the requirements of Montana law regarding mitigation of the loss of such springs and wells. For example, BLM needs to

- discuss what mitigation if any, is available for springs for which there are no filed water rights. BLM needs to discuss the ramifications of the fact that Montana law only requires that companies "offer" water well mitigation agreements to landowners. What are the ramifications and protections available to a landowner who will not sign an offered water well mitigation agreement because, in their opinion, it is not sufficiently protective?
11. BLM needs to quantify the impacts that existing development has had on water wells and springs in the Montana and Wyoming portions of the Basin already. The story of the Laundry family in Wyoming is discussed nowhere in the 2003 FEIS/RMP. The Laundry's story is not an isolated incident. BLM needs to disclose how many wells and spring have been adversely impacted by drawdowns or methane migration in Wyoming and Montana. BLM needs to be honest and disclose the ramifications in the event a water well mitigation agreement cannot be reached and a well goes dry. BLM needs to disclose the fact that the landowner's only recourse will be litigation against possibly multiple companies operating in the area. BLM needs to disclose the impacts if landowners cannot afford such litigation. Is it possible that some Montana landowners will have to drive 40 miles to do their laundry, as did Beverly and Roland Landrey after their artesian spring went dry? Is it possible that some Montana landowners will have to drive to their neighbors to get water for domestic and livestock purposes for months at a time waiting for their well to be replaced? The BLM needs to quantify these impacts on individual ranches and the farming and ranching community of the Basin as a whole.
 12. The latest data from the Montana BOGC shows that 89,995,486 barrels of water have been removed from the CX field since 1999. This is 11,600 acre feet of water. This would be enough water for 682,352 cattle. What portion of this water has been wasted? What portion has been used for bona fide beneficial uses under a water right conveyed by the state of Montana? BLM needs to explain how it is legal under Montana law to allow a methane operator to adversely impact and take a "vested senior water right" of the surface owner. A phased development approach is the only way to assure that development proceeds in an orderly fashion.

Since the BLM signed the ROD in 2003, significant new information has emerged concerning the potential impacts of methane development on aquifers, wells, and springs. For example, the Custer National Forest, working with the Montana Bureau of Mines, has completed a detailed inventory of wells and springs. FEPCO has also submitted several annual ground water monitoring reports for its operations in Montana. The Montana Bureau of Mines and Geology has also completed some work on its regional groundwater monitoring system and released several important reports. BLM needs to gather and incorporate this new information into its revised environmental analysis.

BLM needs to discuss impacts of loss of springs tapping coal seam aquifers. Many of these springs are important source of water for intermittent and ephemeral streams and pools in the Basin. These intermittent and ephemeral streams support riparian vegetation which is important if not critical habitat for numerous wildlife species, including amphibians, migratory birds, and a diversity of aquatic life especially adapted to these environments. As with other resource values, the first step BLM needs to take is to inventory these springs and seeps and areas and quantify their value to wildlife and

aquatic life. BLM needs to evaluate the potential loss of such systems on wildlife habitat and populations.

4. BLM Failed to Take a Hard Look at Air Quality Impacts

Because of the lack of a complete emissions inventory and use of the wrong baseline conditions, BLM's air quality analysis seriously underestimates the cumulative impacts of methane development on air quality in the Basin; including the Northern Cheyenne Class I Airshed established in 1977.

Even despite these deficiencies, the 2003 FEIS/RMP found that methane development could result in violations of the Reservation's Class I increments for PM₁₀ and NO_x and result in violations of particulate air quality standards in some areas of the Basin.

NEPA regulations require that an EIS discuss the "possible conflicts between a proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned." 40 C.F.R. § 1502.16(c). In addition, an EIS must discuss "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment." *Id.* § 1508.27(b)(10).

BLM needs to complete a new cumulative air quality impact analysis for the supplement. The new analysis should be based on the requirements of the Clean Air Act. BLM needs to work with EPA and the MDEQ to prepare a regulatory Prevention of Significant Deterioration (PSD) increment consumption analysis. BLM ignored repeated requests by EPA and the Tribe to include a PSD increment consumption analysis in the 2003 FEIS/RMP. BLM has acknowledged that the discussion of air quality in the FEIS does not represent such an analysis. *FEIS at 3-3, 4-19.* BLM's obligation under NEPA to assess compliance with federal air quality standards and obligations under FLPMA to ensure its actions comply with PSD increments demand that the new air quality analysis include a PSD increment consumption analysis.

In completing this analysis, BLM needs to use the legally correct baseline conditions and dates as specified in the CAA. M DEQ conducted such an analysis in its November 2002 EIS for the Roundup Power Project.

Most importantly, the emissions inventory should include *all* sources permitted after the baseline dates, including the Colstrip #3 and #4 power plants. *See* 42 U.S.C. § 7479(4). In Montana, the baseline dates are 1978 for SO₂ and PM₁₀ and 1990 for NO₂. The 2003 FEIS/RMP included only those sources permitted after 1994. The BLM's emissions inventory did not include significant air pollutant sources permitted and constructed in the Basin after the establishment of the baseline date, including Colstrip Units #3 and #4 (permitted in 1979); these facilities were treated as part of the "background" and not counted in the BLM's assessment of cumulative increment consumption. This was a significant error as an EIS prepared by the Montana Department of Environmental Quality in November 2002 for the Roundup Power Project found that existing sources

(especially Colstrip Units #3 and #4) had already consumed *all* of the Class I increments for SO₂, and substantial portions of the increments for NO₂ and PM₁₀, *even without the added pollution from CBM development.* This approach seriously underestimated potential violations for PSD increments.

The emissions inventory and increment consumption analysis should be updated to reflect the emissions inventory and modeling work undertaken cooperatively by the Environmental Protection Agency (EPA), the Montana Department of Environmental Quality (MDEQ), and the Tribe under an MOA signed in 2004. In addition to updating the emissions inventory and modeling, the reasonably foreseeable development scenario should be expanded to include the proposed Otter Creek coal mines and related mine-mouth coal-fired power plants, the Tongue River Railroad, a potential coal liquifaction facility proposed for the Ashland area, and the recently released draft Custer National Forest reasonably foreseeable development scenario for methane development in the Ashland Ranger District.

Despite predicting significant increases in particulate air pollution and exceedences of human-health based standards for particulates, BLM failed to evaluate the direct and indirect impacts of increased particulate pollution on people living near development and workers. The 2003 FEIS/RMP does not discuss the impacts of dust and particulate pollution on livestock and wildlife. The 2003 FEIS/RMP predicts that formaldehyde and volatile organic compounds emissions from compressors will exceed thresholds established to protect public health but does not discuss impacts of such exceedences on people living near compressors or working at the sites. These are indirect impacts of methane development that BLM needs to evaluate.

Finally, BLM needs to develop mitigation measures to eliminate or minimize the potential violations of PSD increments and air quality standards in the Basin instead of impermissibly shirking its responsibilities to comply with the CAA, FLPMA, and NEPA to the Montana DEQ in subsequent permitting decisions, which are unlikely to ever address these cumulative air quality issues again.

5. The BLM Failed to Take a Hard Look at Impacts on Wildlife and Aquatic Life.

As you are aware, a coalition of organizations and individuals comprised of the American Lands Alliance, Biodiversity Conservation Alliance, and George Wuerthner (ALA) prevailed at the U.S. District Court for the District of Montana via an order and judgment issued on June 9, 2005, as amended by order of June 13, 2005, on ALA's claim that BLM violated the National Environmental Policy Act by failing to consider a "phased development" alternative. The Western Environmental Law Center (WELC), counsel for ALA, is submitting scoping comments for the supplement that focus on impacts on wildlife and wildlife habitat. Their comments do an excellent job of summarizing the remaining deficiencies of the 2003 FEIS/RMP with respect to the wildlife resource.

In short, BLM failed to provide baseline data for a single species of wildlife or aquatic life in the 2003 FEIS/RMP. BLM does not provide data or information on current