

APPENDIX I

COMMENT LETTERS ON THE
DRAFT EIS AND RESPONSES

FOUNDATION COAL WEST, INC.

Belle Ayr & Eagle Butte Mines
P.O. Box 3039
Gillette, WY 82717-3039

December, 23, 2008

Theresa Johnson
Bureau of Land Management
Casper District Office
2987 Prospector Drive
Casper, WY 82604

RE: Draft South Gillette Area EIS Comments

Dear Ms. Johnson:

Please accept the following comments on the Draft EIS. The comments are generally directed toward sections of the EIS that are specific to the Belle Ayr Mine.

Page ES-34, paragraph 5: There is a statement that adverse noise impacts would occur if mining occurs within 2500 feet of dwellings. This statement appears to be in conflict with the statements made on page 3-218. Table 3-17 points out potential impacts. Are potential impacts considered adverse? The last sentence on page 3-218 states "Because of the remoteness of the LBA tracts and because mining is already ongoing in the area noise would have few off-site impacts". The statements on these two separate pages don't seem to compliment each other.



A

Page 1.5, Section 1.1.1 Belle Ayr North Tract: The discussion of minable and recoverable tons contained within the as applied for tract if Bishop Road is not moved states 168.2 million tons and 158.1 million tons respectively. These estimates appear to be in conflict with Table ES-2 and the discussion of tons on page 2-10. Table ES-2 and page 2-10 list the minable and recoverable tons as 164.7 million tons and 154.8 million tons respectively.



B

Page 2-12, paragraph 2: The discussion states that all crushing operations and conveying, transferring and storage facilities at Belle Ayr Mine are equipped with atomizer/foggers. This is incorrect. Belle Ayr utilizes baghouses, atomizer/foggers, and PEC's as control equipment.



C

Page 3-2, paragraph 4: The number of acres under lease as it appears was confusing until the footnote on Table 3-1 was read. It might be helpful to state that the lease acres are comprised of federal, state and private coal on page 3-2 paragraph 4. Table ES-2 states 4,945.5 acres. Please check the lease acres as Belle Ayr's records show 4,845.5 acres. Belle Ayr records may be incorrect but please confirm. Page 2-13, paragraph 3 again states the lease acres at approximately 4,946?



D

Page 3-208, Section 3.12.1.1 Belle Ayr North Tract: The write-up as presented appears to not be using the latest survey information. It states 54 acres of the general analysis area as



E

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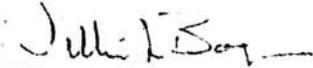
not being surveyed at a Class III level. It further states that areas previously surveyed at a Class III level prior to 1980 may be substandard in terms of current methodology. Belle Ayr has surveyed the project area to a Class III level and has resurveyed specific areas identified by the Buffalo Field Office to be substandard. The DEIS was published October 2008 and the latest survey information was finalized November 2008. Belle Ayr recommends the Final EIS be updated with the information that was submitted following consultation with the Buffalo Field Office Archeologist. Additionally, please note that the text stated that the Sawyer Expedition Trail (48CA1570) is unevaluated for the NRHP. This may be the case but survey information suggests that the site might not be located in the project area.



E

If you have any questions regarding the comments please feel free to contact me at 307-687-3410.

Sincerely,


William L. Boger
Environmental Manager

Cc: File
John Berry, WWC

Response to Comment Letter 1: Foundation Coal West

Comment Response 1A: The statement on page ES-34 does state that an adverse noise impact would occur to dwellings and businesses located within 2,500 feet of mining activities. As depicted on Table 3-17, an adverse impact would occur to the buildings located near West Coal Creek and Maysdorf II as the LBA tracts are above the 55 dBA level designated by the EPA. A statement has been added to the “Noise” section of the Executive Summary for clarification. Also, the text in Section 3.14.1 states that *“At distances of approximately 2,500 ft (0.47 mile) or greater, the intensity of this blast would be reduced to 55 dBA (no adverse impact level).”*

Comment Response 1B: A revision has been made to Section 1.1.1 to correct the error in the coal tonnages. It now states, *“Excluding the federal coal reserves within the Bishop Road right-of-way and buffer zone and any isolated coal, FCW estimates that the Belle Ayr North LBA Tract contains approximately 164.7 million tons of mineable coal reserves and that approximately 154.8 million tons would be recovered from the tract.”*

Comment Response 1C: A revision has been made to Section 2.1.1 in the paragraph where it talks about coal being produced from the Wyodak-Anderson coal seam in the final EIS to include baghouses, atomizer/foggers, and PECs (pass enclosure control systems) as control equipment.

Comment Response 1D: A revision has been made in Chapter 3 in the discussions for Belle Ayr, Coal Creek, Caballo, and Cordero Rojo to clarify that the lease acreage includes federal, state, and private coal. The acreage figure (4,945.5) is correct according to our records.

Comment Response 1E: Section 3.12.1.1 EIS has been updated with the November 2008 cultural resources survey information. Also, the reference to the Sawyer Expedition Trail was removed. The removal of the Sawyer Expedition Trail resulted in revisions to the number of cultural resources sites.

under the Clean Air Act. With literally the fate of our planet at stake, the DEIS must be revised to properly evaluate the global warming impacts of all reasonably foreseeable consequences of leasing the LBA Tracts.

I. The DEIS Fails to Adequately Describe Global Warming as Part of the Environmental Setting.

The warming of our climate system is unequivocal.² There have been significant increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level.³ Eleven of the past twelve years rank among the warmest in the instrumental record of global surface temperature, and it is likely that average temperatures in the Northern Hemisphere have been the highest in at least the past 1,300 years.⁴ On August 17, 2007, the National Snow and Ice Data Center (“NSIDC”) reported that Arctic ice had diminished to its all-time lowest recorded level.⁵ Climate scientists, including those from the Nobel Prize-winning Intergovernmental Panel on Climate Change (“IPCC”) and the U.S. government, have become increasingly certain about the causes of anthropogenic climate change and what those causes portend if left unchecked. Noted climatologist Dr. James Hansen recently stated that “if we burn all the coal, there is a good chance that we will initiate the runaway greenhouse effect”—*i.e.*, a relatively rapid increase of CO₂ concentrations in the atmosphere that can stimulate the potentially unstoppable release of massive amounts of stored carbon and methane into the atmosphere, eventually boiling the oceans and destroying all life on earth.⁶ The inescapable fact is that global warming and climate change now presents a dire situation for life on Earth, and as a major emitter of GHGs, the United States must act quickly and deliberately, using any and all the tools at its disposal to eliminate or reduce the dangers to human health and the environment. NEPA requires project analyses to be of high quality, and requires agencies to insure “the professional integrity, including scientific integrity” of those analyses.⁷ Yet, the DEIS vastly



² California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 73 Fed. Reg. 12156, 12163-69 (Mar. 6, 2008).

³ *Id.* at 12167.

⁴ IPCC, 2007: Summary for Policymakers. In: Climate Change 2007: Mitigation. Contribution of Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [B. Metz, O.R. Davidson, P.R. Bosch, R. Dave, L.A. Meyer (eds)], Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, at 2.

⁵ National Snow and Ice Data Center (NSIDC). 2007a. Arctic Sea Ice News Fall 2007. www.nsidc.org/news/press/2007_seaiceminimum/20070810_index.html (last visited Dec. 24, 2008). At 1.63 million square miles, the minimum sea-ice extent on September 16, 2007 was about one million square miles (equal to the area of Alaska and Texas combined) below the average minimum sea ice extent between 1979 and 2000 and 50 percent lower than conditions in the 1950s to the 1970s. Stroeve, J. et al. 2008. Arctic sea ice extent plummets in 2007. *Eos* 89:13-20. This minimum was lower than the sea-ice extent most climate models predicted would be reached after 2050. *Id.*

⁶ Hansen, J. Climate Threat to the Planet: Implications for Energy Policy and Intergenerational Justice. Bjerknes Lecture (slides), American Geophysical Union (Dec. 17, 2008).

⁷ 40 C.F.R. § 1502.24.

underestimates the gravity of the threat of climate change to life on Earth, and the contribution to the problem that leasing the LBA Tracts would make.⁸

Not surprisingly, as a consequence of the disconnect between the true nature of the climate change problem and the discussion about climate change in the DEIS, the DEIS omits altogether or glosses over many important and sobering facts about climate change.

A. The DEIS Fails to Account for All Greenhouse Gases.

The DEIS states that GHGs “currently” include carbon dioxide, methane, water vapor, ozone, and nitrous oxide.⁹ No support is provided in the DEIS for this list, which omits widely-recognized GHGs such as chlorofluorocarbons, sulfur hexafluoride, hydrofluorocarbons, perfluorocarbons, and nitrogen trifluoride.¹⁰ As a result of the omission of all GHGs from the list, the DEIS fails to account for all existing GHG emissions and all GHG emissions that will occur as a result of the proposed action. This renders the DEIS incomplete.¹¹

B. The DEIS Vastly Underestimates the Existing Effects and Threat of Global Warming.

In qualifying statements about global warming, the DEIS fails to adequately reflect the dire situation posed by this problem.

For example, the DEIS fails to account for the fact that at 383 ppm of CO₂ currently, we are already in a danger zone that could potentially disastrous consequences. Hansen *et al.* (2008) use “paleoclimate data to show that long-term climate has high sensitivity to climate forcings and that the present global mean CO₂, 385 ppm, is already in the dangerous zone.”¹² Their findings are briefly summarized as follows:

If humanity wishes to preserve a planet similar to that on which civilization developed and to which life on Earth is adapted, paleoclimate evidence and ongoing climate change suggest that CO₂ will need to be reduced from its current 385 ppm to at most 350 ppm, but likely less than that. The largest uncertainty in the target arises from possible changes of non-CO₂ forcings. An initial 350 ppm CO₂ target may be achievable by phasing out coal use except where CO₂ is captured and adopting agricultural and forestry practices that sequester carbon. If the present overshoot of this target CO₂ is not brief, there is a possibility of seeding irreversible catastrophic effects.¹³

⁸ See, e.g., DEIS at 3-253 (stating that GHGs “may” play a role in climate change); *id.* at 4-104 (ruminating that solar variability—i.e., sunspots—may be a cause of climate change).

⁹ DEIS at 3-253.

¹⁰ Prather, M.J. and J. Hsu. 2008. NF₃, the greenhouse gas missing from Kyoto. *Geophys. Res. Lett.*, 35: L12810.

¹¹ See, e.g., DEIS at 3-254 (estimating combined CO₂e emissions for the Belle Ayr, Coal Creek, Caballo, and Cordero Rojo Mines).

¹² Hansen, J., *et al.* 2008. Target Atmospheric CO₂: Where Should Humanity Aim? *The Open Atmospheric Science Journal*, 2008, 2, 217-231.

¹³ *Id.* at 217.

Due to the slow response time for the full effects of anthropogenic greenhouse gas emissions to be manifested in the climate system, “[w]arming ‘in the pipeline’, mostly attributable to slow feedbacks, is now about 2°C (Fig.2). No additional forcing is required to raise global temperature to at least the level of the Pliocene, 2-3 million years ago, a degree of warming that would surely yield ‘dangerous’ climate impacts.”¹⁴

Hansen *et al.* (2008) define several concepts: “(1) the *tipping level*, the global climate forcing that, if long maintained, gives rise to a specific consequence, and (2) the *point of no return*, a climate state beyond which the consequence is inevitable, even if climate forcings are reduced. A point of no return can be avoided, even if the tipping level is temporarily exceeded. Ocean and ice sheet inertia permit overshoot, provided the climate forcing is returned below the tipping level before initiating irreversible dynamic change.”¹⁵

However, reducing atmospheric CO₂ concentrations to 350 ppm would not be enough to stabilize Arctic sea ice and save imperiled species such as the polar bear and the entire Arctic web of life:

Stabilization of Arctic sea ice cover requires, to first approximation, restoration of planetary energy balance. Climate models driven by known forcings yield a present planetary energy imbalance of +0.5-1 W/m². Observed heat increase in the upper 700 m of the ocean confirms the planetary energy imbalance, but observations of the entire ocean are needed for quantification. CO₂ amount must be reduced to 325-355 ppm to increase outgoing flux 0.5-1 W/m², if other forcings are unchanged. A further imbalance reduction, and thus CO₂ ~300-325 ppm, may be needed to restore sea ice to its area of 25 years ago.¹⁶

Atmospheric CO₂ concentrations must be reduced quickly: “Indeed, if the world continues on a business-as-usual path for even another decade without initiating phaseout of unconstrained coal use, prospects for avoiding a dangerously large, extended overshoot of the 350 ppm level will be dim.”¹⁷ Yet, as Hansen *et al.* (2008) note, “[r]ealization that we must reduce the current CO₂ amount has a bright side: effects that had begun to seem inevitable, including impacts of ocean acidification, loss of fresh water supplies, and shifting of climatic zones, may be averted by the necessity of finding an energy course beyond fossil fuels sooner than would otherwise have occurred.”¹⁸

Ultimately, these authors conclude

[w]ith simultaneous policies to reduce non-CO₂ greenhouse gases, it appears still feasible to avert catastrophic climate change. Present policies, with continued construction of coal-fired power plants without CO₂ capture, suggest that decision-makers do not appreciate the gravity of the situation. We must begin to move now toward the era beyond fossil fuels. Continued growth of greenhouse gas

¹⁴ *Id.* at 225 (internal citation omitted).

¹⁵ *Id.*

¹⁶ *Id.* at 226 (internal citations omitted).

¹⁷ *Id.* at 227.

¹⁸ *Id.* at 228.

emissions, for just another decade, practically eliminates the possibility of near-term return of atmospheric composition beneath the tipping level for catastrophic effects. The most difficult task, phase-out over the next 20-25 years of coal use that does not capture CO₂, is Herculean, yet feasible when compared with the efforts that went into World War II. The stakes, for all life on the planet, surpass those of any previous crisis. The greatest danger is continued ignorance and denial, which could make tragic consequences unavoidable.¹⁹

Unfortunately, the DEIS vastly underestimates—and indeed, even ignores altogether—the gravity of this situation, the stakes for life on Earth, and the need to phase-out coal use immediately in order to avoid catastrophic climate change.

The DEIS similarly avoids disclosing information about the effects to the quality of the human environment that global warming is already causing. There is now a massive body of peer-reviewed literature on the science and impacts of global warming, demonstrating unequivocal, current harm to both public health and welfare, and the certainty of far greater harm to come if GHG emissions are not rapidly and deeply reduced.²⁰

Thus, the EPA has explicitly acknowledged that climate change resulting from elevated GHG levels would result in human health risks such as heat-related mortality, exacerbated air quality, aggravated risks for respiratory infection, aggravation of asthma, and potential premature death for people in susceptible groups,²¹ and thus has in effect already made an endangerment finding for GHGs. The World Health Organization has estimated that as of the year 2000, 154,000 deaths and the loss of 5.5 million daily adjusted life years per year worldwide were already attributable to global warming.²² These figures have clearly mounted over the past eight years and will continue to grow until effective emissions reductions are implemented. In addition, the EPA has published or cited favorably to multiple documents evaluating the harms associated with the climate crisis and by highlighting many of these impacts.²³ The EPA's recent decision document denying California's application for a waiver under § 209(b) of the CAA, while legally fatally flawed, explicitly used the word "harm" when discussing continued GHG emissions.²⁴ Moreover, the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR4), a conservative synthesis of the most reliable scientific knowledge available about climate change, leaves absolutely no question that the emissions of GHGs and the resulting changes to Earth's climate are endangering the public health and welfare.²⁵

¹⁹ *Id.* at 229.

²⁰ Much of this literature—none of which is cited in the DEIS—was cited by the Supreme Court in *Massachusetts v. EPA*, and by the Environmental Protection Agency in a recent Advanced Notice of Proposed Rulemaking under the Clean Air Act and supporting documents. See *Massachusetts v. EPA*, 127 S.Ct. 1438, 1462 (2007); Advance Notice of Proposed Rulemaking, Regulating Greenhouse Gas Emissions Under the Clean Air Act, 73 Fed. Reg. 44354 (July 30, 2008).

²¹ 73 Fed. Reg. at 44426-27.

²² World Health Organization, 2002. The World Health Report 2002. Available at www.who.int/whr/2002/en/index.html.

²³ 73 Fed. Reg. 44426-27.

²⁴ 73 Fed. Reg. 12156-01 (Mar. 6, 2008).

²⁵ IPCC 2007.

Also not mentioned in the DEIS is the fact that the climate crisis the most significant and pervasive threat to biodiversity worldwide, affecting both terrestrial and marine species from the tropics to the poles. The IPCC AR4 recognizes this, finding that the resilience of several ecosystems is likely to be overcome this century by a dangerous brew of climate change, associated disturbances (such as flooding, drought, wildfire, insects and ocean acidification) and other environmental drivers such as pollution and over-exploitation of resources.²⁶ Along with increases in global average temperatures beyond 1.5-2.5° C and accompanying increased levels of atmospheric CO₂ concentrations will come major changes in ecosystem structure and function, species' ecological interactions, and species' geographical ranges.²⁷

Other scientific reports have reached the same conclusion as the IPCC that anthropogenic warming has had a recognizable influence on biological systems. In a study published in *Nature* in 2003, the authors reported a "globally coherent fingerprint of climate change impacts across natural systems."²⁸ In documenting this "fingerprint" of global warming on ecosystems, scientists have predicted three categories of measurable impacts from recent warming: (1) earlier timing of spring events and later autumn events (*i.e.*, changes in "phenology"), (2) extension of species' range poleward or upward in elevation, and (3) a decline in species adapted to cold temperatures and an increase in species adapted to warm temperatures.²⁹ And leading herpetologists believe that global warming has already resulted in the extinction of dozens of harlequin frog species.³⁰

Moreover, the DEIS omits disclosure or consideration of information about the effects of climate change to the western United States, where the proposed mines are located. The Scientific Assessment Report made the following factual findings regarding the social and environmental impacts resulting from increased GHG emissions, such as:

- "[A] severe drought has affected the southwestern United States from 1999 through 2007";³¹
- "Streamflow has decreased by about 2% per decade in the central Rocky Mountain region over the past century";³²

²⁶ Bernstein *et al.* 2007. Summary for Policymakers. In: *Synthesis Report in Climate Change 2007: A Report of the Intergovernmental Panel on Climate Change*. Available at <http://www.ipcc.ch>.

²⁷ *Id.*

²⁸ Parmesan, C. & G. Yohe. 2003. A globally coherent fingerprint of climate change impacts across natural systems. *Nature* 421: 37-42.

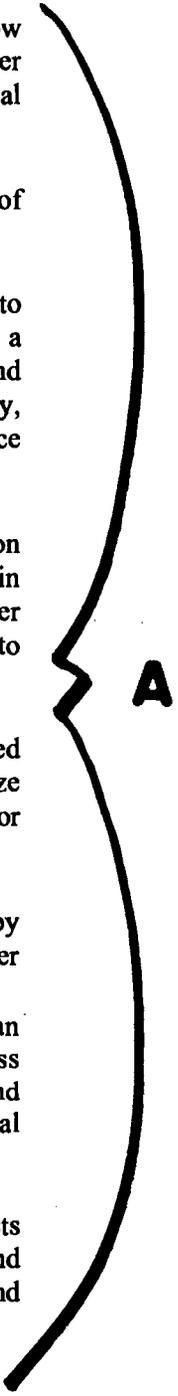
²⁹ Parmesan, C. & G. Hector. 2004. Observed Impacts of Global Climate Change in the U.S. Prepared for the Pew Center on Global Climate Change.

³⁰ Pounds, J.A., M.R. Bustamante, L.A. Coloma, J.A. Consuegra, M.P. L. Fogden, P.N. Foster, E. La Marca, K.L. Masters, A. Merino-Viteri, R. Puschendorf, S.R. Ron, G.A. Sánchez-Azofeifa, C.J. Still, B.E. Young. 2006. Widespread amphibian extinctions from epidemic disease driven by global warming. *Nature* 439: 161-167.

³¹ Scientific Assessment of the Effects of Global Change on the United States: A Report of the Committee on Environment and Natural Resources National Science and Technology Council (May 2008) at 5.

³² *Id.*

- “The annual peak of streamflow in snowmelt-dominated western mountains is now generally occurring at least a week earlier than in the middle of the 20th century. Winter stream flow is increasing in basins with seasonal snow cover. The fraction of annual precipitation falling as rain (rather than snow) increased in the last half century”;³³
- “Most climate models project an increase in winter precipitation in the northern tier of states and a decrease in portions of the Southwest during the 21st century”;³⁴
- “[I]t is *very likely* that the human-induced increase in greenhouse gases has contributed to the increase in sea surface temperatures in the hurricane formation regions. There is a strong statistical connection between tropical Atlantic sea surface temperatures and Atlantic hurricane activity as measured by an index that accounts for storm intensity, frequency, and duration on decadal timescales over the past 50 years. This evidence suggests a substantial human contribution to recent hurricane activity”;³⁵
- “The snow-covered area of North America increased in the November to January season from 1915 to 2004 due to increases in precipitation. However, spring snow cover in mountainous regions of the western United States generally decreased during the latter half of the 20th century. The IPCC determined that this latter trend is *very likely* due to long-term warming...”;³⁶
- “In the last three decades, the wildfire season in the western United States has lengthened and burn durations have increased. Climate change has also *very likely* increased the size and number of insect outbreaks and tree mortality that help to fuel wildfires in the interior West, the Southwest, and Alaska. These trends are *very likely* to continue”;³⁷
- “Projections suggest that efforts to offset the declines in available surface water by increasing withdrawal of groundwater will be hampered by decreases in groundwater recharge in some water-stressed regions, such as the southwestern United States”;³⁸
- “Less reliable supplies of water are expected to create challenges for managing urban water systems as well as for industries that depend on large volumes of water. Across North America, vulnerability to extended drought is increasing as population growth and economic development create more demands from agricultural, municipal, and industrial uses, resulting in frequent over-allocation of water resources”;³⁹
- “Wildfires pose significant direct health threats. They can also have substantial effects through- increased eye and respiratory illnesses due to fire-related air pollution and mental health impacts from evacuations, lost property, and damage to resources” and



³³ *Id.*

³⁴ *Id.*

³⁵ *Id.* at 3.

³⁶ *Id.* at 6.

³⁷ *Id.* at 10.

³⁸ *Id.* at 12.

³⁹ *Id.* at 12.

“associated decrements to air quality and pulmonary effects, are likely to increase in frequency, severity, distribution, and duration in the Southeast, the Intermountain West and the West”;⁴⁰

- “Another example of the ecological consequences of climate change involving insects and affecting adaptability is the devastation of millions of acres of western U.S. and Canadian pines by bark beetles during the warmth and drought of 2000 to 2004. Recent modeling and observations revealed that beetles invading the northernmost lodgepole pine trees are now only a few miles from previously pristine jack pine populations (Logan and Powell, 2007). This may create a direct pathway of invasion to valued pine forests in the eastern United States and Canada”;⁴¹
- “As the climate warms, stream temperatures are *likely* to increase, with effects on aquatic ecosystems. There is some evidence that temperatures have increased in some western U.S. streams, although a comprehensive analysis has yet to be conducted. Temperature changes will be most evident during low flow periods, when they are of greatest concern”;⁴²
- “The forested area burned in the western United States from 1987 to 2003 is 6.7 times the area burned from 1970 to 1986 (Westerling et al., 2006)”;⁴³
- “In regions with winter snow, warming has shifted the magnitude and timing of hydrologic events (Mote et al., 2005; Regonda et al., 2005; Stewart et al., 2005). The fraction of annual precipitation falling as rain (rather than snow) increased at 74% of the weather stations studied in the western mountains of the United States from 1949 to 2004 (Knowles et al., 2006)”;⁴⁴
- “Streamflow peaks in the snowmelt-dominated western mountains of the United States occurred one to four weeks earlier in 2002 than in 1948 (Stewart et al., 2005)”;⁴⁵
- “The most recent (IPCC Fourth Assessment Report) climate model simulations project increased runoff over the eastern United States, gradually transitioning to little change in the Missouri and lower Mississippi, to substantial decreases in annual runoff in the interior of the West (Colorado and Great Basin). The projected drying in the interior of the West is quite consistent among models. These changes are, very roughly, consistent with observed trends in the second half of the 20th century, which show increased streamflow over most of the United States, but sporadic decreases in the West”;⁴⁶

⁴⁰ *Id.* at 14-15.

⁴¹ *Id.* at 39-40.

⁴² *Id.* at 89.

⁴³ *Id.* at 113.

⁴⁴ *Id.* at 147.

⁴⁵ *Id.*

⁴⁶ *Id.* at 148.

- The area that is expected to face the most serious water constraints is the arid southwestern United States;⁴⁷ and
- Stream temperatures are *likely* to increase as the climate warms and are *very likely* to have effects on aquatic ecosystems and water quality. Changes in temperature will be most evident during low flow periods, when they are of greatest concern.⁴⁸

Given the tremendous significance and far-reaching implications of the analysis and conclusions in the Scientific Assessment Report, and the direct relevance of this information in this instance, it is patently arbitrary and capricious for BLM to ignore the federal government's own Scientific Assessment Report in the DEIS. The information presented in the Scientific Assessment Report specifically addresses the nature, extent, and causation of impacts caused by man-made GHG emissions (especially CO₂). BLM may not make a decision on leasing the LBA Tracts that fails to evaluate the significance of each of the concerns raised in the Scientific Assessment Report and to explore all available opportunities to ameliorate any contribution of the proposed project to adverse health, welfare, or environmental effects.⁴⁹

By failing to disclose the true nature of the problem of climate change, the DEIS is fatally flawed, as BLM is required to "describe the environment of the areas to be affected or created by the alternatives under consideration."⁵⁰ The establishment of the baseline conditions of the affected environment is a fundamental, practical requirement of the NEPA process.⁵¹ To comply with NEPA, the DEIS must be revised to include this information and recirculated for public comment.

II. The DEIS Fails to Take a Hard Look at the Environmental Consequences of Leasing the LBA Tracts.

Agencies must take a "hard look" at their actions under NEPA.⁵² NEPA requires that federal agencies consider "any adverse environmental effects" of their "major ... actions."⁵³ The analysis of GHG emissions in the DEIS—and the contribution of all reasonably foreseeable

⁴⁷ *Id.* at 191.

⁴⁸ *Id.* at 12.

⁴⁹ See also Barnett, T.P., et al. 2008. Human-Induced Changes in the Hydrology of the Western United States. Science DOI: 10.1126/science.1152538. Based on observations showing that the hydrological cycle of the western U.S. has changed significantly over the last half of the twentieth century, Barnett *et al.* (2008) presented a regional, multivariable climate-change detection and attribution study, focusing on the changes that have already affected this primarily arid region with a large and growing population. The results show up to 60 percent of the climate-related trends of river flow, winter air temperature, and snow pack between 1950 and 1999 are human-induced. They portend, in conjunction with previous work, a coming crisis in water supply for the western United States.

⁵⁰ 40 C.F.R. § 1502.15.

⁵¹ See *Half Moon Bay Fisherman's Marketing Ass'n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988) ("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").

⁵² *Muckleshoot Indian Tribe v. United States Forest Serv.*, 177 F.3d 800, 814 (9th Cir. 1999) (per curiam) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350, 104 L. Ed. 2d 351, 109 S. Ct. 1835 (1989)) (internal quotation marks omitted).

⁵³ 42 U.S.C. § 4332(C).

consequences of leasing the LBA Tracts—fails to meet this basic requirement in the numerous ways discussed below. These omissions render the DEIS inadequate under NEPA.

A. The DEIS Fails to Account for All GHG Emissions Resulting from Leasing the LBA Tracts.

In quantifying the GHGs that will be emitted as a consequence of leasing the LBA Tracts, the DEIS inventories only those emissions resulting from mining operations themselves, including electricity used on site and mining processes.⁵⁴ The DEIS expressly omits inventories of GHGs emissions resulting from on-site transport and rail transport to buyers—coal-fired power plants for electricity generation—stating that such information is lacking.⁵⁵

This conclusory assertion is flatly inadequate under NEPA, which requires environmental impact statements to “insure the scientific integrity” of their analyses, contain “accurate scientific analysis,” and “provide full and fair discussion of significant environmental impacts.”⁵⁶ Indeed, it is not at all clear that such information is, in fact, elusive or lacking, but even assuming that it is, the “CEQ has devised a specific procedure for ‘evaluating reasonably foreseeable significant adverse effects on the human environment’ when ‘there is incomplete or unavailable information.’”⁵⁷ Thus, after disclosing that information is lacking, “if the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known,” the agency must include in the environmental impact statement” a statement “that such information is incomplete or unavailable”; a statement of “the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment”; a “summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment,” and the agency’s “evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community.”⁵⁸ None of this information was provided in the DEIS.

B. The DEIS Fails to Account for the GHG Emissions Resulting from Combustion of the Coal.

The DEIS contains no mention of the GHG emissions resulting from combustion of the coal that would be mined as a direct consequence of leasing the LBA Tracts. While the DEIS acknowledges that the proposed action would result in a “major commitment of resources” in the form of the “mining and consumption” of 731.2 to 760.8 million tons of coal for “electrical power generation,”⁵⁹ the DEIS fails to inventory the GHGs that will be emitted as a result of consumption (*i.e.*, combustion) of this coal.

⁵⁴ DEIS at 3-254.

⁵⁵ *Id.*

⁵⁶ 40 C.F.R. § 1502.24, §1500.1(B), §1502.1; *see also Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (when the *nature* of the effect is reasonably foreseeable but its *extent* is not, we think that the agency may not simply ignore the effect”) (emphases in original).

⁵⁷ *Id.* (quoting 40 C.F.R. § 1502.22).

⁵⁸ *Id.* at § 1502.22(b).

⁵⁹ DEIS at 3-255.

This is flatly inadequate under NEPA. Again, NEPA requires federal agencies to consider “any adverse environmental effects” of their “major ... actions.”⁶⁰ The CEQ regulations, which are binding on the agencies, explain that “effects” include both “direct” effects and “indirect” effects.⁶¹ Indirect effects are defined as those that “are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.”⁶² “Indirect effects may include . . . effects on air and water and other natural systems, including ecosystems.”⁶³ This language leaves little doubt that the type of effect at issue here, GHG emissions, is indeed something that must be addressed in an EIS if it is “reasonably foreseeable,”⁶⁴ and an environmental effect is “reasonably foreseeable” if it is “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.”⁶⁵ Accordingly, it is arbitrary to disclose and consider basic information about the GHG emissions resulting from all phases of the mines’ life-cycle in the DEIS.⁶⁶

C. The DEIS Fails to Account for Impacts of the Proposed Action Resulting from Combustion By-Products like Black Carbon.

The DEIS excludes any and all consideration of combustion by-products like black carbon, or soot, which is generated (among other things) by combustion of fossil fuels including coal. Black carbon is a particulate that deposits to the surface of the Earth, often in Alaska, Greenland, or the Arctic Ocean, within about a week of its emission, which usually occurs in the northern hemisphere. Black carbon influences the climate both in the atmosphere and at the surface, before and after it is deposited; the contrast between black carbon, the darkest aerosol, and snow and ice, the brightest surfaces of the planet, causes black carbon to absorb sunlight and to warm the Arctic atmosphere by approximately the same amount as human-injected CO₂ in spring and

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⁶⁰ 42 U.S.C. § 4332(C) (emphasis added).

⁶¹ 40 C.F.R. § 1508.8.

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Mid States*, 456 F.3d at 549 (citing *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)).

⁶⁶ *Id.* (holding that “it would be irresponsible for the [Surface Transportation] Board to approve [an upgrade and construction of coal rails lines] without first examining the effects that may occur as a result of the reasonably foreseeable increase in coal consumption”). This analysis must also include disclosure and consideration of the cumulative effects of leasing the LBA Tracts. 40 C.F.R. § 1508.7. (Cumulative impact is the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.”) The cumulative impact analysis is intended to address the classic “one cigarette at a time” problem: a chain smoker can always claim that the cigarette he is currently smoking is too insignificant to have an effect upon his health. But the action, repeated over and over again, surely does. Similarly, NEPA’s cumulative impacts analysis requirement is intended to address problems like GHG emissions that may appear individually insignificant, but cumulatively create a serious environmental problem. It is difficult to imagine a more important cumulative impact analysis than that of coal, and the American public and our decision-makers are entitled to understand the impacts that result from the greenhouse gas emissions of our coal use.

summer, when snow and ice are most vulnerable to melting.⁶⁷ The DEIS must be revised and recirculated to include black carbon in its analysis of climate impacts.⁶⁸

D. The DEIS Fails to Address the Impacts of the Proposed Action to Species that are Threatened by Climate Change.

Species—including species that are listed as threatened or endangered under the Endangered Species Act—are threatened by the effects of global warming and therefore, the GHG emissions that would result from leasing the LBA Tracts may affect such species. BLM cannot reasonably dispute that leasing the LBA Tracts would affect species through climate impacts. Thus, in both the EIS and through consultation under the Endangered Species Act, 16 U.S.C. § 1531 *et seq.* (“ESA”) (where applicable), BLM must analyze the direct, indirect, and cumulative impacts of the project on species that may not necessarily occur in the immediate vicinity of the proposed project, but will nonetheless be impacted by the proposed project’s GHG emissions.

Species affected by global warming include two listed coral species, elkhorn and staghorn corals, as the final listing rule for these species specifically discussed the impacts of global warming and greenhouse gas emissions on the species.⁶⁹ Indeed, coral reefs are among the first ecosystems to show the significant adverse impacts of global warming. As the National Marine Fisheries Service stated in the listing rule: “The major threats to these species’ persistence (*i.e.*, disease, elevated sea surface temperature, and hurricanes) are severe, unpredictable, have increased over the past 3 decades, and, at current levels of knowledge, the threats are unmanageable.”⁷⁰ Each of these threats is directly related to GHG emissions. Moreover, CO₂ emission themselves are resulting in acidification of the ocean, inhibiting coral growth.

Along with elevated sea surface temperature, atmospheric carbon dioxide levels have increased in the last century, and the trend is likely to continue. As atmospheric carbon dioxide is dissolved in surface seawater, seawater becomes more acidic, shifting the balance of inorganic carbon away from carbon dioxide and carbonate toward bicarbonate. This shift decreases the ability of corals to calcify because corals are thought to use carbonate, not bicarbonate, to build their aragonite skeletons. Experiments have shown a reduction of coral calcification in response

⁶⁷ Zender, C.S. 2007. Arctic Climate Effects of Black Carbon. Written testimony to the Oversight and Government Reform Committee, U.S. House of Representatives. See also Schwartz, J. 2007. Testimony for the Hearing on Black Carbon and Climate Change House Committee on Oversight and Government Reform United States House of Representatives.

⁶⁸ *Half Moon Bay Fishermans’ Marketing Ass’n v. Carlucci*, 857 F.2d 505, 508 (9th Cir. 1988) (quoting *California v. Block*, 690 F.2d 753, 770-71 (9th Cir. 1982)) (“NEPA’s public comment procedures are at the heart of the NEPA review process” and “reflect ‘the paramount Congressional desire to internalize opposing viewpoints into the decision making process to ensure that an agency is cognizant of all the environmental trade-offs that are implicit in a decision.’” Thus, “[i]t is only at the stage when the draft EIS is circulated that the public and outside agencies have the opportunity to evaluate and comment on the proposal” and “[n]o such right exists upon issuance of a final EIS.”); *id.* (“an agency’s failure to disclose a proposed action before the issuance of a final EIS defeats NEPA’s goal of encouraging public participation in the development of information during the decision making process”).

⁶⁹ See 71 Fed. Reg. 26852.

⁷⁰ *Id.* at 26858.

to elevated carbon dioxide levels; therefore, increased carbon dioxide levels in seawater may be contributing to the status of the two species.⁷¹

In 1998, which at the time was the warmest year on record, bleaching occurred in every ocean, ultimately resulting in the death of 10-16 percent of the world's living coral.⁷² In 2005, which eclipsed 1998 as the warmest year on record, a major bleaching event swept through the Caribbean, bleaching more than 90 percent of live coral in some areas and resulting in the ultimate death of about 20 percent of living coral region-wide.⁷³ Before this unprecedented single-year die-off even began, the Caribbean contained the world's most degraded coral reefs, having already lost as much as 80 percent of live coral over the preceding 30 years.⁷⁴ It will not take many more episodes like the 2005 bleaching event before living coral reefs in the Caribbean disappear entirely.⁷⁵

While coral reefs are threatened by many additional factors, including pollution and direct destruction from dredging and other activities, climate change is an increasingly dominant threat. There is clear evidence that the record-setting ocean temperatures of 1998 and 2005 that triggered widespread bleaching and mortality are the product of global warming.⁷⁶ And while the link between coral bleaching and global warming is relatively intuitive, even the outbreaks of coral disease that ravaged the elkhorn and staghorn coral species have been linked to elevated water temperatures.⁷⁷ Finally, scientific evidence indicates that global warming increases the probability of severe weather events like the series of intense hurricanes that have so impacted Caribbean reefs in recent decades.⁷⁸

While bleaching is perhaps the most well-known impact of global warming on coral reefs, it is far from the being the only such impact. At the same time the oceans absorb increased heat

⁷¹ *Id.* at 26858-59.

⁷² Hoegh-Guldberg, O. 2005. Marine Ecosystems and Climate Change. *Climate Change & Biodiversity*, [Lovejoy, T.E., L. Hannah (eds.)].

⁷³ Hansen, J., M. Sato, R. Ruedy, K. Lo, D. W. Lea, M. Medina-Elizade. 2006. Global temperature change. *Proceedings of the National Academy of Sciences (PNAS)* Published online September 25, 2006, doi:10.1073/pnas.0606291103; Federal Response to the 2005 Caribbean Bleaching event, available at http://coralreefwatch.noaa.gov/caribbean2005/docs/2005_bleaching_federal_response.pdf (last accessed Jan. 29, 2008).

⁷⁴ Gardner, T. A., I. M. Côté, J. A. Gill, A. Grant, and A. R. Watkinson. 2003. Coral reef decline in the Caribbean: Response to Buddemeir and Ware. *Science* 302:392-393.

⁷⁵ Hoegh-Guldberg 2005.

⁷⁶ Hansen *et al.* 2006; *see also* Alley *et al.* 2007. Summary for Policy Makers In *Climate Change 2007: The Physical Science Basis* Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Available at <http://www.ipcc.ch>.

⁷⁷ Harvell, C.D., C.E. Mitchell, J.R. Ward, S. Altizer, A.P. Dobson, R.S. Oatfeld, M.D. Samuel. 2002. Climate Warming and Disease Risks for Terrestrial and Marine Biota. *Science* 296: 2158-2162.

⁷⁸ Santer, B. D., T. M. L. Wigley, P. J. Glecklera, C. Bonfilsd, M. F. Wehnere, K. AchutaRaoa, T. P. Barnettf, J. S. Boylea, W. Brüggemanng, M. Fiorinoa, N. Gilletth, J. E. Hanseni, P. D. Jonesh, S. A. Kleina, G. A. Meehlc, S. C. B. Raperj, R.W. Reynoldsk, K. E. Taylora, W. M. Washington. 2006. Forced and Unforced Ocean Temperature Changes in Atlantic and Pacific Tropical Cyclogenesis Regions. *Proceedings of the National Academy of Sciences (PNAS)*. Published online September 19, 2006, doi:10.1073/pnas.0602861103; *see also* Alley *et al.* 2007.

added to the climate from the burning of greenhouse gases, so, too, do they absorb the increased levels of the most important greenhouse gas—CO₂. The growth in atmospheric CO₂ concentrations leads to increasing acidification of the ocean, and this acidification only adds to the global warming-induced changes threatening the survival of coral and other important marine species.⁷⁹

A letter signed by the top 25 marine scientists who study ocean acidification emphasized that the decrease in pH due to un-checked CO₂ emissions will be devastating and irreversible on human time scales.⁸⁰ The authors predict that without immediate carbon dioxide emissions reductions, pH will decrease by more than 0.2 units by midcentury, and the IPCC estimates that over the 21st century, the ocean's pH level could decrease to as much as 0.35 units.⁸¹

Already, the oceans have taken up about 50 percent of the CO₂ that humans have produced since the industrial revolution, and this has lowered the average ocean pH by 0.11 units.⁸² Currently, the ocean takes up about 22 million tons of CO₂ each day.⁸³ While preindustrial levels of atmospheric CO₂ hovered around 280 ppm, they have now increased to over 380 ppm; if current trends continue, they will increase another 50 percent by 2030.⁸⁴ These rising CO₂ levels are irreversible on human timescales, and over time, the ocean will absorb up to 90 percent of this CO₂, greatly affecting the oceans' pH level.⁸⁵

This foretells a stark future for marine life. Due to acidification, within our lifetimes, coral reefs may erode faster than they can rebuild.⁸⁶ Corals are extremely vulnerable to ocean acidification and scientists studying acidification predict that coral reefs will decline in density and diversity unless CO₂ emissions are stabilized at present levels.⁸⁷ Under conservative models of future CO₂

⁷⁹ Alley *et al.* 2007. Acidification occurs as a natural result of the ocean's carbonate buffer system. Carbon dioxide that is absorbed by seawater reacts to form carbonic acid, which dissociates to form bicarbonate and releases hydrogen ions, which then bond with carbonate ions to form more bicarbonate. This reaction reduces the amount of carbonate ions and decreases pH. Reduction in carbonate is an important concern because many organisms depend on it to form their shells and skeletons. Thus, as CO₂ enters the oceans' waters, there is a profound impact on the entire marine ecosystem, for ocean acidification severely affects many calcifying species like coral and phytoplankton that play a crucial role in supporting marine life.

⁸⁰ Caldeira, K. and 25 others. 2007. Comment on "Modern-age buildup of CO₂ and its effects on seawater acidity and salinity" by Hugo A. Loaiciga, *Geophysical Research Letters* 34: L18608.

⁸¹ *Id.*; Alley *et al.* 2007.

⁸² Sabine, C.L., R.A. Feely, N. Gruber, R.M. Key, K. Lee, J.L. Bullister, R. Wanninkhof, C. S. Wong, D.W. R. Wallace, B. Tilbrook, F.J. Millero, T. Peng, A. Kozyr, T. Ono, A.F. Rios. 2004. The Oceanic Sink for Anthropogenic CO₂. *Science* 305: 367-371.; Alley *et al.* 2007.

⁸³ Feely, R.A., *et al.* 2006. Carbon Dioxide and Our Ocean Legacy (2006).

⁸⁴ Orr, J.C., V.J. Fabry, O. Aumont, L. Bopp, S.C. Doney, R.A. Feely, A. Gnanadesikan, N. Gruber, A. Ishida, F. Joos, R.M. Key, K. Lindsay, E. Maier-Reimer, R. Matear, P. Monfray, A. Mouchet, R.G. Najjar, G. Plattner, K.B. Rodgers, C.L. Sabine, J.L. Sarmiento, R. Schlitzer, R.D. Slater, I.J. Totterdell, M. Weirig, Y. Yamanaka, A. Yool. 2005. Anthropogenic ocean acidification over the twenty-first century and its impact on calcifying organisms. *Nature* 437: 681-686.

⁸⁵ Kleypas, J.A., R.A. Feely, V.J. Fabry, C. Langdon, C.L. Sabine, L.L. Robbins. 2006. Impacts of Ocean Acidification on Coral Reefs and Other Marine Calcifiers: A Guide for Future Research. Available at www.ucar.edu/news/releases/2006/report.shtml.

⁸⁶ Feely 2006.

⁸⁷ Hoegh-Guldberg, O., P.J. Mumby, A.J. Hooten, R.S. Steneck, P. Greenfield, E. Gomez, C.D. Harvell,

emissions, most of the world's coral reefs, already bleaching in the warmer waters, will erode to rubble by the end of the century.⁸⁸ Corals provide vital functions for marine ecosystems, and their loss will likely bring grave impacts to the oceans and the species that inhabit them.

Ocean acidification also impacts calcifying plankton species at the base of the marine foodchain. Like coral, plankton also play a vital role in the marine ecosystem. These organisms contribute much of the organic material entering the marine food chain and are responsible for about 50 percent of the earth's primary production.⁸⁹ Carbon dioxide uptake by the ocean causes impaired growth and development for calcifying plankton, and acidification dissolves the protective armor of some plankton, limiting their ability to survive. Thus, as the ocean absorbs more CO₂ and pH levels continue to decrease, the marine environment is expected to undergo profound changes due to impacts at many different levels in the food chain.

Marine ecosystems and species are not the only species threatened by the effects of global warming. The leading study on the quantification of risk to species from climate change, published in 2004 in *Nature*, included over 1,100 species distributed over 20 percent of the earth's surface area.⁹⁰ Under a relatively high emissions scenario, 35 percent, under a medium emissions scenario 24 percent, and under a relatively low emissions scenario, 18 percent of the species studied would be committed to extinction by the year 2050.⁹¹ Extrapolating from this study to the Earth as a whole reveals that over a million species may be at risk. It is important to note that we are currently on a trajectory to exceed the emissions assumed in the high warming scenario used by Thomas et al. (2004).⁹² The essential message is that we must reduce emissions immediately in order to save many thousands of species and protect the ecosystems upon which we all depend.

The Edith's checkerspot butterfly is one of the first species for which scientists have documented a clear range shift due to global warming. The butterfly's range has moved both northward and upward in elevation in response to a 0.72° C increase in regional warming.⁹³ The range shift was not due to butterfly populations actually moving, but instead to a higher proportion of population extinctions in the southern and lowland portions of the range.⁹⁴ These population extinctions are

P.F. Sale, A.J. Edwards, K. Caldeira, N. Knowlton, C.M. Eakin, R. Iglesias-Prieto, N. Muthiga, R.H. Bradbury, A. Dubi, M.E. Hatzilios. 2007. Coral Reefs Under Rapid Climate Change and Ocean Acidification. *Science* 318: 1737-1742.

⁸⁸ *Id.*

⁸⁹ Royal Society. 2005. Ocean Acidification Due to Increasing Atmospheric Carbon Dioxide. Available at: <http://royalsociety.org/document.asp?id=3249> (last accessed Dec. 24, 2008).

⁹⁰ Thomas, C.D., A. Cameron, R.E. Green, M. Bakkenes, L.J. Beaumont, Y.C. Collingham, B.F.N. Erasmus, M. Ferreira de Siqueira, A. Grainger, L. Hannah, L. Hughes, B. Huntley, A.S. van Jaarsveld, G.F. Midgley, L. Miles, M.A. Ortega-Huerta, A. Townsend Peterson, O.L. Phillips, S.E. Williams. 2004. Extinction Risks from Climate Change. *Nature* 427: 145-148.

⁹¹ *Id.*

⁹² Thomas, C.D., A. Cameron, R.E. Green, M. Bakkenes, L.J. Beaumont, Y.C. Collingham, B.F.N. Erasmus, M. Ferreira de Siqueira, A. Grainger, L. Hannah, L. Hughes, B. Huntley, A.S. van Jaarsveld, G.F. Midgley, L. Miles, M.A. Ortega-Huerta, A. Townsend Peterson, O.L. Phillips, S.E. Williams. 2004. Extinction Risks from Climate Change. *Nature* 427: 145-148.

⁹³ Parmesan & Yohe 2003.

⁹⁴ *Id.*

the result of the fact that the species' host plant, *Plantago erecta*, now develops earlier in the spring, while the butterfly's caterpillars continue to hatch at the same time.⁹⁵ As a result, the caterpillars now hatch on plants that have already completed their lifecycle and dried up, instead of on younger edible plants.⁹⁶ The tiny checkerspot caterpillars are unable to move far enough to find other food and, as a result, starve to death.⁹⁷

Another animal struggling under the heavy hand of climate change is the American pika. This small mammal, a relative of the rabbit, is adapted to life in talus piles on high, treeless mountain peaks. Fossil evidence demonstrates that pikas once ranged widely over North America, but their range has contracted to a dwindling number of isolated peaks during the warm periods of the last 12,000 years.⁹⁸ Pikas are limited by their metabolic adaptation to their cold habitat niche.⁹⁹ Hence, while more mobile alpine species such as birds may be able to shift their ranges poleward as warming temperatures and advancing treelines, competitors, and predators impact their mountain habitat, pikas are generally incapable of such long range dispersal.¹⁰⁰ Rather, they can only migrate upslope as the climate warms.¹⁰¹ In large portions of its range, however, the American pika is already occupying the highest elevation talus habitats that exist on a given mountain range; in such cases there is no upslope habitat to migrate to, and the mountain's population will ultimately disappear as the climate continues to warm. Already, at least 9 of 25 (36 percent) of pika populations found in the Great Basin have been extirpated, and the pika range has shifted upslope by 900 feet in this region. This small creature may well become one of global warming's first victims.

Species such as the checkerspot butterfly and American pika demonstrate how climate change brought about by global warming will influence the earth's biodiversity as various species struggle to adapt to their changing habitats. Likewise, sensitive ecosystems, some literally melting under the impacts of global warming, have provided even more evidence of the dire consequence global warming will have on the earth's biological balance.

The Arctic has experienced the effects of global warming earlier and more intensely than any other area on the planet. Over the past 100 years, average Arctic temperatures increased at almost twice the global average rate.¹⁰² Specifically, in parts of Alaska and western Canada, winter temperatures have increased by as much as 3.5° C in the past 30 years.¹⁰³ Over the next

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.*

⁹⁸ Krajick, K. 2004. All Downhill From here? *Science* 303: 1600-1602.

⁹⁹ *Id.*

¹⁰⁰ *Id.*

¹⁰¹ *Id.*

¹⁰² Alley *et al.* 2007.

¹⁰³ Rosenzweig, C., G. Casassa, D.J. Karoly, A. Imeson, C. Liu, A. Menzel, S. Rawlins, T.L. Root, B. Seguin, P. Tryjanowski, and C.E. Hanson, 2007: Assessment of observed changes and responses in natural and managed systems. In *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. M.L. Parry, O.F. Canziani, J.P. Palutikof, and P.J. van der Linden, Eds. Cambridge University Press, pp. 79-131.

100 years, under a moderate emissions scenario, annual average temperatures in the Arctic are projected to rise an additional 3-5° C over land and up to 7° C over the oceans.¹⁰⁴ This rapid warming of the Arctic is reflected in the devastating melt of the Arctic sea ice, which is highly sensitive to temperature changes. As stated above, in 2007, summer sea-ice extent reached an unpredicted and utterly stunning new record minimum.¹⁰⁵ At 1.63 million square miles, the minimum sea-ice extent on September 16, 2007 was about one million square miles (equal to the area of Alaska and Texas combined) below the average minimum sea ice extent between 1979 and 2000 and 50 percent lower than conditions in the 1950s to the 1970s.¹⁰⁶ This minimum was lower than the sea-ice extent most climate models predicted would be reached after 2050.¹⁰⁷ This stark reality of global warming in the Arctic is having a disturbing and demonstrated effect on polar bears. One of the most ice-dependent of all Arctic species, polar bears require sea-ice habitat for survival.¹⁰⁸ For example, polar bears rely on sea ice as a platform from which to hunt ringed seals and other prey, to make seasonal migrations between the sea ice and their terrestrial denning areas, and for other essential behaviors such as mating. As the sea ice rapidly melts away, so, too, does the polar bears' essential habitat.

The scientific projections of future melting of the sea ice are particularly troubling. Under optimistic future emissions scenarios, summer sea ice will decline 50-100 percent by the end of the century.¹⁰⁹ Under more likely scenarios, however, leading sea ice researchers now believe that the Arctic could be completely ice free in the summer by 2030¹¹⁰ or even by 2012.¹¹¹ Even without a complete disappearance of sea ice, scientists have predicted a cascade of impacts to polar bears from global warming and melting ice that will affect virtually every aspect of the species' existence, including its hunting season and ability to efficiently hunt its ice-dependent prey; female bears' ability to reach their preferred denning areas on land; and increases in bear-human interactions.¹¹² The combined effects of these global warming consequences on individual bears' reproduction and survival translate into impacts on polar bear populations. Polar bear populations are already declining. The Western Hudson Bay polar bear population

¹⁰⁴ Meehl, G.A., T.S. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver, Z. Zhao. 2007. Global Climate Projections. *Climate Change 2007: The Physical Science Basis of Climate Change. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*, [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

¹⁰⁵ Stroeve, J. et al. 2008.

¹⁰⁶ *Id.*; NSIDC. 2007.

¹⁰⁷ Stroeve, J. et al. 2008.

¹⁰⁸ Regehr et al. 2007. Effects of earlier sea ice breakup on survival and population size of polar bears in Western Hudson Bay. *Journal of Wildlife Management* 71(8):2673-2683; Derocher, A.E., N.J. Lunn, and I. Stirling. 2004. Polar bears in a warming climate. *Integrated Comparative Biology* 44:163-176.

¹⁰⁹ Holland, M.M., Bitz, C.M., Tremblay, B. 2006. Future Abrupt Reductions in the Summer Arctic Sea Ice. *Geophysical Research Letters*. 33: L23503 doi:10.1029/2006GL028024.

¹¹⁰ Stroeve, J. et al. 2008.

¹¹¹ Kizzia, T. 2008. Lacking Studies, State Still Disputes Polar Bear "Doom." Anchorage Daily News. January 27, 2008. Available at www.adn.com/626/story/295420.html (last accessed Dec. 24, 2008).

¹¹² Derocher et al. 2004.

has declined by 22 percent since 1987, from 1,194 bears to 935.¹¹³ Likewise, the Polar Bear Specialist Group has classified the Southern Beaufort Sea polar bear population as declining.¹¹⁴ Within this group of polar bears, researchers have observed starvation, increased drownings, and cannibalism motivated by nutritional stress, a behavior without precedent.¹¹⁵ U.S. Geological Survey biologists, in a landmark series of reports released in September 2007, have concluded that under a business as usual emissions scenario, two-thirds of the world's polar bears will be extirpated by 2050.¹¹⁶

The impact of global warming on wildlife is reflected not only in the voluminous literature but in recent regulatory action under the Endangered Species Act as well. On May 15, 2008, the U.S. Fish and Wildlife Service listed the polar bear as a threatened species throughout its range due to global warming.¹¹⁷ On May 9, 2006, the National Marine Fisheries Service listed the staghorn and elkhorn corals as threatened due in part to increasing ocean temperature and ocean acidification due to anthropogenic greenhouse emissions.¹¹⁸ Global warming was cited by the U.S. Fish and Wildlife Service in its critical habitat rulemakings for the Quino Checkerspot and Bay Checkerspot butterflies.¹¹⁹

Global warming is one of the greatest challenges our civilization faces. It threatens to transform everything about our landscape, and to alter much in nature such as the timing of the rains and the modulations of the seasons—even the ocean currents may be altered. Moreover, global climate change impacts are occurring more rapidly than scientists anticipated even just a few years ago. Indeed, a review of hundreds of research studies tells us that animal and plant species have begun dying off or changing sooner than predicted because of global warming. The DEIS contravenes NEPA because it does not adequately describe climate change and its impacts. The DEIS has not canvassed the literature to support its (implicit) claims that coal remains a suitable energy source in the face of global warming, nor has it revealed the science behind global warming or discussed the environmental “baseline,” which scientists already suggests will cause dramatic changes to our landscape, our wildlife, our weather, and our oceans. Accordingly, the DEIS has failed to take a hard look at both the affected environment and the environmental effects surrounding this project.

¹¹³ Aars, J., N.J. Lunn, and A.E. Derocher. 2006. *Polar Bears: Proceedings of the 14th Working Meeting of the IUCN/SSC Polar Bear Specialist Group, 20-24 June 2005, Seattle, Washington, USA*, at 44. IUCN, Gland, Switzerland and Cambridge, UK.

¹¹⁴ *Id.*

¹¹⁵ Regehr et al. 2006; Amstrup, S.C., I. Stirling, T.S. Smith, C. Perham, and G.W. Thiemann. 2006. Recent observations of intraspecific predation and cannibalism among polar bears in the southern Beaufort Sea. *Polar Biology* DOI 10.1007/s00300-006-0142-5. Monnett, C. and J.S. Gleason. 2006. Observations of mortality associated with extended open water swimming by polar bears in the Alaskan Beaufort Sea. *Polar Biology* 29(8):861-687.

¹¹⁶ Amstrup, S.C., B.G. Marcot, and D.C. Douglas. 2007. *Forecasting the Range-wide Status of Polar Bears at Selected Times in the 21st Century*. U.S. Geological Survey, Reston, Virginia, USA.

¹¹⁷ *Endangered and Threatened Wildlife and Plants, Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout its Range*, 73 Fed. Reg. 28212-28303 (May 15, 2008).

¹¹⁸ 71 Fed. Reg. 26852.

¹¹⁹ 73 Fed. Reg. 3328-3373; 72 Fed. Reg. 48178-48218.

III. The DEIS Fails to Ensure Conformity with Federal and State Air Quality Standards and the Applicable Implementation Plan.

Under the implementing regulations for NEPA, BLM must analyze, among other things, whether the alternatives will meet federal and state air quality standards.¹²⁰ Moreover, the action cannot cause or contribute to any new violation of the National Ambient Air Quality Standards ("NAAQS") or delay timely attainment of any standard or any required interim emission reduction or other milestones.¹²¹

BLM failed to sufficiently analyze whether its preferred alternative for the Project will comply with federal and state laws related to air quality. In addition to these leases, there are several other proposed or existing coal mines and coal-fired power plants in the immediate area and region. While the BLM includes some discussion of the air quality impacts of leasing the LBA Tracts in the DEIS, there is inadequate information presented in the DEIS from which to evaluate the cumulative environmental impacts of the preferred alternative as well as from the projected future increases in air pollution that would result from all of these activities. This renders BLM's air quality analysis inadequate under NEPA.

In addition, BLM has wholly failed to demonstrate conformity with section 176(c) of the Clean Air Act (CAA), as amended, 42 U.S.C. 7401 *et seq.*, and regulations under 40 C.F.R. part 93, subpart w, which states that "no department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity which does not conform to an applicable implementation plan." In order to comply with the CAA's federal conformity provision, BLM must have ensured that the proposed plan conformed with the applicable state implementation plan ("SIP") before the approving the plan. BLM failed to do this in the DEIS.

Conclusion

For the reasons set forth above, the Center requests that BLM prepare a revised EIS that complies with NEPA.

Sincerely,



Amy R. Atwood
Senior Attorney

¹²⁰ See 40 C.F.R. §1508.27 (10) (requiring that the preparing agency evaluate "[w]hether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment").

¹²¹ 40 C.F.R. Part 93.

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Attachments:

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Response to Comment Letter 2: Center for Biological Diversity

Comment Response 2A: Ongoing scientific research has identified some of the potential impacts of GHG emissions, and changes in biologic carbon sequestration capacity on the global climate. Through complex interactions on a regional and global scale, these changes cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat radiated by the earth back into space. Although natural GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused carbon dioxide equivalent (CO₂(e)) concentrations to increase dramatically, and are likely to contribute to overall global climatic changes.

Climatic change analyses are comprised of several factors, including GHG emissions, land use management practices, and the albedo effect. In Chapter 3, we have identified the effects of recent global climate change on the environment (the affected environment) in the area of the proposed action. We have assumed that existing land and resource conditions within the analysis area have been and will continue to be affected by climate change under all alternatives, including the No Action Alternative. Existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. We have referenced national and regional data that is available, most recent being the report, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States* (U.S. Climate Change Science Program 2008).

Tools necessary to quantify incremental climatic changes associated with those factors for specific activities like mining of an LBA tract are presently unavailable. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Therefore climate change analysis in this EIS is limited to accounting and disclosing factors that contribute to climate change. To the extent that emission data were available or could be inferred from representative type data, we have identified potential GHG emissions that could result from development of the proposed LBAs, as well as emissions that will result from selection of the no action alternative.

The site-specific impacts analyzed in this EIS are based on the assumption that if the LBA tracts are offered for competitive lease, a lease would be issued, and mining would be permitted. We further assume that the applicant would be the lessee and that the lease would be permitted as an extension of their current mining operations. In Chapter 3, Affected Environment and Environmental Consequences, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative.

In Chapter 4, Cumulative Environmental Consequences, the contribution of the site-specific alternatives to cumulative effects on the environment is evaluated. To do this, it is assumed that coal mining will proceed in accordance with permit conditions. We further assume that this coal will be sold to coal users in response to forecasts of demand for this coal. Historically these users have been electric utilities in the United States, although there are also some sales outside the U.S. This coal market is open and competitive and users can buy from the most cost effective suppliers that meet their needs.

We have estimated the amount of GHG emissions that could be attributed to coal production that could result from leasing of the proposed LBAs, as well as from the forecast coal production from all coal mines in the Wyoming PRB. This information is included in Chapter 4 (4.2.14.1). This was done by relating the portion of coal mined to the total emission of GHG from all coal mined in the U.S. We assumed that all PRB coal was used for coal fired electric generation as part of the total U.S. use of coal for electric generation. This gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs and for forecast total PRB coal production. Given the state of the science, specific levels of significance have not yet been established for GHG emissions. It is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach precise conclusions as to the magnitude the emissions will have on climate change. The impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions land use management practices, and the albedo effect. The EIS does provide a meaningful context and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

The FEIS acknowledges that that in addition to the major GHGs listed in the DEIS, other gaseous compounds, while occurring in much smaller concentrations, are also considered GHGs. There is no list of EPA recognized GHGs at this time.

As noted above, we have assumed that existing land and resource conditions within the analysis area have been and will continue to be affected by climate change under all alternatives. Existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. The affected environment descriptions reflect any measurable or observable affect on the subject as a result of historic climate change as well as other historic factors. In Chapter 4, we have summarized and referenced studies of national and regional climatic affect, most recent being the report, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States* (U.S. Climate Change Science Program

2008). In Chapter 3, revisions have been made to include an updated discussion of GHGs.

As coal is a mine on demand product, its development is inherently regulated by the amount of public use. Demand for coal is further adjusted by the regulations imposed by both federal and state governments on mining operations and combustion facilities. Therefore, the mining of coal will adjust to the demand for coal.

Comment Response 2B: This EIS addresses the leasing of federal coal reserves and does not authorize or permit either surface disturbance or mining. Mining is addressed as it is a logical consequence of leasing. The greenhouse gases that would be emitted by mining operations as a result of leasing are discussed in Section 3.18.2.

We have estimated the amount of GHG emissions that could be attributed to coal production that could result from leasing the proposed LBAs, as well as from the forecasted coal production from all coal mines in the Wyoming PRB. This information is included in Chapter 4 (4.2.14.1). This was done by relating the portion of coal mined to the total emission of GHG from all coal mined in the U.S. We assumed that all PRB coal was used for coal fired electric generation as part of the total U.S. use of coal for electric generation. This gives an estimate of the maximum GHG resulting from use of the coal that would be produced from the proposed LBAs and for forecast total PRB coal production.

Wyoming PRB coal is sold on the open market; therefore, it is not possible to know with any reasonable certainty what power plants would use this coal or in what amount. The variety of burning and emission control apparatus installed in the many facilities to which PRB coal is sold would also make calculating CO₂ emissions difficult. We agree that some sort of calculation is possible for CO₂ released during the laboratory combustion of coal. The following information has been added to the final EIS in section 4.2.14.1: *“In 2006, the Wyoming Powder River Basin coal mines produced approximately 432.0 million tons of coal. Using factors derived from laboratory analyses, it is estimated that approximately 716.9 million metric tons of CO₂ would be generated from the combustion of all of this coal (before CO₂ reduction technologies are applied). This number is based on an average Btu value of 8,600 per pound of Wyoming coal and using a CO₂ emission factor of 212.7 pounds of CO₂ per million Btu (DOE 1994). The estimated 716.9 million metric tons of CO₂ represents approximately 33.6 percent of the estimated 2,134.1 million metric tons of U.S. CO₂ emission from coal combustion (DOE 2007a). In 2006, Wyoming PRB mines accounted for approximately 37.2 percent of the coal produced in the U.S (DOE 2007d).”*

Black carbon is a general term applied to various carbonaceous products of incomplete basic combustion. In coal combustion facilities, they are monitored and regulated by the Wyoming DEQ/AQD. The WDEQ enforces regulations on particulate emissions from coal combustion facilities at or above the standards set by the EPA. The EPA sets standards for emissions based on the principals set forth in the Clean Air Act and the amendments to that act. The effects of black carbon as a particulate are included in the discussion of the effects of particulates on air quality. State enforced mitigation procedures for the effects of black carbon are already in place at coal combustion facilities. There are state and federal operations in place to facilitate the retrofit or decommissioning of older combustion facilities within the United States. This is being done in order to meet or exceed the current U.S. or state air quality standards, whichever is the stricter of the two.

The BLM has generated an update to the “Air Quality” section of the PRB Coal Review Task 3A report published in October of 2008. The new data has been incorporated into Section 4.2.3 (air quality) of the final EIS.

The other source of black carbon from mining results from the use of the internal combustion engine in mining equipment. The U.S. Department of Transportation (DOT) and the EPA regulate air quality standards for carbonaceous particulates released from exhaust pipes on equipment used during mining operations. This is done during the research and development stage and before production of equipment using internal combustion engines. The EPA and the DOT enforce the regulations. At this time, there is direction by presidential mandate to the EPA and DOT to further reduce total U.S. green house emissions that effect equipment which use an internal combustion engine.

The USFWS is responsible for administration of the ESA. This agency manages threatened and endangered species and consults, through the Section 7 process, with other agencies in how proposed projects might impact and affect listed species. All federal agencies have a responsibility under Section 7(a)(1) of the ESA to conserve federally listed threatened and endangered species. BLM cooperates with the USFWS in fulfilling our Section 7 consultation obligations and responsibilities. The biological assessment (Appendix E) and the BLM sensitive species evaluation (Appendix F) for this FEIS have been prepared and provided to USFWS for their review. We continue to work with USFWS in order to address concerns and provide any additional information needs. The EIS has been revised based on comments and oral discussions with the USFWS. Section 7 consultation will be completed before a decision is made on whether to lease or not to lease any of the LBAs discussed in this EIS.

The USFWS is currently monitoring trust resources to see how they are affected by climate change. On May 14, 2008, the USFWS developed an analytical framework for addressing species affected by federal actions which

could emit GHG. BLM will continue to coordinate and consult with USFWS on listed species and will work to ensure that our projects do not adversely affect threatened and endangered species.

Currently, there are not enough non-carbon based, energy producing facilities and available electric transmission capacity in place in the United States to take coal out of the energy portfolios developed by either the Bush or the Obama presidential administrations. For more information on the Obama-Biden comprehensive New Energy for America plan, please see www.whitehouse.gov.

Comment Response 2C: This EIS contains analyses of both the site-specific and cumulative impacts of the proposed action and alternatives. Please see sections 3.4 and 4.2.3 and Appendix H (old Appendix K) of the draft EIS.

The WDEQ/AQD has permitted the current level of operations at these mines, and would have to approve any change if the level of operation is raised above the current permit levels. All mines are required to conduct long-term modeling, followed by on the ground monitoring, to show that their proposed and ongoing operations are in compliance with the NAAQS and the WAAQS. Air quality permits specify the mitigation measures that operators must conduct and maintain to continue mining operations. WDEQ/AQD is a cooperator on the EIS, because they have jurisdiction for the management of air quality in Wyoming.

Teresa Johnson/CFO/WY/BLM/DOI
12/22/2008 03:15 PM

To Gin Vickers/CFO/WY/BLM/DOI@BLM
cc
bcc
Subject Fw: Comments on Draft EIS for South Gillette Area Coal Lease Applications

Teresa Johnson
Environmental Protection Specialist
BLM Wyoming High Plains District Office
National System of Public Lands
ph: 307-261-7510
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----- Forwarded by Teresa Johnson/CFO/WY/BLM/DOI on 12/22/2008 03:15 PM -----



"Liedtke, Roy (RTEA)"
<LIEDTKER@riotinto.com>
12/22/2008 02:31 PM

To <casper_wymail@blm.gov>
cc
Subject Comments on Draft EIS for South Gillette Area Coal Lease Applications

TO: Ms. Teresa Johnson

Following are comments on the Draft EIS for South Gillette Area Coal Lease Applications.

- Section 2.4.1, Page 2-34: The last paragraph discusses coal handling at the two Cordero Rojo Mine facilities (north and south). Please note the Cordero Rojo north facility consists of two coal storage silos while the Cordero Rojo south facility consists of four coal storage silos and a covered storage slot (a total of six coal storage silos, not four as stated).
- Section 3.6.1.4, Page 3-125: The last paragraph discusses the most recent alluvial valley floor (AVF) study along the Belle Fourche River that was completed by Cordero Rojo Mine in 2007. This paragraph states "Formal declaration of the presence or absence of an AVF, its significance to agriculture, and the appropriate areal extent would be made by the WDEQ/LQD as part of the mine permitting process if the LBA tract is leased and proposed for mining." While it is true the "formal" declaration is made during the mine permitting process, the WDEQ/LQD Coal Rules & Regulations, Chapter 3, Section 2(a) allow for "a pre-application determination of the presence or absence of an alluvial valley floor...". This pre-application determination has already been made by WDEQ/LQD for the 2007 AVF study. WDEQ/LQD determined there are no AVFs in the Maysdorf application area. A copy of the pre-application determination letter from WDEQ/LQD is

} A

} B

attached.

Thank you for the opportunity to comment

Roy Liedtke
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Maysdorf AVF Predetermination.pdf

5.2.4.11 07



Department of Environmental Quality



To protect, conserve and enhance the quality of Wyoming's environment for the benefit of current and future generations.

Dave Freudenthal, Governor

John Corra, Director

October 2, 2007

Mr. Roy Liedtke
Cordero Mining Company
P. O. Box 1449
Gillette, WY 82717-1449

RE: Cordero Mining Company's Cordero Mine, Permit No. 237-T8, Approval of Maysdorf Pre-permit Alluvial Valley Floor (AVF) Study, TFN 4 4/360

Dear Mr. Liedtke:

The Land Quality Division (LQD) District III staff reviewed the referenced application which was initially received March 19, 2007, under cover of Aqua Terra Consultants' (ATC) Steve Stresky's letter of March 16, 2007. Modifications of the application were received on July 30, 2007.

This letter approves the Alluvial Valley Floor Predetermination application as set out in the July 30, 2007, revisions. This AVF Predetermination declares that:

1. There are no AVF units as detailed within this application for portions of the Belle Fourche River (from near the northeast corner of Section 10, T.46N. R.71W. and ending approximately 7.4 miles upstream in the SW¼NW¼ of Section 21, T.46N., R.71W.).

The Land Quality Division agrees that there are no AVFs within these described lands.

You should note that:

2. This approved AVF Predetermination does not constitute review of nor approval for Appendix D-11 as it may appear in the Maysdorf amendment application. All materials submitted in the amendment application's Appendix D-11 will be fully reviewed by the LQD staff.
3. ATC should write this AVF Predetermination approval and the supporting information into the Appendix D-11 for the Maysdorf amendment application.
4. This approval letter closes TFN 4 4/360; subsequent correspondence should reference the approved AVF Predetermination.

Herschler Building • 122 West 25th Street • Cheyenne, Wyoming 82002 • <http://deg.state.wy.us>

ADMIRVOUTREACH (307) 777-7758 FAX 777-3610	ABANDONED MINES (307) 777-8143 FAX 777-8462	AIR QUALITY (307) 777-7361 FAX 777-3616	INDUSTRIAL SITING (307) 777-7368 FAX 777-6937	LAND QUALITY (307) 777-7758 FAX 777-5864	SOLID & HAZ. WASTE (307) 777-7752 FAX 777-5973	WATER QUALITY (307) 777-7781 FAX 777-5973
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**Cordero Mining Company's Cordero Rojo Mine,
Permit No. 237-T8
Maysdorf Pre-permit Alluvial Valley Floor (AVF) Study, TFN 4 4/360
September , 2008
Page 2**

If you or the ATC have any questions, please contact Glenn Mooney in the District III Office.

Sincerely,


Richard A. Chancellor
LQD Administrator

RACgm

cc: District III
Steve Stresky, ATC

237avfaceptlet.7gm

Response to Comment Letter 3: Cordero Rojo Mine – Rio Tinto
Energy America

Comment Response 3A: Revisions have been made in Section 2.4.1 in the final EIS to correct the discussion on Cordero Mine facilities to state: *“There are six existing coal storage silos (two at the north facility and four at the south facility) and a covered slot storage structure.”*

Comment Response 3B: Revisions have been made to the last paragraph of Section 3.6.1.4 updating the status of AVF inventories within the Maysdorf II tract. It now states that *“WDEQ/LQD has determined that there are no AVFs within the 7.4 mile section of the Belle Fourche River described above (WDEQ/LQD 2007).”*



National Headquarters

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www.defenders.org

Bureau of Land Management
 Casper Field Office
 Attn: Teresa Johnson
 2987 Prospector Drive
 Casper, Wyoming 82604
casper_wymail@blm.gov

December 23, 2008

Re: Comments on the South Gillette Area Coal Lease

Dear Ms. Johnson:

Thank you for the opportunity to comment on the South Gillette Coal Lease and Draft Environmental Impact Statement (“DEIS”). These comments are submitted on behalf of Defenders of Wildlife (“Defenders”), a non-profit public interest conservation organization with over 500,000 members nationally.

Defenders is dedicated to protecting imperiled species and their habitats by combining scientific research, public organizing, and administrative and legal advocacy. Defenders relies on the Endangered Species Act (“ESA”), and other federal conservation laws to protect endangered and threatened species, and imperiled species not currently benefiting from ESA protections. In addition to species-specific litigation, Defenders is a committed advocate for the protection of the nation’s wildlife refuges, parks, forests and other public lands.

In February 2007, the Intergovernmental Panel on Climate Change (“IPCC”) declared, “[w]arming of the climate system is unequivocal,” and it is “very likely” that most of the warming since the middle of the 20th century is the result of human pollutants. Global warming is a global crisis with well-documented and considerable local impacts. In addition to its other disruptive direct effects, the mining of coal will likely result in the generation of high quantities of greenhouse gas emissions, a significant contributor to global warming. The Bureau of Land Management (“BLM”) was obligated to consider the impacts of a coal lease sale in the DEIS.

The DEIS failed to considered global warming on four notable fronts. The DEIS fails to: (1) analyze the greenhouse gas emissions inevitably resulting from a lease sale; (2) analyze the observed and projected effects of global warming on the welfare of ecosystems; (3) analyze alternatives to coal based energy in meeting energy needs; and (4) analyze the



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impacts of the lease sale on threatened and endangered species protected under the ESA, as well as imperiled species that have yet to be listed.

These comments address and analyze the effects of a coal lease sale on greenhouse gas emissions and the deficiencies of the DEIS. Federal agencies, including the BLM, are required to incorporate global warming and its impacts in their decision calculus under a number of mandates, including the National Environmental Policy Act of 1969, 42 U.S.C. §§ 4331 *et seq.* (“NEPA”). In addition, the project fails to comply with the Endangered Species Act (“ESA”), 16 U.S.C. §§ 1531-1544. We believe that the DEIS must be revised, as it violates NEPA, and must be supplemented to integrate global warming in its analysis.

The DEIS Fails to Analyze Greenhouse Gas Emissions

The Bureau of Land Management (“BLM”) failed to consider and analyze the greenhouse gas emissions that would result from the lease sale of the South Gillette Area Coal (“SGAC”) tract in the Powder River Basin (“PRB”) in Wyoming. The BLM administers mineral resources owned by the federal government. It leases these resources for development under the Mineral Leasing Act, 30 U.S.C. § 221 *et seq.*, and manages them according to resource management plans developed under the Federal Land and Policy and Management Act (“FLPMA”), 43 U.S.C. § 1701 *et seq.* BLM’s failure to consider the greenhouse gas and global warming considerations in the DEIS is arbitrary and capricious.

NEPA requires federal agencies to “ensure that the agency analyzes the probable environmental aspects of their ordinary duties.” Arizona Cattle Growers’ Ass’n v. Cartwright, 29 F.Supp.2d 1100, 1110 (D. Ariz. 1998). NEPA requires that the agency prepare an Environmental Impact Statement (“EIS”) for “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(c). The EIS is “a procedural obligation designed to assure that agencies give proper consideration to the environmental consequences of their actions.” Arizona Cattle Growers’ Ass’n at 1110 (citing Merrell v. Thomas, 807 F.2d 776, 777-78 (9th Cir. 1986)). In addition, the EIS serves to inform both decision makers and the public about the alternatives and adverse impacts of the project. See Columbia Basin Protection Ass’n v. Schlesinger, 643 F.2d 585, 592 (9th Cir. 1981) (“[T]he preparation of an EIS ensures that other officials, Congress, and the public can evaluate the environmental consequences independently.”).

Coal-fired electric power plants are the nation’s largest emitter of greenhouse gases, the leading culprit of global warming, yet the BLM failed to do more than a cursory analysis of the impacts that will result from the lease sale on global warming. This is especially egregious given that Wyoming coal production has increased at a more rapid rate than other domestic coal sources. DEIS, 4-109. The Department of Energy estimates that by 2030, the

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coal share of total energy use will increase from 23 percent in 2006 to 25 percent in 2030. DEIS, 4-109.

The SGAC Mines produced 100.1 million tons of coal in 2006, totaling approximately 22.7 percent of the coal produced in the Wyoming Powder River Basin in 2006, or about 3.2 percent of the estimated U.S. carbon dioxide emissions in 2006. DEIS, 4-111. Under the No Action Alternative, CO₂ emissions attributable to burning coal produced by the Belle Ayr, Coal Creek Caballo, and Cordero Rogo Mines would be extended at about this level for up to approximately 16 years, in which time the mines recover their remaining estimate 1,564 million tons of currently lease coal reserves. *Id.*

As discussed further below, the public and agency decision makers are entitled to know the true costs and impacts of all aspects of the coal lease, including the likely greenhouse gas emissions. Outlining the true impacts and costs of the direct and cumulative greenhouse gas emissions from the coal lease program, and disclosing alternatives and mitigation measures, would very likely lead to increased energy conservation and use of renewable energy sources. See *Center for Biological Diversity, Comments on Proposed Outer Continental Shelf (OCS) Oil and Gas Drilling Program for 2007-2012 and Comments on Draft Environmental Impact Statement for the Proposed OCS Program for 2007-2012*, 71 Fed. Reg. 50457-50463 (2006) (“CBD Comments”). Contrary to the mandate of NEPA to disclose the full environmental consequences of the South Gillette Area Coal Lease, the BLM produced a DEIS that hid the true greenhouse gas emissions of its proposal. The BLM stated that it is “not possible to project the level of CO₂ emissions that burning the coal in the SGAC LBA tract would produce due to the uncertainties about what emission limits will be in place at that time or where and how the coal in the SGAC tract would be used after it is mined.” DEIS, 4-112. The BLM’s failure to consider the greenhouse gas emissions of the coal resources flaws every aspect of the DEIS and the decision making process. The BLM must prepare a revised DEIS that properly considers the greenhouse gas and global warming implications of the lease sale, prior to proceeding to the Final EIS. See CBD Comments.

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The DEIS Fails to Analyze the Observed and Projected Effects of Global Warming

Global warming represents the most significant and pervasive threat to the future of biodiversity worldwide, affecting both terrestrial and marine species. The periodic assessment reports issued by the United Nations Intergovernmental Panel on Climate Change (“IPCC”) serve as a useful barometer for the advancement of understanding surrounding global warming. The IPCC’s mission is to comprehensively and objectively assess the scientific, technical and socioeconomic information relevant to human-induced climate change, its potential impacts, and options for adaptation and mitigation (IPCC Mandate). The technical reports underlying these periodic assessments are a synthesis of the



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existing scientific and technical literature compiled by the world's leading climate change experts, representing the collective wisdom of thousands of scientists from around the world, including hundreds of academic and government researchers within the U.S. The reports represent the "best available science" addressing climate change and its impacts on the natural world.

The IPCC reports convincingly indicate that greenhouse gases, including carbon dioxide ("CO₂"), endanger public health, welfare, and the environment. The IPCC's fourth assessment report, issued in February 2007, determined that the evidence of warming global temperatures is "unequivocal" and that observed changes in temperatures since the mid-20th century have been "very likely" (>90% chance) caused by increases in anthropogenic greenhouse gas emissions. In addition, the largest growth in global greenhouse gas emissions between 1970 and 2004 has come from the energy supply sector (an increase of 145%) (IPCC).

Many of the public resources managed by the Department of the Interior are being harmed by global warming resulting from increased greenhouse gas emissions (see generally GAO, Climate Change). As stated by the U.S. Supreme Court last year, "[t]he harms associated with climate change are serious and well recognized." Massachusetts v. EPA, 127 S. Ct. 1438, 1455 (2007). These harms—already occurring worldwide—include "the global retreat of mountain glaciers, reduction in snow-cover extent, the earlier spring melting of rivers and lakes, [and] the accelerated rate of sea levels during the 20th century relative to the past few thousand years." Id. (quoting National Research Council, Climate Change: An Analysis of Some Key Questions, at 16). The impacts from global warming on species and ecosystems are not too uncertain to predict.

For example, one of the most immediate general effects of climate change on terrestrial plants and wildlife are shifts in geographical ranges, catalyzed by changes in the normal patterns of temperatures and humidity that generally determine such ranges (Thuiller 2007). As a result of warming temperatures, significant range shifts averaging 6.1 kilometers per decade towards the poles and an advancement of spring events by 2.3 days per decade have already occurred (Parmesan & Yohe 2003). Because many ecosystems and species cannot make such "shifts," global warming presents risks of widespread extinctions (Thomas et al. 2004; Thuiller 2007).

In addition to general impacts, different regions throughout the world will be increasingly affected in ways specific to those locations.

The Arctic region has been the most obvious early indicator of the effects of global warming on the planet. While the planet as a whole warmed approximately 1°F during the



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20th century, some regions of the Arctic experienced warming of 4-5°F since the 1950s alone, and the region continues to warm at rates approximately twice that in the rest of the world (ACIA 2004).¹ Most notably, the melting of Arctic sea ice due to global warming has occurred much more rapidly and on a scale that scientists believed would not happen for another half century. At the end of summer in 2007, the volume of Arctic sea ice was half what it was only four years ago, nearly 23 percent below the previous record low. (Borenstein 2007).

The rapid melting of the Arctic ice has grave repercussions for the many Arctic species that rely wholly or partially on the ice for feeding, nesting, breeding, sheltering, and other essential behavioral functions. The melting of Arctic sea ice caused by global warming directly threatens the polar bear, which is completely dependent on the ice for every aspect of its life cycle. Melting sea ice will shorten the time frame in which polar bears can hunt seals due to earlier ice break-up and later freeze-up dates, reduce availability of prey, increase distances bears need to swim because of melting ice, and increase bear-human conflicts as bears move into terrestrial and populated areas in search of food.

Additionally, the world's oceans, occupying 70 percent of the planet, are being profoundly affected by global warming, as primarily evidenced by warming temperatures and increasing acidification of the oceans (Rosenzweig 2007). Coral reefs have served as an early bellwether of these changes, and NMFS on May 9, 2006 determined two species—the elkhorn (*Acropora palmata*) and staghorn (*A. cervicornis*) corals—to be threatened, the first coral species to be given protection under the ESA. 71 Fed. Reg. 26,852.

In addition to the precipitous declines in staghorn and elkhorn coral populations as a result of global-warming inducted bleaching, global warming also adversely affects coral species by increasing the acidification of ocean waters (Hoegh-Guldberg 2007). Ocean acidification is especially driven by CO₂; as greater levels of CO₂ enter the ocean, it reacts with seawater to produce carbonic acid, which ultimately reduces the amount of carbonate available to the reefs, leading to decreased calcification and increased erosion. In a recent study, a team of researchers presented three scenarios based on the business-as-usual/alternative scenario approach, and found that even if CO₂ emissions leveled at 380 ppm, coral reefs worldwide would still undergo fundamental changes (Hoegh-Guldberg 2007). If carbon dioxide levels rise to double that of preindustrial levels under a business-as-usual approach, “[t]hese changes will reduce coral reef ecosystems to crumbling frameworks

¹ A phenomena known as the “Ice-Albedo feedback” is largely responsible for these disproportionate effects. Because the arctic ice has high albedo, meaning it reflects much more solar radiation than other sources, once that ice melts, the uncovered land and water absorbs more solar radiation, leading to a positive feedback loop and rising temperatures.



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with few calcareous corals...Under these conditions, reefs will become rapidly eroding rubble banks” (Hoegh-Guldberg 2007).

Like the rapidly accumulating evidence addressing the negative effects of global warming on coral reef species and the polar bear, new scientific information demonstrates that global warming is increasingly having negative effects throughout the western United States. The west has warmed more than any other area in the country outside of Alaska, with projections of future warming varying from 3 to 7°F, to as much as 14°F in the Southwest (Leung and Qian 2005; Overpeck 2005). As new scientific information developed since 1996 convincingly demonstrates, global warming is already affecting the West by causing wetter and warmer winters with reduced snowpacks and earlier springs with associated early-season melting of the already-reduced snowpack (Mote et al. 2005). In addition, many areas of the West are in the midst of the worst drought in hundreds of years, and researchers believe global warming could cause drought to become essentially permanent.

This combination of effects is already having real-world consequences for biological resources. For example, scientists identified high temperatures as one of the likely causes of a massive die-off of piñon and ponderosa trees across 3.5 million acres of Arizona and New Mexico (Breshears et al. 2005). In addition, less snowpack and earlier snowmelt have been correlated with increasing numbers of large forest fires in the west, as earlier snowmelt acts to dry out forest fuels (Westerling 2006).

The effects of global warming present heightened risks to species already imperiled by other causes, especially those with restricted ranges or highly specific ecological needs (Randall 2006). Climate change during the past 30 years has in fact already been implicated in one species-level extinction, and a potential mass extinction (an estimated 67 percent of 110 species) of *Atelopus*, a genus of amphibians endemic to the American tropics (Pounds et al. 1999; Pounds et al. 2006). If levels of greenhouse gases continue to rise unabated, newly-developed science indicates that extinction levels in the U.S. and worldwide would likely be catastrophic. As stated by James Hansen, senior scientist at Columbia University Earth Institute and Director of the NASA Goddard Institute for Space Studies:

In my opinion there is no significant doubt (probability >99%) that [] additional global warming of 2°C would push the Earth beyond the tipping point and cause dramatic climate impacts including eventual sea level rise of at least several meters, extermination of a substantial fraction of the animal and plant species on the planet, and major climate disruptions. Much remains to be learned before we can define these effects in detail, but these consequences are no longer speculative climate model results.



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(Hansen 2006). Echoing this assessment, a team of 18 scientists recently estimated that 15-37 percent of terrestrial species within sample regions covering approximately 20 percent of the Earth's surface would be "committed to extinction" by 2050 if greenhouse gas emissions continue rising on current trajectories (Thomas et al. 2004). If those percentages of loss are extrapolated to a planetary level, more than 1 million species could be driven extinct in the next fifty years (Thomas et al. 2004). Many ocean species will also suffer pronounced losses (Hunter 2007).

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The BLM is required under NEPA to analyze global warming impacts that result from its actions

In April 2007, the U.S. Supreme Court issued a decision that recognized the severity of the climate change crisis, and the U.S. Environmental Protection Agency's obligation to confront the problem. The Supreme Court held, in Massachusetts v. EPA, 127 S. Ct. 1438 (2007), that the "unambiguous" definition of "air pollutants" includes carbon dioxide and other greenhouse gases. This case was initiated by a dozen states and numerous environmental organizations, and the Supreme Court's ruling is widely viewed as a landmark recognition of the global warming crisis by the judiciary. The Court noted that the "[t]he harms associated with climate change are serious and well recognized." *Id.* at 1455. The Court also acknowledged "the enormity of the potential consequences associated with man-made climate change," and the contribution of carbon dioxide emissions to global warming. *Id.* at 1457-58. Given the Supreme Court's conclusion that, "[t]he harms associated with climate change are serious and well recognized," the federal government has a responsibility to take action to reduce it, even if such action may not completely reverse global warming. *Id.* at 1458. BLM is not exempt from that responsibility.

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Since 1990, 19 coal leases containing more than five billion tons of federal coal have been issued following competitive sealed-bid sales in the Powder River Basin. DEIS, 4-4. This mined coal will inevitably be used in coal-fired power plants. Coal-fired power plant emissions include carbon dioxide (CO₂), which is the principal anthropomorphic greenhouse gas. CO₂ emissions represent about 84 percent of the total U.S. greenhouse gas emissions. DEIS, 3-168. Of that 84 percent, estimated CO₂ emissions from the electric power sector totaled 2,343.9 million metric tons, or about 39.5 percent of total U.S. energy-related CO₂ emissions in 2006. See Massachusetts, 127 S. Ct. at 1446 ("A well documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related . . . It is therefore a species—the most important species—of a 'greenhouse gas.'").

The concentration of CO₂ in the Earth's atmosphere now exceeds 380 parts per million ("ppm"), more than 80 ppm greater than the maximum levels of at least the last



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740,000 years, and perhaps the last 20 million years (Hoegh-Guldberg et al 2007). Because coal-fired power plants are one of the two “largest and fastest growing” sources of carbon dioxide emissions, their greenhouse gas outputs “must be addressed to move emission trends off the Business-as-Usual path and onto something approximating the Alternative scenario” (Hansen 2006; EPA 2007:8) (emphasis added).

Greenhouses gases emissions are within the direct, indirect and cumulative effects that NEPA documents must analyze. 40 C.F.R. § 1508.8. Not only are increased greenhouse gas emissions “reasonably foreseeable” but so too are their climate consequences. 40 C.F.R. §§ 1508.7, 1508.8. As discussed previously, the overwhelming consensus of national and international scientific evidence supports the conclusion that the build-up of greenhouse gases in the atmosphere is contributing to global warming, and that the subsequent changes will adversely affect local, regional and global environments. “The DEIS should have disclosed and analyzed the greenhouse gas emissions from past, proposed, and estimated future coal production. The DEIS should also have examined other major sources of greenhouse gas emissions to provide an adequate overall description of cumulative impacts. The DEIS fails to do so.” CBD Comments.

Coal-fired power plants are a significant contributor to the generation of greenhouse gases, and consequently, to global warming. The BLM has a responsibility to examine not only the increase in greenhouse gases from the proposed leasing and development of the SGAC tract, but also the regional and global impacts of global warming on resources. The current DEIS neither discusses these impacts nor attempts to quantify them.

There is now growing scientific consensus that greenhouse gas emission reductions must begin within the next decade; otherwise, the planet will cross a “tipping point,” beyond which “it is virtually certain that there will be large-scale disastrous climate impacts for humans as well as for other inhabitants of the planet,” including “extermination of a substantial fraction of the animal and plant species on the planet” (Hansen 2006:15, 30). The impacts of climate change, which are exacerbated by coal leasing and development are much more than “reasonably foreseeable”—and the BLM must analyze them in the DEIS.

The DEIS Fails to Analyze the Alternatives to Coal Based Energy and the “No Action” Alternative

The DEIS correctly acknowledges that the demand for power is increasing in the U.S. and throughout the world. DEIS, 4-107. According to the North American Electric Reliability Council, peak demand for electricity in the U.S. is expected to double in the next 22 years. DEIS, 3-169 (citing Associated Press, 2007). There are methods of generating electricity that result in fewer greenhouse gas emissions than burning coal, including natural



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gas, nuclear, hydroelectric, solar, wind, and geothermal resources. DEIS, 4-107. According to the IPCC, “there is high agreement and much evidence that all stabilization levels can be achieved by deployment of a portfolio of technologies that are either currently available or expected to be commercialized in coming decades....” DEIS, 4-105. The existence of a viable but unexamined alternative renders an EIS inadequate. An agency must look at every reasonable alternative. Alaska Wilderness Recreation & Tourism Ass’n v. Morrison, 67 F.3d 723, 729 (9th Cir.1995)

NEPA mandates that federal agencies “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources.” 42 U.S.C. § 4332(2)(E). Yet the DEIS failed to consider alternative methods. NEPA “requires that alternatives ... be given full and meaningful consideration.” Bob Marshall Alliance v. Hodel, 852 F.2d 1223, 1229 (9th Cir. 1988). The BLM failed to meet NEPA’s requirements.

Climate change scientists have shown that imminent action is necessary to stabilize and reverse the rapid climate change already occurring. Regardless of what actions are taken to reduce greenhouse gas emissions, some level of global warming is already “in the pipeline,” because of past and current emissions. Scientists, however, have generally outlined two broad scenarios based on levels of future emissions: the “Business-as-Usual” scenario and the “Alternative” scenario. Under the alternative scenario, which would yield global warming of less than 1°C in the 21st century, carbon dioxide emissions must moderately decline before 2050 and then have a subsequent steeper decline in order that atmospheric carbon dioxide peaks at 475 ppm in 2100 and declines slowly thereafter. Under the business-as-usual scenario, if emissions continue to rise 2 percent a year, the same rate of increase as the first five years of the 21st century, there will be at least 2°C of global warming by 2100. If warming approaches these levels, the Earth will be a “different planet,” and “it is virtually certain that there will be large-scale disastrous climate impacts for humans as well as for other inhabitants of the planet” (Hansen 2006).

The window of opportunity to implement the alternative scenario is exceedingly narrow. If carbon dioxide emissions continue to rise at 2 percent per year for another decade, “the 35% increase [] (between 2000 and 2015) will make it implausible to achieve the Alternative scenario”). As the same time, “the tripwire between keeping global warming less than 1°C, as opposed to having a warming that approaches the range 2-3°C, may depend upon a relatively small difference in human-made direct forcings” (Hansen 2006).

The BLM was required to compare all of the environmental impacts from the coal lease, including the utilization of the anticipated coal resources, to the environmental impacts of not using them and instead relying on alternative energy sources. NEPA requires



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disclosure to facilitate better decision making, and allow the public and decision makers to change harmful behavior. CBD Comments. The BLM’s attempt to discount the impact of the greenhouse gas emissions from the proposed coal production, “has prevented this process from functioning and attempted to turn its assumption about the continuing use of fossil fuels into a self-fulfilling prophecy.” *Id.* “This violation cannot be countenanced in light of the severe environmental consequences of continued fossil fuel use.” *Id.*

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The DEIS Fails to Analyze the Impacts of the Coal Lease on Threatened and Endangered Species

In both generalities and particulars, extensive new scientific information strongly demonstrates that global warming will adversely affect and jeopardize the continued existence of many threatened and endangered species.

Statutory Background

Congress enacted the ESA, in part, to provide a “means whereby the ecosystems upon which endangered species and threatened species depend may be conserved...[and] a program for the conservation of such endangered species and threatened species...” 16 U.S.C. § 1531(b). The ESA “is the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 180 (1978). The Supreme Court’s review of the ESA’s “language, history, and structure” convinced the Court “beyond a doubt” that “Congress intended endangered species to be afforded the highest of priorities.” *Id.* at 174. As the Court noted, “the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost.” *Id.* at 184.

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Under section 7(a)(2) of the ESA, every federal agency “shall...insure that any action authorized, funded, or carried out by such agency (“action agency”) is not likely to jeopardize the continued existence of the endangered or threatened species or result in the destruction or adverse modification of habitat of such species...determined...to be critical...” 16 U.S.C. § 1536(a)(2) (Section 7 consultation). Agency “action” is defined in the ESA’s implementing regulations to include “all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal agencies in the United States or upon the high seas. Examples include, but are not limited to: (a) actions intended to conserve listed species or their habitat; (b) the promulgation of regulations; (c) the granting of licenses, contracts, leases, easements, rights-of-way, permits, or grants-in-aid; or (d) actions directly or indirectly causing modifications to the land, water, or air.” 50 C.F.R. § 402.02. (emphasis added).



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The South Gillette Area Coal Lease “Affects” ESA-Listed Species

The scientific community has made enormous strides in its understanding of the nature and scope of anthropogenic global warming, as well as the enormous risks it poses to wildlife, birds, fish, and plants—especially those species that are already imperiled. Numerous species will be affected by global warming. Species that are already imperiled by habitat destruction and fragmentation, pollution, over-harvesting and other factors will be especially prone to extinction as a result of global warming (Hannah et al. 2005:3-14). Therefore, the greenhouse gas emissions of the South Gillette Area Coal Lease “may affect” such species, triggering the consultation requirement.

More pronounced global warming effects in the western U.S. pose particular risks to the region’s many threatened and endangered species. For example, the “sky island” mountains of Arizona, so named because they contain “islands” of forested habitat rising above a “sea” of desert and grasslands, contain at least 28 threatened or endangered species listed under the ESA. Because many of the mountain ranges are isolated from one another, their forested expanses contain a high proportion of endemic wildlife with highly restricted ranges. The U.S. Forest Service, which administers most of the land within these ranges, recently concluded that rising temperatures associated with global warming had adverse impacts on the sky islands, stating that its plants and wildlife “have not evolved to tolerate these new conditions” (Egan 2007). For species that exist at the higher elevations of these ranges, there may be no opportunity to adapt; as temperatures rise, their habitat will simply disappear. As stated by one prominent scientist, “[a]s the climate warms, these species on top of the sky islands are literally getting pushed off into space.” Or in the words of another researcher, “I honestly believe that we are standing at the edge of a very, very large mass extinction, and top-of-mountain species are going to be the first to go” (Erickson 2005).

The highly imperiled Mt. Graham red squirrel, listed as endangered, vividly illustrates this risk. Endemic to a sky island range known as the Pinalenños, its population numbers have already been dramatically reduced through historic habitat loss. Beginning in 1996, the species’ only forest habitat has been altered through a series of insect outbreaks driven by warmer and drier conditions caused by global warming (Koprowski et al. 2005). As noted by scientists studying the species, “these impacts are expected to increase with current trends in global climate change” (Koprowski et al. 2005: 491; Ayres and Lombardero 2000). If those trends do continue, “[i]n a sense, the topmost community [of the Pinalenños] (the spruce-fir community [will] literally be[] burned up into the sky,” causing the Mt. Graham red squirrel to go extinct (Warshall 2007).²



² Global warming and, in particular, longer drought, is also predicted to negatively impact another squirrel species endemic to the eastern U.S., the Delmarva fox squirrel (Hilderbrand et al. 2007).
**Comments on the South Gillette Area Coal Lease Application
Draft Environmental Impact Statement**



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The adverse effects of global warming on listed species within the western U.S. are by no means limited to mountaintop species, however. For example, global warming has been identified as a driving factor in the extirpation of thirty of the eighty peninsular bighorn sheep populations in California, as researchers have correlated those extirpations with those places where the climate has been the warmest and driest (Epps et al. 2004). In addition, decreasing snowfall associated with global warming has been found to negatively affect the Canada lynx, through decreased prey availability and decreased competitive advantage over other carnivores (Carroll 2006).

BLM is Violating Section 7 the ESA

Section 7 of the ESA requires federal agencies to insure that any “action” they authorize, fund, or carry out is not likely to “jeopardize the continued existence of any endangered [] or threatened species,” or result in the destruction or adverse modification of critical habitats. 16 U.S.C. § 1536(a)(2). As noted in TVA v. Hill, “this language admits of no exception. 437 U.S. 153, 173. The applicable regulations direct agencies, in considering whether formal consultation is required, “to determine whether any action may affect listed species or critical habitat.” 50 C.F.R. § 402.14(a). A later portion of the same regulation confirms that agencies must consider the “effects of the action as a whole.” 50 C.F.R. § 402.14(c). The “[e]ffects of the action” include the “direct and indirect effects of an action on the species or critical habitat,” and “[i]ndirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.” 50 C.F.R. § 402.02.

Despite increasing recognition that global warming poses grave threats to both human society and the natural world, and the fact that the mining and burning of coal is one of the paramount contributors to such warming, the BLM continues to approve new coal leases, which will in turn feed new coal-fired power plants. Coal mining emissions, and their contribution to global warming and species endangerment, are thus an “effect” of the BLM coal leasing program triggering a duty to initiate formal consultation. The BLM and Services are currently in violation of section 7, as they have failed to commence formal consultation.

Under these regulations, federal agencies are required to consider the “total impact” of a proposed project on listed species when consulting under section 7. Riverside Irrigation Dist. v. Andrews, 758 F.2d 508, 512 (10th Cir. 1985); North Slope Borough v. Andrus, 642 F.2d 589, 608 (D.C. Cir. 1980) (agency must look at “all ramifications” of its action). By requiring federal action agencies to broadly assess the effects of their proposed actions, and to consider such effects in the context of independent, baseline harms already occurring to a species, ESA regulations ensure that the section 7 consultation process is not conducted “in a vacuum,” and that agencies will “not take action that will tip the species from a state of

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precarious survival into a state of likely extinction.” NWF v. NMFS, 481 F. 3d 1224 (9th Cir. 2007).

By defining “effects of an action” broadly, the ESA regulations do not distinguish between direct and indirect effects—both must be considered during consultation. Indeed, the centrality of indirect effects analysis to the consultation process is highlighted throughout the section 7 regulations. In addition to “effects of the action” encompassing both “direct and indirect effects,” the regulatory definition of “action” (actions include those “indirectly causing modifications to the land, water, or air”), “action area,” (“all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action”) and “destruction or adverse modification” of critical habitat (“a direct or indirect alteration that appreciably diminishes the value of critical habitat”) all explicitly include indirect effects. 50 C.F.R. § 402.02 (emphasis added); see also Village of False Pass v. Clark, 733 F.2d 605, 611 (9th Cir. 1984) (consultation must insure that direct and indirect effects of agency action will not jeopardize listed species); Connor v. Burford, 848 F.2d 1441, 1452 (9th Cir. 1988) (section 7 requires preparation of biological opinion analyzing all phases of agency action).

In determining what constitutes an indirect effect, the regulations demand only that they be “reasonably certain to occur,” 50 C.F.R. § 402.02, a standard that is consistent with normal tests of proximate causation and foreseeability. While “[p]roximate causation is not a concept susceptible of precise definition . . . It is easy enough [] to identify the extremes.” Babbitt v. Sweet Home Chapter of Cmty. for a Great Ore., 515 U.S. 687, 713 (O’ Connor, J., concurring). As such, questions of causation “depend[] to a great extent on considerations of the fairness of imposing liability for remote consequences . . . [A]t the least, [] proximate cause principles inject a foreseeability element into the statute.” Id.

Under even the most rigid of formulations, the contribution of coal-burning power plants on global warming are reasonably foreseeable indirect effects of the BLM coal leasing program under ESA regulations.³ The causal chain at issue is, in fact, short and unattenuated: the BLM permits the lease of coal, the Office of Surface Mining (“OSM”) approves the mining of coal under its coal regulatory program, and the mined coal is then utilized at coal-fired generating stations that comprise the largest source of CO₂ in the country. The greenhouse gas emissions and their contribution to global warming—which pose greater risks of mass extinctions than any other activity in human history—are consequently a reasonably foreseeable consequence of the BLM’s action. C.f. Friends of the

³ As noted above, the actual process of coal mining, and the handling and transportation of the mined coal, both result in significant greenhouse gas emissions, particularly methane. Thus, global warming is also a direct effect of the OSM coal mining program.



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Earth v. Watson, 2005 U.S. Dist. LEXIS 42335 (N.D. Cal. Aug. 23, 2005) (finding causation for standing purposes in action against agencies that provide loans, loan guarantees, and insurance to U.S. companies that invest in large international energy projects which contribute to global warming). It is equally clear that the mining and burning of coal within the U.S., by contributing to global warming, poses threats to listed species far beyond the regulation's *de minimis* "may affect" threshold. See 51 Fed. Reg. 19,926, 19,949 (June 3, 1986) (section 7 rulemaking in which FWS and NMFS interpreted the "may affect" threshold for initiation and reinitiation of consultation as a very low bar, finding that "any possible effect, whether beneficial, benign, adverse, or of an undetermined character, triggers the formal consultation requirement.") (emphasis added). Consequently, greenhouse gas emissions from coal-fired power plants, and their effect on global warming and listed species, are an indirect effect of the BLM's coal mining program compelling formal consultation.

In addition to the requirement to consider greenhouse gas emissions as an indirect effect of the coal program, the ESA regulations create an independent duty on the BLM to consider coal-fired power plant emissions as an interrelated and interdependent action. "The test for interrelatedness or interdependentness is 'but for' causation: but for the federal project, these activities would not occur." Sierra Club v. Marsh, 816 F. 2d 1376, 1387 (9th Cir. 1987) (quoting 51 Fed. Reg. 19,932 (1986)). Here, U.S. coal-fired power plants would not and could not operate without the domestic coal mining program possible through coal leases administered by the BLM. In recent years, approximately 90 percent of coal mined in the U.S. has been utilized at domestic power plants, while importation has always "represented a negligible share of U.S. coal," and has not risen above 3.5 percent of domestic consumption for the past 35 years (EIA 2006:17; EIA 2007:3). Because these coal-fired power plants are interrelated to, and interrelated with the BLM coal leasing program, their effects on threatened and endangered species present an additional and independent basis compelling the BLM to initiate consultation.

Conclusion

Although the BLM does not authorize mining by issuing a lease for federal coal, it is a logical consequence of issuing a maintenance lease to an existing mine that coal will be mined. Although the use of the coal after it is mined is not determined at the time of leasing, almost all of the coal that is currently being mined in the Wyoming Powder River Basin is being used by coal-fired power plants to generate electricity. Therefore, and based on the aforementioned deficiencies, we believe the BLM must revise the DEIS and update it to include an accurate, current, and complete discussion of the impacts of greenhouse gas emissions from the lease sale, of the impacts of global warming on the resources affected, and of impacts on listed species and non-listed species.



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All references cited in the text are listed in the Literature Cited section below. We request that the BLM carefully review and consider these important references. A CD with the scientific studies will be provided at a later date and under a different cover. They are also part of the administrative record for this rulemaking.

Thank you very much for your consideration of these comments. Please contact me at (202) 682-9400 or at the address on this letterhead if you have any questions or concerns.

Sincerely,

Erin Lieberman
Legal Fellow

Literature Cited



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**Comments on the South Gillette Area Coal Lease Application
Draft Environmental Impact Statement**



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Response to Comment Letter 4: Defenders of Wildlife

Comment Response 4A: Ongoing scientific research has identified the potential impacts of anthropogenic greenhouse gas emissions, and changes in biologic carbon sequestration on the global climate. Through complex interactions on a regional and global scale, these changes cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat radiated by the earth back into space. Although natural GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused CO_{2e} concentrations to increase dramatically and are likely to contribute to overall global climatic changes.

Tools necessary to quantify incremental climatic changes associated with those factors for specific activities like mining of an LBA tract are presently unavailable. As a consequence, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Therefore climate change analysis in this EIS is limited to accounting and disclosing factors that contribute to climate change. To the extent that emission data were available or could be inferred from representative type data, we have identified potential GHG emissions that could result from development of the proposed LBAs, as well as emissions that will result from selection of the No Action Alternative.

The site-specific impacts analyzed in this EIS are based on the assumption that if LBA tracts are offered for competitive lease, a lease would be issued, and mining would be permitted. We further assume that the applicant would be the lessee and that the lease would be permitted as an extension of their current mining operations. In Chapter 3 (3.18.2), Affected Environment and Environmental Consequences, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative (please see table 3-19 in the DEIS).

In Chapter 4, Cumulative Environmental Consequences, the contribution of the site-specific alternatives to cumulative effects on the environment is evaluated. To do this, it is assumed that coal mining will proceed in accordance with permit conditions. We further assume that this coal will be sold to coal users in response to forecasts of demand for this coal. Historically these users have been electric utilities in the United States, although there are currently some sales outside the U.S. This coal market is open and competitive and users can buy from the most cost effective suppliers that meet their needs.

In Section 4.2.14.1 in the DEIS, we estimated the amount of GHG emissions that could be attributed to coal production that could result from leasing of the proposed LBAs, as well as from the forecast coal production from all coal mines in the Wyoming PRB. This information is included in Chapter 4 (4.2.14.1). This was done by relating the portion of coal mined to the total emission of

GHG from all coal mined in the U.S. We assumed that all PRB coal was used for coal fired electric generation as part of the total U.S. use of coal for electric generation. This gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs, and for forecast total PRB coal production. Specific levels of significance have not yet been established for GHG emissions. Given the state of the science, it is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach conclusions as to the magnitude or significance of the emissions on climate change. The impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions, land use management practices, and the albedo effect. The EIS does provide a meaningful context and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

Comment Response 4B: Climatic change analyses are comprised of several factors, including GHG emissions, land use management practices, and the albedo effect. We have identified the effects of recent global climate change on the environment in the area of the proposed action. We have assumed that existing land and resource conditions within the analysis area have been and will continue to be affected by climate change under all alternatives. Existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. We have referenced national and regional data that is available, most recent being the report, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States* (U.S. Climate Change Science Program 2008).

Comment Response 4C: Again, we direct you to the above referenced analysis in Sections 3.18 and 4.2.14 of the DEIS. In the Chapter 3 section, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative. We have added a reported GHG emission level from all coal mining in the U.S. as a frame of reference in the FEIS.

The analysis in Chapter 4 gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs, and for forecast total PRB coal production. As noted in that analysis, specific levels of significance have not yet been established for GHG emissions. Given the state of the science, it is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach conclusions as to the magnitude or significance of the emissions on climate change. The impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions, land use management practices, and the albedo effect. The EIS does provide a meaningful context

and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

Comment Response 4D: This EIS addresses a full range of alternatives to the proposed action, a lease by application submitted by the lease applicant. The range includes an alternative which would represent all lands that include coal reserves that are comparable to those applied for, which may be efficiently recovered with the LBA, which may enhance competitive interest in the tract, and which could be bypassed if not leased. On the other end of the range is the No Action Alternative. The scope and affect of the decision on this proposed action is reflected within this range of alternatives.

The BLM is a multiple use land management agency that manages the federal coal reserves under the predominantly private land surface in the Gillette area of the Powder River Basin. In the land area covered by these LBAs, only 3% of the surface ownership is federal land. Although there are many wind and solar resources that can be used for energy development, the BLM does not have authority over private land surface use and surface development. The BLM neither permits for the surface disturbance nor for the mining operations in coal mining operations. Therefore, the reasonable alternative options available for BLM to review in this EIS are leasing alternatives exploring the lease size, and shape, and the No Action Alternative where leasing one or more of these LBAs does not occur.

As discussed in the DEIS, if this coal is leased, and if mining is permitted, coal sales would likely be into the steam coal open market which is competitive and where users can buy from the most cost effective suppliers that meet their needs. This market is influenced by electric demand. The DEIS contains an analysis of the likely portfolio of electric supply and the relative proportion expected to be met by coal fired electric generation. Ongoing scientific research has identified the potential impacts of GHG emissions on the global climate. The addition of non-carbon based electric generation sources could reduce GHG emissions, which may influence the electric supply portfolio. Further, the addition of alternate sources of electric generation would conserve carbon fuels, which are not renewable in the short term, and would provide a broader portfolio of electric sources, likely enhancing national security and the national economy. This EIS estimates likely long term electric generation portfolios, assuming some constraint on carbon based fuels. However the specific environmental effects of the variety of alternative electric generation technologies are not in the scope of decisions on the proposed actions for which this EIS was done. These technologies would be evaluated under NEPA as they are proposed to be permitted and built.

Comment Response 4E: The USFWS is responsible for the administration of the Endangered Species Act. This is the lead agency that manages threatened and endangered species and consults, through the Section 7 process, with

other agencies in how proposed projects might impact and affect listed species. All federal agencies have a responsibility under Section 7 (a)(1) of the ESA to conserve federally listed threatened and endangered species. BLM is partnered with USFWS in fulfilling our Section 7 consultation obligations and responsibilities. Biological assessments (Appendix E) and the BLM sensitive species evaluation (Appendix F) for each proposed LBA have been prepared and provided to USFWS for their review. We continue to work with USFWS in order to address concerns and provide any additional information needs. The EIS has been revised based on comments and oral discussions with the USFWS. Section 7 consultation will be completed before a decision is made on each LBA. It is the mandate and responsibility of USFWS to provide guidance to federal agencies in how to avoid adverse impacts to protected species and habitats. Comments that we received from USFWS on December 19, 2008 indicated that they felt the DEIS was well written and, with some additional specific information, effectively addressed BLM sensitive species, threatened, and endangered species and migratory bird issues.

USFWS is currently monitoring trust resources to see how they are affected by changing climate. The USFWS endangered species program is working to develop interim guidance regarding relevant aspects of ESA implementation involving climate change with a focus on how to evaluate and include the best available scientific information on climate change information in the decision making process. BLM will continue to coordinate and consult with USFWS on plant and animal species and follow direction from the USFWS on the handling of threatened and endangered species on BLM projects.

One of the contributors linked to climate change is greenhouse gas emission. As discussed in our response to your earlier comments, the DEIS has estimated GHG emissions. Although the BLM does not authorize or permit either surface disturbance or mining, mining is addressed as it is a logical consequence of leasing. The WDEQ and OSM handle the permitting for coal operations. Again, we direct you to the above referenced analysis in sections 3.18 and 4.2.14 of the DEIS. In the Chapter 3 section, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative. We have added a reported GHG emission level from all coal mining in the US, as a frame of reference in the FEIS.

The analysis in Chapter 4 gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs, and for forecast total PRB coal production. As noted in that analysis, specific levels of significance have not yet been established for GHG emissions. Given the state of the science, it is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach conclusions as to the magnitude or significance of the emissions on climate change. The impacts of climate change represent the

cumulative aggregation of all worldwide GHG emissions, land use management practices, and the albedo effect. This EIS does provide a meaningful context and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

Kenneth Duvall
9498 State Hwy. 59 S
HCR 83
Gillette, WY 82718

December 24, 2008

Teresa Johnson
Bureau of Land Management, High Plains District
2987 Prospector Drive
Casper, WY 82604

Dear Ms. Johnson:

Please accept this letter as comments to the Draft Environmental Impact Statement for the South Gillette Area Coal Lease Applications dated October 2008 ("EIS"). Initially, please let me state that the EIS appears to be written to favor coal mine development and minimizes impact to the environment, the citizens affected by the coal mine, wildlife, and other industries. In fact, unless I missed it, the report does not address the devastation to the surface owner or to the historical agriculture operations which has historically been Wyoming's primary industry.

} A

The EIS fails to address the income which mineral owners have been and will be deprived as a result of coal mining activity pertaining to the escape of methane gas and significant time delay in producing conventional oil and gas. Additionally, the EIS fails to address enforcement problems by the BLM and the failure of the BLM to require coal mines to actively and timely reclaim the mined areas in order to allow mineral owners the right to develop conventional oil and gas reserves below coal seams. Because the coal mine companies are not required to actively and timely reclaim mined areas, 25 to 35 years can lapse before a mineral owner can benefit from the oil and gas reserves beneath coal seams. It seems contrary to fundamental citizen rights that the interest of the federal government are placed above the interest of individual citizens. It would seem equitable that mineral owners are given a period of years to explore for and develop oil and gas reserves located under coal seams prior to coal mine production. Once the oil and gas reserves are depleted, then coal mining activities can commence with no financial detriments to mineral owners. Similarly, while the conventional oil and gas reserves are being developed, coalbed methane development can also occur rather than having such resources lost forever as a result of coal mine activity.

} B

With regard to the level of conventional oil and gas production as stated in the EIS, at first reading, the EIS places at the forefront the fact that current oil production is from old fields and the production is declining. Buried within the paragraph is an acknowledgment that production is expected to increase in the Powder River Basin. More emphasis should have been placed on the fact that production is increasing, new fields are being developed, and new technology is being implemented to recover oil and gas reserves. The report also fails to address the number of active, producing wells that are plugged and abandoned due to coal mine activities. Again, the practice of plugging and abandoning in order to advance a coal mine seems contrary to a citizen's right to protect property interests. It is no secret that large corporate mining companies "buy out" oil and gas operators in order to plug wells depriving mineral owners of income and property rights.

C

In general, there has historically been conflict between surface coal mining and the development of oil and gas reserves. Obviously, both industries require use of the earth's surface for production. It would seem that in order to balance the rights of citizens and property owners against the federal government, an emphasis should be placed on and a priority given to which ever industry can impact the surface least and which ever industry can recover the natural resources in the least amount of time. In other words, if the oil and gas industry can disturb only a small portion of the surface and recover most of the oil and gas reserves in 10 to 20 years, then the oil and gas industry should be given priority for such mineral extraction over a coal mine which will destroy the entire surface and take 20 to 30 years to restore the property back to its natural state.

D

The Bureau of Land Management has an obligation and duty to protect the environment, manage natural resources to the greatest benefit of all, preserve historical sites, and other such preservation activities. In addition, the Bureau of Land Management must be a "watch dog" over big corporations that seek only to profit from the earth's natural resources. This "watch dog" duty must include an eye toward protecting individual citizens, their property rights, and obtaining the greatest gain from mineral development. The greatest gain would be developing oil and gas first, then coal. The EIS should address this issue.

Because there seems to be a demand for clean coal initiatives, coal to liquids development and other environmental initiatives pertaining to our country's natural resources, it would seem that placing coal mine development on hold for a period of years makes sense to allow companies and organizations to develop methods which will benefit our environment in the long run. These would include methods to efficiently and cost effectively burn coal for power production in a clean and environmentally safe manner and utilize coal to produce hydrogen as a clean energy source. Perhaps in the process of creating clean fuel initiatives, methods can be developed to ensure that air quality is protected in the mining process. Currently, the dust and emissions created by the mining and blasting activities of a coal mine are detrimental to citizens living in the vicinity of a coal mine.

E

With all due respect, the EIS was obviously prepared with a slant towards coal mine development versus responsibly using the land for the greatest good of all natural resource development. The EIS should also address the impact and destruction of the surface as it relates to the surface owner.

} E

Sincerely,

Kenneth Duvall, Karen Duvall & Kenna Lou Duvall

**Response to Comment Letter 5: Kenneth Duvall, Karen Duvall, and
Kenna Lou Duvall**

Comment Response 5A: The EIS addresses impacts of the proposed action and alternatives to existing agricultural operations, as well as other land uses that exist (see sections 3.11 and 4.2.10). The BLM does not lease coal under lands where the surface is private without the consent of the surface owner, if that surface owner is qualified (43CFR3400.0-5(gg)). Often the applicant is the surface owner. In situations where the applicant is not the surface owner, and the surface owner is qualified, BLM cannot offer a lease unless the surface owner has filed consent with the BLM.

Comment Response 5B: The DEIS addresses the oil and gas activity that exists in the area of the proposed LBAs. Mineral owners have the right to develop mineral resources subject to the laws and regulations of the state of Wyoming. Our policies promote the optimum development of oil and gas resources in the coal seams prior to mining, and provide royalty incentives in areas permitted for coal mining, or areas expected to be leased for coal. BLM does not restrict the development of private or state oil and gas resources. Mining activities are long term, and publicly permitted, so that mineral developers can assess the economic feasibility of drilling and producing for predictable periods in advance of mining.

BLM does not enforce reclamation of mined lands in Wyoming. That is under the authority of the WDEQ/LQD. We are unaware of any problems with the timeliness of reclamation.

Comment Response 5C: No conventional gas wells have been completed within the four LBA tract study areas since 1997. Oil and gas production in the PRB has declined sharply since 2000. As stated in the EIS, analyses indicate that most of the recoverable conventional oil and gas and CBNG resources on the LBA tracts have been extracted by the existing wells. There are currently 18 wells capable of producing oil or conventional gas located on the four-tract study area. Of the 18 wells, 13 are considered to have recoverable reserves using in-place recovery methods. While it is true that new fields are being discovered in the PRB, there is no indication that these new fields will be discovered on the four LBA tracts or reverse the downward trend of oil and gas production. Appendix G contains further information on conventional oil and gas.

Coal mining companies will need to attempt to come to an agreement with oil and gas operators to plug wells prior to mining through the well bore. If such an agreement is reached, production may be able to be reestablished after mine through or the well may be redrilled if reserves are sufficient to justify the cost. These possibilities would be addressed in the terms of an agreement. BLM is

not a party to these types of agreements, and we are unsure of a mineral owner's involvement and legal recourse in such agreements.

Comment Response 5D: The BLM policy advocates optimizing the recovery of both coal, and oil and gas reserves. The EIS includes a substantial discussion of the impacts to oil and gas operations as a result of mining activity. Within Section 3.3.2 of the EIS is a discussion the current activity and expected impact of each alternative for the four proposed LBAs. In particular, Section 3.3.2.3 discusses the mechanisms in place that can be used to facilitate the recovery of both conventional oil and gas and CBNG resources prior to mining. The time between the leasing of the LBA tracts, should they be offered and awarded, and the time of disturbance from coal operations is sufficient that some conventional oil and gas operations may continue until they are depleted or the operation becomes economically unproductive.

Comment Response 5E: The proposed actions before the BLM are four leasing actions to maintain the production of four operating mines. As noted in the analysis, particularly the No Action Alternative, a decision to not offer these leases will not stop mining in the short term. Mining would continue on the adjacent permitted leases operated by these four mines.

Coal mining is permitted under the authority of OSM and WDEQ. For dust and emissions created by the mining operations, please see Section 4.2.3., Section 3.18.2 (Greenhouse Gas Emissions), and Section 4.2.14.1 (Global Climate Change and Greenhouse Gas Emissions). There will be no leases offered where qualified surface owner consent has not been obtained.



NAME: Brad Mohrmann
ORGANIZATION: Sierra Club
ADDRESS: 45 E. Loucks
CITY/STATE/ZIP: Sheridan, WY 82801

December 22, 2008

Comments on the South Gillette Area EIS

I am submitting comments on behalf of the Sierra Club. Sierra Club has over 1.3 million supporters and members with approximately 1000 members in Wyoming. The Sierra Club has members who live and recreate in the areas that would be impacted by the South Gillette Area Coal Lease Applications. Sierra Club's goals are to ensure that citizens have safe, healthy communities in which to live, find smart energy solutions to combat global warming, and protect America's wild places.

Air Quality Concerns

Air quality concerns are a very real problem for areas around the proposed mine expansions. Particulate matter is of special concern. The BLM should work to address air quality issues. Campbell County is among one of the worst counties in the nation for PM 2.5 and PM 10 emission levels. Nitrogen oxide and sulfur dioxide emissions are also elevated in the area. The BLM needs to address these serious health concerns when deciding to lease more land to development. Studies have shown that even low levels of PM 2.5 can lead to premature death along with other serious health problems. There are no safe levels of particulate matter. Expanding all four mines will only compound this problem for years to come. The health of citizens in Campbell County should be taken seriously. The BLM should work in conjunction with the Wyoming Department of Health and the US Department of Health and Human Services in order to assess the health risks on local communities from expanded coal mining operations.



A

Water Resources Concerns

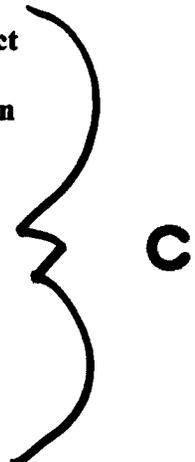
In an area with scarce water resources we ask that the BLM take into account the impacts on the ranching community. With expanded mining operations water resources will continue to be stretched thin putting a strain on the local ranchers who depend on that water for their operations. Climate change will make water increasingly scarce in the future.



B

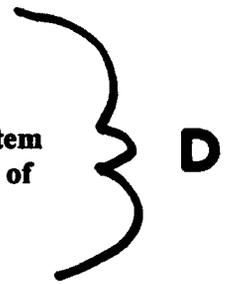
Climate Change Concerns and expansion need

The BLM should take future climate change legislation into account. President-elect Obama has stated his desire to make fighting climate change a priority. New legislation would likely put limits on CO2 emissions making coal less desirable as an energy source. Mine expansions should be held off until it is clear what future legislation will require. As the country moves to find more efficient measures and demands more renewable, clean energy expanding coal mining in the region may not be the best choice for this area. These mine expansions include approximately 12,000 acres and 800 million tons of coal. The environmental impacts of these expansions would be immense. Many states are adopting renewable energy portfolios and pushing to reduce their dependence on coal-fired power generation. Expansion on this scale may not be needed. The BLM needs to do a detailed assessment of current coal reserves to determine need for these expansions.



Reclamation

Reclamation should be taken very seriously. No new mine expansions should be allowed until all existing reclamation projects are complete. Currently lands in Wyoming are being reclaimed at a 3 to 1 ratio. The BLM needs to address this growing divide. Reclamation is extremely important for the health of our ecosystem and needs to be analyzed and addressed. Poor reclamation can lead to a number of problems including loss of habitat, decrease in wildlife diversity, and increased invasive weeds.



Sage Grouse

Sage grouse numbers have been in alarming decline in recent decades. Energy development from coal and coalbed methane has had adverse affects on sage grouse populations. Sage grouse leks have been indentified in the areas of the lease expansions. Great care must be taken by the BLM to make certain that sage grouse populations, habitat, and leks are protected. Surface mining effectively takes away possible sagebrush habitat for the sage grouse. The nutrients the sage brush need are depleted in topsoil removed for strip mining. This makes it difficult for sage brush to re-establish during the reclamation process. The loss of sage brush will make it extremely unlikely that sage grouse numbers will recover even after mining operations are complete. This loss of sage brush will also open land to invasive weeds that could have large impacts on surrounding ranchland. This habitat needs to be protected. These mine expansions will have negative impacts on sage grouse especially considering that mine reclamation is not on par with new development. We are removing habitat without taken measures to mitigate this loss. Noise and commotion from mining operations will also negatively impact sage grouse activities. All of the development in the area will have a cumulative negative impact on the sage grouse.



Comment Period

A major concern is that of the comment period itself. More time should be given to allow involvement from citizens. As well as more time, the BLM should avoid comment periods between Thanksgiving and the Christmas/New Year season. Numerous projects have comment periods during this time. Many citizens who would normally get involved in the process will miss the opportunity due to time and family constraints brought on by the holiday season. This time of the year should be avoided for the purpose of public comments. A democracy only works when citizens are able to take part in the process. Every opportunity should be given to make sure citizens get that opportunity.



F

Cumulative Impacts

These four mine expansions are not the only current or planned development in the area. BLM needs to take this into consideration. The industrial development in the Powder River Basin has reached an alarming rate. This current level of development is not sustainable. When viewed as part of a whole, as opposed to a stand alone development, it becomes clear that these mine expansions will just add to the current environmental problems in the Powder River Basin. Water and air quality, citizen health, loss of public land access, loss of habitat and habitat fragmentation, as well as a loss of the scenic value that many citizens of Wyoming have come to love will only get worse as a result of expanded mining operations.



G

The BLM's Buffalo Resource Management Plan Revision is in beginning stages and it would be beneficial to allow a new management plan to be worked out before committing to mine expansions. Sierra Club asks that the BLM not accept these coal mine expansions. It is not in our nation's best interest to continue using coal as an energy source. The health of our citizens and the health of our environment are at risk from the continued use of coal.

Sincerely,

Brad Mohrmann

**Brad Mohrmann
45 E. Loucks
Sheridan, WY 82801
(307) 672-0425
brad.mohrmann@sierraclub.org**

Response to Comment Letter 6: Sierra Club

Comment Response 6A: Air pollution is controlled by state and federal air quality regulations and standards established under the Clean Air Act and amendments. State implementation plans are in place to ensure that proposed actions like coal mining comply with all associated air quality regulations and criteria. The WAAQS for the PM₁₀ annual and the SO_x annual and 24-hour levels are more stringent than the NAAQS and are enforced by the WDEQ/AQD.

As stated in Section 3.4.2.3 of the EIS, WDEQ/AQD has developed a Natural Events Action Plan for the coal mines of the Powder River Basin. The plan, based on EPA Natural Event Policy guidance, identifies potential control measures for protecting public health and minimizing exceedances of the PM₁₀ NAAQS.

All mines are required to conduct long-term air quality modeling to show that their proposed operations comply with the National and Wyoming ambient air quality standards. Please see Section 3.4.2.3 to review air quality mitigation measures that WDEQ/AQD implemented in order to prevent exceedances of the NAAQS and WAAQS by surface coal mines.

According to recorded data collected from air quality monitors in the field, the four mines in the South Gillette area comply with the current ambient air quality standards for PM_{2.5} and NO₂. To date, there have been two reports of public exposure related to the Caballo Mine. Text in Section 3.4.3.1.1 has been revised to include updated discussions. NO₂ emissions have been monitored near these mines since 2002 (Table 3-8). The maximum annual NO₂ concentration measured at these mines ranged from 4 to 17 ug/m³, as compared to the NAAQS of 100 ug/m³.

The WDEQ/AQD coal mining permit process requires air quality modeling of the primary air pollutants (PM₁₀ and NO₂). If the four LBAs are leased, it is not anticipated this would cause any exceedances of state or annual federal air quality standards. If exceedances do occur, they will be documented, analyzed, and acted upon accordingly by the WDEQ.

Cumulative impacts to air quality are analyzed in Section 4.2.3. In this section the effect of foreseeable development in the PRB, added to the impacts of the continued operation of the four South Gillette mines, is analyzed. In the FEIS, we have added specific modeling results for cumulative impacts by year 2015, to the 2010 impact discussion presented in the draft. This was done to provide trends in predicted cumulative air quality impacts.

Section 3.17.9.1 concerns human health impact assessments. BLM does not have jurisdiction in regard to conducting human health assessments. BLM

has contacted the Wyoming Department of Health/Environmental Health Section and has invited them to review and provide comment on the EIS. BLM has also contacted the Center for Disease Control and Prevention but have not received a response.

Comment Response 6B: As with ongoing mining, water of adequate quantity and quality for the ranching community will continue to be available from the shallow Wasatch aquifers as well as from zones below the coal to be mined. Mining is currently only occurring in the upper coals of the Tongue River Member of the Fort Union Formation. The shallower Wasatch Formation is comprised of a multitude of primarily discontinuous lenticular sandstones which are typically not areally extensive. If existing ranching operations are currently using water from the coal seam to be mined or one of these lenticular deposits that is interrupted by mining, there is a potential for conflict between the two operations. Any water rights disputes that may develop would follow standard procedures as described in the Wyoming State Engineer's Office Regulations and Instructions (Part 2 Section 17). The discontinuous, lenticular nature of the Wasatch sands will likely continue to provide water for local use. Deeper coals and sands, particularly the sands of Tullock Member of the Fort Union, will not be directly impacted by mining in the upper seams.

We have identified the effects of recent global climate change on the environment in the area of the proposed actions. We have assumed that existing land and resource conditions within the analysis area have been and will continue to be affected by climate change under all alternatives. Existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. We have referenced national and regional data that is available, most recent being the report, *The Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States* (U.S. Climate Change Science Program 2008).

Comment Response 6C: The BLM has done a detailed assessment of current coal reserves for each applicant mine, and has assessed the amount of coal required for each mine to maintain its current rate of production. The coal applications involved in the EIS are for maintenance leases and not for mine expansions. If leased, the LBAs represent the amount of coal needed for continued activity with possible annual increases in production based on each applicant's air quality permit limits and national demand. The national demand may be influenced by the political climate set forth by the new presidential administration or the national cultural climate. We have updated the EIS to reflect the fact that President Obama, in an address to Congress in February, 2009, advocated congressional action on a cap and trade program addressing climate change. Possible future national policies and legislation, because of this proposal or congressional action, is unknown. Any climate change bills that were previously submitted to the 110th Congress had not been resubmitted to the 111th Congress as of the President's cited address.

Comment Response 6D: Lands that are disturbed to recover coal must be reclaimed following mining in accordance with the requirements of state and federal law. Wyoming DEQ has strict parameters for coal mine reclamation procedures, species composition, final land surface contour, and environmental sustainability. The Surface Mining Control and Reclamation Act of 1977 requires sufficient bonding to cover anticipated reclamation costs. When mining is permitted, the WDEQ/LQD sets the bond amount for reclamation of all disturbed lands, and the operator posts an acceptable bonding instrument for this amount with the State of Wyoming. The reclamation bond is not released until a minimum of ten years have elapsed from the date of final seeding and the WDEQ/LQD has determined that all reclamation verifications have occurred.

Individual coal mine annual reports are available to the public at WDEQ/LQD offices which include specific reclamation information. The OSM also prepares reports describing reclamation activities in Wyoming.

Currently, the BLM is using a regional technical study, the PRB Coal Review, to evaluate cumulative impacts of coal and other mineral development in the PRB. The study includes a look at past and present coal development and develops a forecast of reasonably foreseeable development in the PRB through 2020. Tables 4-2 and 4-3 in the FEIS address baseline and projected reclaimed and unreclaimed mining acres in the PRB. BLM is also completing work on a comprehensive database to use in tracking development activities in the PRB. The database will track cumulative actual reclaimed and unreclaimed acreages of coal mines.

The EIS discusses reclamation in Chapter 2 for each applicant. Not all disturbed land has been mined. Some of the surface acres disturbed contain permanent structures such as buildings and rail lines. Reclamation follows as mining progresses. It is true that as coal deepens, additional surface disturbance is required in advance of operations to allow a series of benches or a stable incline to reach the coal depth while maintaining a safe and stable working area, and this practice does increase disturbance. Further explanation on the reclamation process has been added in Chapter 2.

Comment Response 6E: The EIS discusses greater sage grouse and other sensitive species in the “Wildlife” section (3.10) and in Appendices E through I in Volume 2 of the draft EIS. Among other important habitat components, sage grouse require vast expanses of sagebrush-steppe communities with extensive mosaics of sagebrush of varying densities and heights. As stated in the EIS, there are no large expanses of contiguous sagebrush in the South Gillette EIS general analysis area. Please see Section 3.10.5.1 for a discussion on sage-grouse.

There are no known leks within the South Gillette EIS general analysis area. About 25 years of annual or biannual monitoring studies from 1982 to 2006 performed by the mines in the South Gillette area documented that sage-grouse are rare in the survey areas. Requirements to protect sage-grouse during mining operations are addressed as part of the existing mining and reclamation plan for each individual mine. An approved raptor mitigation plan is also in place for the applicant mines. If the proposed tract is leased and permitted for mining, the wildlife monitoring and mitigation plans would be amended, as required by WDEQ/LQD and USFWS, to include newly leased tracts.

In 2007, Wyoming Governor Dave Freudenthal commissioned a Statewide Sage-Grouse Implementation Team. On March 17, 2008, the team preliminarily identified and mapped recommended sage-grouse focus areas in Wyoming in an effort to better understand what types of habitat grouse prefer and what areas should be protected. The South Gillette EIS applicant mines' general analysis areas are not located within any of the mapped focus areas as the EIS states in Section 3.10.5.1. In the "Affected Environment" section (3.10.5.1.2) there is a discussion of the focus area outside and adjacent to the West Coal Creek LBA. Also, the South Gillette Supplementary Information document contains a more detailed discussion.

The EIS analyzes and thoroughly describes how proposed activities will impact habitats and species. Like all proposed projects at BLM, we consult with USFWS to fulfill Section 7 consultation obligations and responsibilities. USFWS has determined that our analysis effectively addresses sage-grouse issues. The WGFD also assessed that the EIS adequately addresses potential impacts to game species. Professional wildlife biologists at the WGFD, USFWS, and the BLM Buffalo Field Office have also reviewed the wildlife analysis.

Comment Response 6F: The BLM's Departmental Manual 516-chapter 4.26A states that "The minimum review period for a draft EIS will be forty-five (45) days from the date of publication by the EPA of the notice of availability." The revised BLM NEPA Handbook H-1790-1 January 2008, Section 9.3.2, page 99, second paragraph, states that, "The public comment period for all draft EISs must last at least 45 days (516 DM 4.26)...". This information can also be found at 40 CFR 1506.10. We allowed 60 days for review, as stated in the "Abstract A and the "Dear Reader" letter in the DEIS. The 60-day review period on the South Gillette draft EIS commenced on the date the EPA published the Notice of Availability in the *Federal Register*. Comments received after the comment period are still accepted for the record, reviewed, and are addressed to the extent practicable.

Comment Response 6G: Chapter 4 is dedicated to addressing current or planned development in the PRB. The mines that exist today have been operating since 1990 or before. The Executive Summary contains a map of all

pending and issued LBAs in the PRB (Figure E-1). Tables 1-1 and 1-2 also show existing and pending LBAs and exchanges in the Powder River Basin. The EIS discusses other federal, state, and private activities in the PRB in Section 4.1.3. The discussion of development activities has been projected to the year 2020 with calculations and predictions for both upper and lower production scenarios. The Powder River Basin Coal Review reports have been incorporated into this EIS, and a discussion can be found at the beginning of Chapter 4.

The Buffalo RMP was approved initially in 1985, and updated in 2001. The RMP was based on an older system of land use planning done by BLM in the 1970s, called management framework plans. Coal planning has run consistently through these comprehensive, multiple use plans and has been done consistent with the BLM's land use planning and coal management regulations. The proposed actions in this EIS were reviewed against the existing planning requirements and were determined to be in conformance.

Lesley Collins/CFO/WY/BLM/DOI
12/16/2008 02:30 PM
To
Teresa Johnson/CFO/WY/BLM/DOI@BLM
cc

bcc

Subject
Fw: So. Gillette Area LBA Draft EIS

History:

This message has been forwarded.

Lesley A. Collins
Public Affairs
High Plains District
Office: 307-261-7603

----- Forwarded by Lesley Collins/CFO/WY/BLM/DOI on 12/16/2008 02:30 PM

"McKenzie, Don" <dmcken@wyo.gov>
12/15/2008 02:41 PM
To
<casper_wymail@blm.gov>
cc
"Ogle, Kathy" <kmogle@wyo.gov>, "Emme, Douglas" <demme@wyo.gov>,
"Rogaczewski, Mark" <mrogac@wyo.gov>, "Hunter, Joe" <jhunte@wyo.gov>,
"Clark, Dan" <dclark@wyo.gov>
Subject
So. Gillette Area LBA Draft EIS

Teresa,

I have enclosed a few comments by our LQD CHIA Supervisor regarding the referenced EIS. I also had a couple comments that are listed below:

Volume 1 of 2, Chapter 2, Section 2.7, page 2-54, first full paragraph, fourth sentence - Reportable quantities of hazardous or extremely hazardous substances require immediate notice to the WDEQ Emergency Coordinator, Mr. Joe Hunter, not the WDEQ Solid and Hazardous Waste Division. Mr. Hunter relays the information of a reportable release to the other WDEQ Divisions as appropriate.

} A

Volume 2 of 2, Appendix A, page A-1 under "STATE" header - Solid waste disposal, such as a landfill type of facility, are addressed through the

} B

WDEQ Land Quality Division coal mine permit.

Thank you for the opportunity to comment.

Don McKenzie

Memo

To: Don McKenzie, Administrator, WYDEQ/LQD
From: Kathy Muller Ogle, Geological Supervisor
Date: December 9, 2008
Subject: Review of marked sections of the Draft Environmental Impact Statement (EIS) for the South Gillette Area Coal lease Applications (dated October 2008), Bureau of Land Management (BLM)

Introduction

Per your request, I have examined the marked pages of the above referenced document for consistency with Wyoming Department of Environmental Quality/Land Quality Division's (WDEQ/LQD) cumulative hydrologic impact assessments (CHIA) work. No significant problems were found in those sections. Since WDEQ/LQD does not complete a CHIA on the lease areas until after an amendment is submitted to WDEQ/LQD, individual impacts could not be assessed but the general approach was evaluated.

Only two areas are recommended for revision (Items 2. and 4.). First, the discussion on the Coal Creek alluvial aquifer water quality should be revised to reflect current data or alternatively, the supporting data for the conclusions presented in the EIS should be cited in the document. Second, the alluvial valley floor (AVF) discussion should be revised to reflect that the responsibility for AVF determination lies with WDEQ/LQD and is based on site specific conditions.

Individual Sections:

1. Page ES-29: The general cumulative descriptions are comparable to our analysis approach, but WYDEQ/LQD has not completed a CHIA analysis for these amendments.

Recommendation: No change

2. Page 3-77: The statement that "*In addition, Coal Creek alluvial groundwater is generally poor quality and does not meet WDEQ/WQD standards for domestic and agricultural uses, and is marginal for livestock and wildlife use.*" was examined using total dissolved solids (TDS) concentrations as an overall indicator of water quality.

Recommendation: Based on the data examined (attached as addendum 1), it is recommend that either the statement be revised as follows or that the BLM include a discussion of the data supporting the statement. Currently, the document characterizes the water quality in the Coal Creek alluvial groundwater as poorer than what WDEQ/LQDs data and analysis reflect.

A large handwritten bracket on the right side of the page, spanning from the second item of the list down to the recommendation for that item. To the right of the bracket is a handwritten capital letter 'C'.

Suggested Revision:

“Based on TDS concentrations, Coal Creek alluvial groundwater generally meets the WDEQ/WQD standards for livestock use. However, the quality is variable from well to well and at some locations it may exceed the livestock standard and at other locations it may be suitable for both livestock and agricultural use.”

Or the data supporting the conclusions in the document should be cited.

3. **Page 3-85:** The general discussion is based primarily on the GAGMO 25-Year report. WDEQ/LQD also uses that report as part of the CHIA analysis. However, the sentence *“Hydro-Engineer (2007) states that the extent of drawdown caused by mining alone to the west of the mines can no longer be defined due to the much larger drawdown caused by CBNG development”* is likely an accurate summary of what is presented in the GAGMO report. However, WDEQ/LQD has found that statement to be applicable in some areas of the basin but not to other areas. When data from individual coal monitor wells are examined, some data support that statement, while other data show different trends.

Recommendation: No change. The statement accurately reflects the cited report, but some of WDEQ/LQD’s data indicates that that statement is not accurate for all areas.

4. **Page 3-122 to 125:** The general discussion of the AVF appears appropriate. Two phrases do raise flags.

There are statements like *“There are no streams that meet the definition of an AVF within one-half mile of the proposed permit amendment area, because the streams are incised and contain few stream laid deposits.”* in several sections.

It should be noted that an EIS document does not determine if there is an AVF. The responsibility and authority for an AVF determination lies with WDEQ/LQD.

Recommendation: It is suggested that those statements be rephrased.

Under individual LBA Tract discussions, there are statements like *“Based on previous non-AVF declarations made on the Belle Fourche River within and adjacent to the Maysdorf II LBA Tract, it is unlikely that the WDEQ/LQD would declare that an AVF is present.”*

It should be noted that site specific conditions often determine an AVF declaration and the assumptions supporting this statement may not hold true at individual sites. AVF determinations will be made by the WDEQ/LQD based on data, mapping, site visits and analysis of site specific conditions.

D

Recommendation: It is suggested that those statement be rephrased.

5. Page 4-45: This general discussion reflects the findings in LQD's latest CHIA in the area and the CHIA is correctly cited. Of course, LQD has not assessed the impacts of these LBAs yet, since they will not be submitted to LQD as an amendment until after the leave process.

Recommendation: No change.

cc: Carol Bilbrough

Addendum 1

Summary of Alluvial Aquifer Data Examined from the Coal Creek Mine:

In the latest CHIA in that area, WDEQ/LQD found the overall alluvial aquifer water quality concentrations of TDS were below the livestock standard of 5,000 mg/l with a median concentration of 3,314 mg/l. That data support the conclusion that the alluvial aquifer is suitable for livestock, but probably not for domestic or agricultural. In that CHIA, WDEQ/LQD did not analyze discrete alluvial aquifers on individual streams.

However, to assess the accuracy of the statement in this EIS, WDEQ/ LQD's most recent hydrology data for alluvial wells on the Coal Creek Mine were examined. Over the years of mining in the area, Coal Creek Mine has installed 39 alluvial monitor wells. Eight of those wells are listed as still actively monitored. Further examination reveals that four of those eight are monitored for water quality. Those four alluvial monitor wells are completed from 15.5 feet to 19.7 feet in depth. Table 1 below summarizes TDS concentrations at those four wells.

Table 1. Summary of the total dissolved solids (TDS) concentrations at four alluvial aquifer monitor well, Coal Creek Mine, middle Powder River Basin, 2008. [As a point of reference, TDS of 500 mg/l is the maximum Water Quality Division (WQD) standard for domestic use; 2,000 for agricultural use, and 5,000 mg/l for livestock use.]

Mine, Aquifer, Well Name	Dates		Total Dissolved Solids @ 180 C in mg/l			Number of Samples
	First Sample	Latest Sample	Latest Concentration	Minimum Concentration	Maximum Concentration	
COAL CREEK, ALLUVIUM, CCA-14C	4/26/1989	11/15/2007	2,210	1,360	2,230	25
COAL CREEK, ALLUVIUM, CCA-2C	4/26/1989	11/14/2007	880	582	1,060	24
COAL CREEK, ALLUVIUM, CCA-4C	4/26/1989	11/19/2007	2,050	1,824	4,170	25
COAL CREEK, ALLUVIUM, CCA-5C	5/19/1989	11/14/2007	6,850	2,434	8,300	26

Data from these four wells indicate that only one, CCA-5A, exceeds the livestock standard for TDS for the latest's concentration and the maximum concentration. Time series plots are shown for TDS concentrations at each of the wells in Figures 1, 2, 3, and 4. Please note the concentration scale for Figure 4 is twice the concentration scale for the other figures. Based on TDS alone, well CCA-2C

is suitable for agricultural use and CCA-14C and CCA-4C have been or are approaching the agricultural use standard. Of course, there may be other constituents that impact the alluvial aquifer's use. If that is the case, those constituents and the supportive information should be included in the EIS.

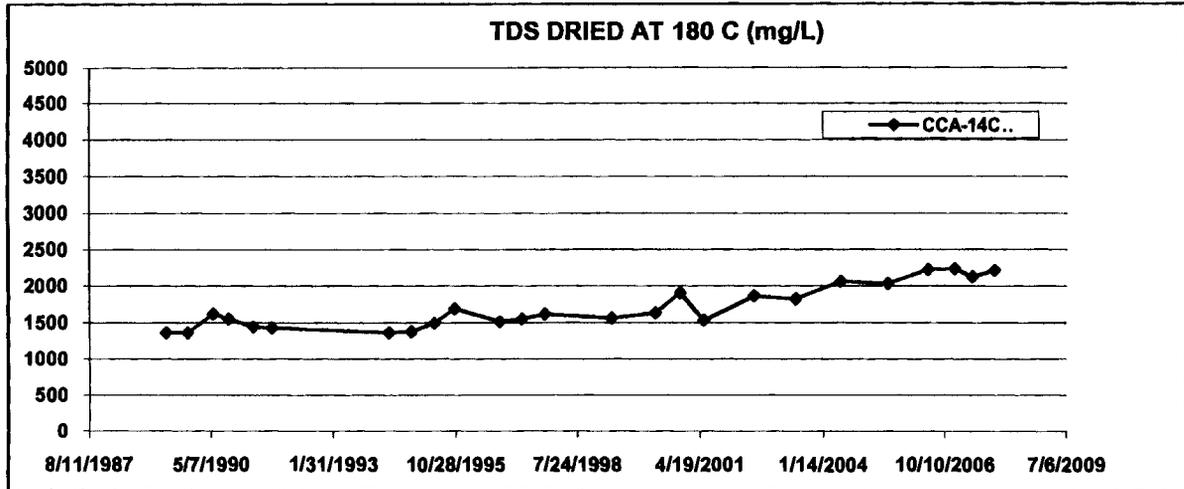


Figure 1. Time series plot of total dissolved solids at 180 C at alluvial aquifer monitor well CCA-14C, Coal Creek Mine, middle Powder River Basin, Wyoming, 2008.

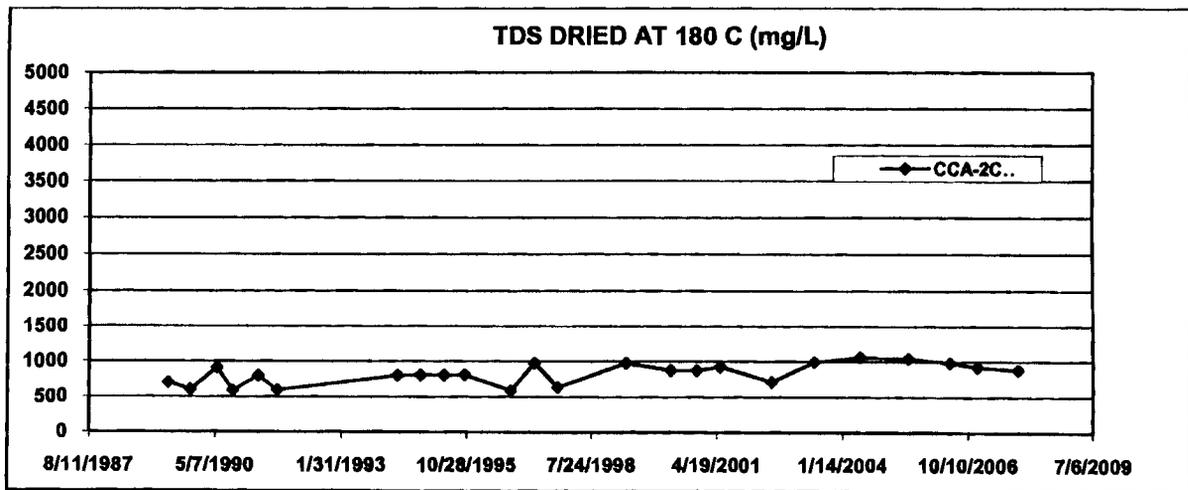


Figure 2. Time series plot of total dissolved solids at 180 C at alluvial aquifer monitor well CCA-2C, Coal Creek Mine, middle Powder River Basin, Wyoming, 2008.

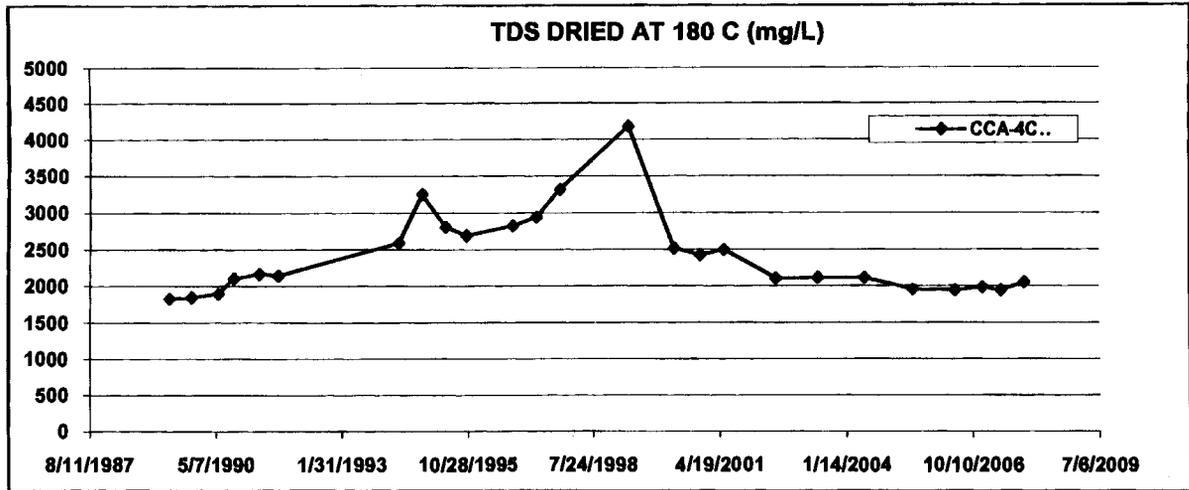


Figure 3. Time series plot of total dissolved solids at 180 C at alluvial aquifer monitor well CCA-4C, Coal Creek Mine, middle Powder River Basin, Wyoming, 2008.

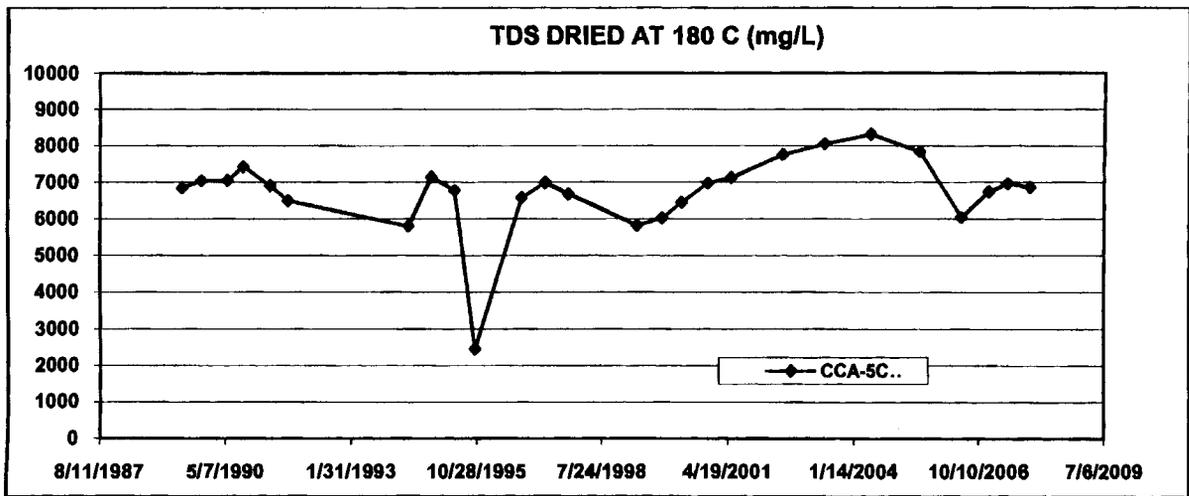


Figure 4. Time series plot of total dissolved solids at 180 C at alluvial aquifer monitor well CCA-5C, Coal Creek Mine, middle Powder River Basin, Wyoming, 2008.

**Response to Comment Letter 7: Department of Environmental Quality,
Land Quality Division**

Comment Response 7A: Section 2.7 of the final EIS, where it discusses release of reportable quantities of hazardous or extremely hazardous substances has been revised to read *“If a reportable quantity of a hazardous or extremely hazardous substance is released, immediate notice must be given to the WDEQ Emergency Response Coordinator.”*

Comment Response 7B: Appendix A has been revised to reference the WDEQ/LQD as the agency responsible for solid waste disposal management.

Comment Response 7C: Section 3.5.1.1.1 where it discusses alluvial deposits for the West Coal Creek tract has been changed to incorporate your suggested revision in the final EIS.

Comment Response 7D: The suggested revisions have been made in the final EIS to Sections 3.6.1.2, 3.6.1.3, and 3.6.2.1 to indicate that the WDEQ/LQD makes AVF determinations, and that those determinations are made based on data, mapping, site visits, and analysis of site-specific conditions.

Lesley Collins/CFO/WY/BLM/DOI
12/24/2008 10:19 AM
To
Teresa Johnson/CFO/WY/BLM/DOI@BLM
cc

bcc

Subject
Fw: Comments on DEIS for the South Gillette Area Coal Lease Applications

Lesley A. Collins
Public Affairs
High Plains District
Office: 307-261-7603

----- Forwarded by Lesley Collins/CFO/WY/BLM/DOI on 12/24/2008 10:19 AM

"Downing, Doug" <DDowning@archcoal.com>
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To
<Casper_wymail@blm.gov>, <Teresa_Johnson@blm.gov>, <Mike_Karbs@blm.gov>
cc
"Rowlands, Mike" <MRowlands@archcoal.com>, "Sturgill Jr, BJ"
<BSturgill@archcoal.com>, "Addison, Jeff" <JAddison@archcoal.com>
Subject
Comments on DEIS for the South Gillette Area Coal Lease Applications

Teresa, below are Ark Land Company comments on the above mentioned DEIS. Ark's comments focus on the broader issue of Global Climate Change/Greenhouse Gas Emissions as opposed to grammatical and typographical anomalies. My contact information is listed below if you wish to discuss our comments further. Thank you for the opportunity to comment and we look forward to the completion of the NEPA process. Happy Holidays!

The discussion of Global Climate Change and Greenhouse Gas Emissions in the Draft EIS, page 4-103 to page 4-113, generally provides the requisite analysis of the reasonably foreseeable effects of climate change. However, the narrative style of the presentation at times makes it hard to follow how the section is tracking the CEQ requirements for discussion of cumulative effects, and in particular, what steps the agency undertook to determine when data were lacking to carry the analysis of effects further.

Following are specific section comments:

1. Section 3.18.2 (Affected Environment & Environmental Consequences, Greenhouse Gas Emissions). This section should include some discussion of mitigation measures that would mitigate greenhouse gas emissions from the proposed action. If there are no feasible mitigation measures, the document should state that and explain why. 40 C.F.R. 1502.16(h).

2. Section 4.2.14.1 (Cumulative Environmental Consequences, Global Climate

Change and Greenhouse Gas Emissions). The document should contain a meaningful discussion of the direct and indirect effects of the proposed action on climate change when added to the aggregate effects of other past, present, and reasonably foreseeable future actions. See 40 C.F.R. 1508.7. In particular, the current draft does not give a completely clear

sense of the project's relationship to past, present, and future actions related to the leasing of federal coal. If the information needed to estimate the incremental effects of the proposed action on global climate change is unavailable, the document should clearly follow the steps in 40 C.F.R. 1502.22 regarding unavailable information. The BLM should update the entire discussion under Section 4.2.14.1 with current information that

is available at the time the Final EIS is prepared. The BLM appropriately

described the percentage of anthropogenic carbon dioxide and methane gas emissions that are attributed to Powder River Basin coal mines.

3. The BLM stated that 'it is not possible to project the level of CO2 emissions that burning the coal" mined from the proposed lease tracts would have. Draft EIS at 4-112. The BLM should take a second look at this matter. It should make a reasonable estimate of the level of CO2 emissions that would occur if the coal mined from the proposed lease tracts is burned, perhaps by using published emissions factors that exist today for bituminous coal. The BLM should estimate what cumulative effect

those anticipated emissions would have on the percentage of greenhouse gas

emissions attributed to coal on page 4-107. The BLM should disclose whether the CO2 emissions from the proposed lease tracts would change the estimates of CO2 emissions presented in Tables 4-36 and Tables 4-37. It should be noted that the last bullet on page 4-107 should indicate that the coal mined from the Wyoming PRB, not the "surface coal mines" were responsible for about 13.9 percent of the U.S. CO2 emissions in 2006.

4. The BLM should make similar estimates for methane gas emissions associated with the proposed lease tracts on pages 4-112 to 4-113 of the Draft EIS. The BLM should identify whether the methane gas emissions associated with the proposed lease tracts will change the percentage of greenhouse gas emissions attributed to Powder River Basin surface coal mines on page 4-112.

5. At the end of the first paragraph under Table 4-37 on page 4-111, it is suggested that the text be revised as follows: "Both EIA and EPRI forecast increases in electricity costs with regulation of CO2 emissions and the associated shifts projected in the sources of power away from

A

B

C

D

E

coal."

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Response to Comment Letter 8: Ark Land Company

Comment Response 8A: A discussion of monitoring and mitigation measures for greenhouse gas emissions during mining operations has been added as Section 3.18.3, “Regulatory Compliance, Monitoring and Mitigation.”

Comment Response 8B: We have updated the discussion of direct and indirect effects of the proposed leasing actions when added to the effects of other past, present, and reasonably foreseeable future actions as it relates to climate change. As stated in Section 4.2.14 in the final EIS, climatic change analyses are comprised of several factors, including GHG emissions, land use management practices, and the albedo effect. Tools necessary to quantify incremental climatic changes associated with those factors for specific activities like mining of an LBA tract are presently unavailable. Therefore, impact assessments for effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Consequently, climate change analysis in this EIS is limited to accounting for and disclosing of factors that contribute to climate change. To the extent that emission data were available, or could be inferred from representative type data, we have identified potential GHG emissions that could result from development of the proposed LBAs, as well as emissions that will result from selection of the No Action Alternative.

The site-specific impacts analyzed in this EIS are based on the assumption that if LBA tracts are offered for competitive lease, a lease would be issued, and mining would be permitted. We further assume that the applicant would be the lessee, and that the lease would be permitted as an extension of their current mining operations. In Chapter 3, Affected Environment and Environmental Consequences, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative. A table has been added to Section 4.2.14 in the final EIS to assist in describing the combined effects of leasing all currently pending LBAs.

Also, in Chapter 4, Cumulative Environmental Consequences, the contribution of the site-specific alternatives to cumulative effects on the environment is evaluated. To do this, it is assumed that coal mining will proceed in accordance with permit conditions. We further assume that this coal will be sold to coal users in response to forecasts of demand for this coal. Historically these users have been electric utilities in the United States, although there is potential for sales outside the U.S. This coal market is open and competitive and users can buy from the most cost effective suppliers that meet their needs.

We have estimated the amount of GHG emissions that could be attributed to coal production that could result from leasing of the proposed LBAs, as well as from the forecast coal production from all coal mines in the Wyoming PRB. This information is included in Chapter 4 (4.2.14.1). This was done by relating

the portion of coal mined to the total emission of GHG from all coal mined in the U.S. We assumed that all PRB coal was used for coal fired electric generation as part of the total U.S. use of coal for electric generation. This gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs, and for forecast total PRB coal production. Specific levels of significance have not yet been established for GHG emissions. Given the state of the science, it is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach conclusions as to the magnitude or significance of the emissions on climate change. The impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions land use management practices, and the albedo effect. The EIS does provide a meaningful context and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

Comment Response 8C: Wyoming Powder River Basin coal is sold on the open market; therefore, it is not possible to know with any reasonable certainty what power plants would use this coal or in what amount. The variety of burning and emission control apparatus installed in the many facilities to which PRB coal is sold would also make calculating CO₂ emissions difficult. We agree that some sort of calculation is possible for CO₂ released during laboratory combustion of coal. The following information has been added to the final EIS in section 4.2.14.1: *“In 2006, the Wyoming Powder River Basin coal mines produced approximately 432.0 million tons of coal. Using factors derived from laboratory analyses, it is estimated that approximately 716.9 million metric tons of CO₂ would be generated from the combustion of all of this coal (before CO₂ reduction technologies are applied). This number is based on an average Btu value of 8,600 per pound of Wyoming coal and using a CO₂ emission factor of 212.7 pounds of CO₂ per million Btu (DOE 1994). The estimated 716.9 million metric tons of CO₂ represents approximately 33.6 percent of the estimated 2,134.1 million metric tons of U.S. CO₂ emission from coal combustion (DOE 2007a). In 2006, Wyoming PRB mines accounted for approximately 37.2 percent of the coal produced in the U.S (DOE 2007d).”*

Comment Response 8D: A new discussion on coal bed methane released from the coal face has been added to Chapter 3 at the end of Section 3.18.3. Table 3-19 was calculated to show the effects of all greenhouse gases released during mining operations. The calculations have been edited from those presented in the draft EIS.

Comment Response 8E: The last two sentences of the first paragraph under Table 4-37, “Carbon based sources such as coal, gas and petroleum are reduced as compared to the EIA forecast. Both EIA and EPRI forecast increases in electricity cost.”, has been reworded to say: *“Use of carbon based*

sources such as gas and petroleum are less than forecasted by the EIA, while coal use remains about the same in the EPRI forecast, mostly due to forecasted improvement in GHG emission reduction in coal fueled generation. Both EIA and EPRI forecast increases in electricity cost.”



December 24, 2008

BY E-MAIL

Casper Field Office
 Bureau of Land Management
 Attn: Teresa Johnson
 2987 Prospector Drive
 Casper, WY 82604
casper_wymail@blm.gov

Re: Comments on South Gillette Area Draft Environmental Impact Statement for Four Federal Coal Lease by Applications, Wyoming

Dear Ms. Johnson:

WildEarth Guardians, Clean Energy Action, Biodiversity Conservation Alliance, the Sierra Club, and Mark Squillace submit the following comments on the Bureau of Land Management's ("BLM's") draft environmental impact statement ("DEIS") for four coal lease by applications ("LBAs") in the South Gillette Area of the Powder River Basin of Wyoming (hereafter "South Gillette LBAs"). The four LBAs include the Belle Ayr North Coal Tract, the West Coal Creek Tract, Caballo West Coal Tract, and Maysdorf II Coal Tract. For the foregoing reasons, we oppose the proposed LBAs and request the BLM withdraw its proposal to offer for lease the four tracts. These comments are timely submitted within 45 days of the publication of the notice of availability ("NOA") of the DEIS in the Federal Register. See 73 Fed. Reg. 61903-61905.

Pursuant to the National Environmental Policy Act ("NEPA"), we also request an extension of the comment period regarding this DEIS. Although we have attempted to provide thorough comments to the BLM with regards to the DEIS, because the deadline for comments has fallen so close to the holiday season, we do not feel that we have been provided adequate opportunity to comment. We request an additional 30 days to submit more detailed comments to the BLM with regards to the South Gillette LBAs DEIS.

The Powder River Basin has been Erroeneously Decertified as a Coal Production Region

The Powder River Basin was "decertified" as a Federal coal production region coal production region in January of 1990. In other words, the BLM has asserted that the Powder River Basin is outside a coal production region in accordance with 43 CFR § 3400.5. This

“decertification” was made on the recommendation of the Powder River Regional Coal Team in October of 1989. At the time, this decertification was deemed appropriate “based on decreasing industry interest in new competitive Federal coal leasing and the condition of the coal market.” See Environmental Assessment of the West Black Thunder Coal Lease Application as Applied for by Thunder Basin Coal Company (Federal Coal Lease Application WYW118907) (August 1991) at 1.

Although it is questionable whether the “decertification” of the Powder River Basin as a coal production region was appropriate in 1990, it is clear that it is inappropriate today. Indeed, coal production in the Powder River Basin region is significant and has increased substantially over the years. According to data from the BLM’s own website, coal production in the Powder River Basin has increased from 293 million tons to more than 436 tons in 2007. See, Chart below. The region is currently producing record amounts of coal.

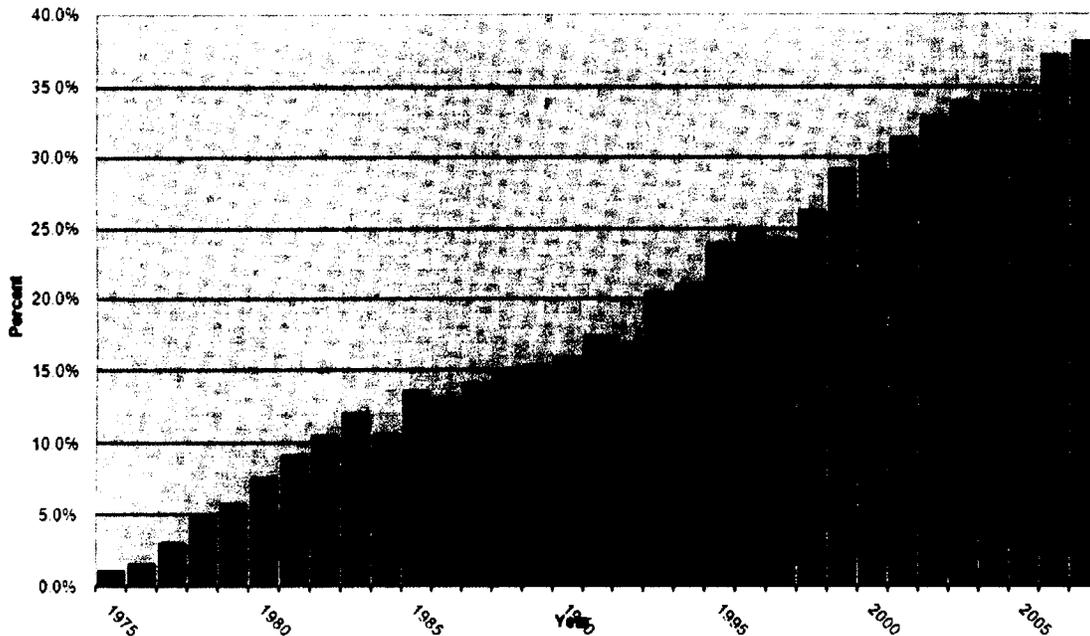
Mine	Operator	2007*	2006*	2005*	2004*	2003*	2002*	2001*	2000*	1999*	1998*
North Antelope/Rochelle	Peabody	91.5	89.7	82.7	82.5	80.10	74.80	74.80	70.70	68.90	64.60
Black Thunder	Arch	86.2	92.2	87.5	75.1	62.60	65.10	67.60	60.10	48.70	42.70
Cordero-Rojo	Rio Tinto Energy America	40.5	39.7	37.8	38.8	36.00	38.20	43.50	38.60	45.70	37.00
Jacobs Ranch	Rio Tinto Energy America	38.1	39.9	37.3	38.6	35.70	31.70	29.30	28.30	29.10	29.10
Caballo	Peabody	31.2	32.5	30.5	26.4	22.70	26.00	27.10	25.70	26.50	25.90
Belle Ayr	Foundation Coal West	26.6	24.6	19.5	18.7	17.90	17.40	11.80	15.00	17.80	22.50
Eagle Butte	Foundation Coal West	25.0	25.3	24.1	23.0	24.70	24.90	24.80	18.60	17.40	18.10
Antelope	Rio Tinto Energy America	34.5	33.9	30.0	29.7	29.50	26.80	24.60	23.00	22.70	19.40
Buckskin	Kiewit Mining Properties LLC	25.3	22.5	19.6	20.3	17.50	18.30	19.10	15.80	15.60	17.30
Coal Creek	Arch	10.2	4.7	0.00	0.00	0.00	0.00	0.00	4.20	11.20	7.10
Rawhide	Peabody	17.1	16.2	12.4	6.9	3.70	3.40	0.00	0.00	0.80	5.40
Wyodak	Wyodak	5.0	4.7	4.7	4.80	4.80	4.10	3.50	3.00	3.10	3.30
Dry Fork	Western Fuels	5.3	5.9	4.1	4.5	4.30	4.90	4.00	2.20	1.20	1.00
North Rochelle	Arch	dissolved	dissolved	dissolved	12.4	23.90	23.90	23.90	17.80	8.20	0.04
Powder River Basin Total		436.6	431.3	390.2	381.7	363.4	359.5	354.0	323.0	316.9	293.40
Wyoming Total		451.3	446.1	403.9	395.8	376.3	372.8	368.5	338.8	334.0	314.50

Coal produced in Powder River Basin (data in millions of tons). Chart available at http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/production.html.

Furthermore, the Powder River Basin region produces more coal than any other region in the United States. Currently, the Powder River Basin provides more than 35% of the nation’s coal, a figure that has grown substantially over the years. See, Chart below. According to the

Energy Information Administration, the Powder River Basin currently produces more coal than all the coal mines combined east of the Mississippi River. Indeed, in 2007, the Powder River Basin produced more than 479,000 tons of coal while mines east of the Mississippi produced 477,006. See <http://www.eia.doe.gov/cneaf/coal/page/acr/table1.html>. This is a significant amount of coal to be produced from a single region.

Percent of Total U.S. Coal Production Mined From The Powder River Basin, Wyoming



Sources: Energy Information Administration/Annual Energy Review, State Inspector of Mines of WY, & D O I, Federal Coal Management Report

Chart available at www.blm.gov/pgdata/etc/medialib/blm/wy/programs/energy/coal/prb.Par.5321.Image.-1.-1.1.gif.

Because the Powder River Basin remains a decertified coal production region, leasing is done on an application filed by a private company. The LBA process allows private coal company, and not the federal government, to design the tract of land subject to leasing. In the Powder River Basin this has allowed each major federal coal producer in the area to submit applications for lease federal coal leases in areas and on tracts that they have designed. This raises significant concerns that coal companies have designed tracts that are immediately adjacent to their existing mines. The result is that the lease applicant is typically the only bidder for the tract when the “competitive bidding” auction is held. This raises concerns that the Federal government is not ensuring fair market value of any privately designed and nominated lease tracts.

Regardless, the “decertification” of the Powder River Basin is contrary to 43 CFR § 3400.5, which requires the BLM to identify coal production regions and to adhere to the competitive leasing procedures of 43 CFR §§ 3420-3422. At the least, it is clearly arbitrary and capricious in light of the fact that the Powder River Basin is the nation’s leading producer of coal. If the BLM moves to lease the South Gilette LBAs, it will be acting contrary to its coal

leasing regulations and arbitrarily and capriciously.

If the BLM believes it cannot assess through the South Gillette LBAs whether or not the Powder River Basin should be certified as a coal production region in accordance with 43 CFR § 3400.5, then we hereby the BLM consider these comments a request for rulemaking submitted pursuant to the Administrative Procedure Act (“APA”), 5 USC § 553(e). Pursuant to the APA, we petition the BLM to revise its prior “decertification” of the Powder River Basin as a coal production region and appropriately identify the region as a coal production region in accordance with 43 CFR § 3400.5.

A

The Charter of the Powder River Regional Coal Team, as well as BLM Regulations Regarding the Function of the Coal Team, Violate the Federal Advisory Committee Act

Although the Powder River Regional Coal Team has been established as an advisory committee under the Federal Advisory Committee Act (“FACA”), the Team’s role in coal leasing decisions appears to go beyond what is allowed under FACA. Indeed, the Charter of the Powder River Regional Coal Team provides that “[t]he team’s recommendations on regional leasing levels, tracts to be offered, and sales scheduled, *shall be accepted*, except in the case of an overriding national interest, or in the case that the advice of the Governor(s) is accepted pursuant to 43 CFR § 3420.4–3(c).” Charter, 6.b(ii) (emphasis added). Furthermore, BLM regulations provide that with certain exception, Regional Coal Team recommendations on leasing levels and on regional lease sales “shall be accepted” by the Secretary. 43 CFR § 3400.4(d) (2006).

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The Charter of the Powder River Regional Coal Team provides, however, that “[o]peration and administration of the team will be in accordance with the Federal Advisory Committee Act of 1972 (FACA). 5 U.S.C. Appendix (1982). . . .” Charter, 13.e. The FACA states clearly that “the function of advisory committees should be *advisory only*, and that all matters under their consideration should be determined in accordance with law, by the official, agency, or officer involved” (emphasis added). Given that the recommendations of the Powder River Regional Coal Team are not “advisory only,” it thus appears that the RCT Charter, as well as the BLM regulations, violate the FACA. See 5 U.S.C. Appendix I (Supp. III, 1973), *as amended*, 5 U.S.C. Appendix I (Supp. I, 1975).

The Draft EIS Fails to Adequately Analyze and Assess Global Warming Impacts

We appreciate the attention given to global warming concerns in the DEIS. However, the DEIS falls short in key regards and fails to adequately analyzing and assessing global warming impacts. Further, the DEIS falls short of exploring reasonable alternatives that would address the global warming impacts of future mining that would be authorized by the South Gillette LBAs.

- **The Draft EIS Fails to Address the Cumulative Impacts of Other Department of Interior-authorized actions**

BLM needs to consider the cumulative impact of this action and other actions undertaken by the Department of Interior on climate change. These other actions include other BLM oil and gas lease sales such as the upcoming February 9, 2009 oil and gas lease sale by the Wyoming State Office of the BLM, as well as recent lease sales in other states such as Colorado, Montana,

C

New Mexico, Utah. These other actions also include BLM's revision of its plan for oil and gas extraction at the Pinedale Anticline in Wyoming and the actions covered in the Great Divide Resource Management Plan. These other actions also include the issuance of all Applications for Permits to Drill for oil and gas activities that are occurring now or are reasonably foreseeable. The BLM's sister agency, the Minerals Management Service, also authorizes offshore oil and gas drilling and development of production and processing facilities.

Furthermore, the cumulative actions that BLM must consider in terms of greenhouse gas emissions are not limited to oil and gas activities. For example, coal fired power plants are the largest source of greenhouse gas emissions in the United States. BLM is currently considering authorizing the construction of the Toquop coal fired power plant in Nevada. Additionally, the Bureau of Indian affairs is preparing an EIS over the Desert Rock coal-fired power plant in northwestern New Mexico. Emissions of greenhouse gases from this plant, and any other coal fired power plant BLM and other Interior agencies are considering, must also be considered in the cumulative impacts analysis.

Livestock is also a major source of greenhouse gas emissions. See e.g. Henning Steinfield, *Livestocks Long Shadow: Environmental Issues and Options*, (2006). Thus, BLM must consider its actions which involve livestock grazing in its cumulative impacts analysis of greenhouse gas emissions.

Coal mining is also a major source of greenhouse gases. Indeed, the DEIS discloses that the coal mines in the South Gillette area contribute to more than 3% of the United States' total greenhouse gas emissions. As the DEIS discloses, greenhouse gases are released during mining activities, during coal processing and transport, and when the coal is burned. This is a significant amount, indicating that mining authorized by other Interior agencies—including the BLM, the Office of Surface Mining, and the Secretary's Office—likely cumulatively amount to a significant source of greenhouse gases.

Therefore, BLM must consider the impacts of its proposal to authorize the South Gillette LBAs cumulatively with other Department of Interior authorized activities that also contribute to global warming. Until such time as BLM analyzes the cumulative impacts of greenhouse gas emissions from other Department of Interior authorized oil and gas development, coal-fired power plants, livestock grazing, coal mining, and other activities activities, BLM cannot move forward with the South Gillette LBAs in compliance with NEPA.

- **The Draft EIS Fails to Consider Alternatives that Address Global Warming**

The DEIS fails to consider alternatives that limit or eliminate greenhouse gas emissions. Such alternatives could include requiring capture and use of any methane vented as a result of coal mining activities, alternatives that require more efficient mining equipment, such as mine hauling trucks, alternatives that require the mine operators to secure offsets of greenhouse gases attributed to mining activities, alternatives that limit annual coal production to contribute to reductions in greenhouse gases from coal combustion, and alternatives that factor in the cost of greenhouse gas emissions and global warming when determining the fair market value of the coal

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D

to be leased.

The Draft EIS Fails to Adequately Analyze and Assess Air Quality Impacts

The BLM must analyze and assess the impacts of the South Gillette LBAs to air quality to ensure compliance with State and Federal air pollution standards in accordance with the Federal Land Policy and Management Act ("FLPMA"). 43 USC § 1712(c)(8). Unfortunately, the DEIS falls short in key regards in adequately analyzing and assessing air quality impacts under NEPA, raising questions over whether authorization of the LBAs will comply with State and Federal air quality standards.

- **Ozone**

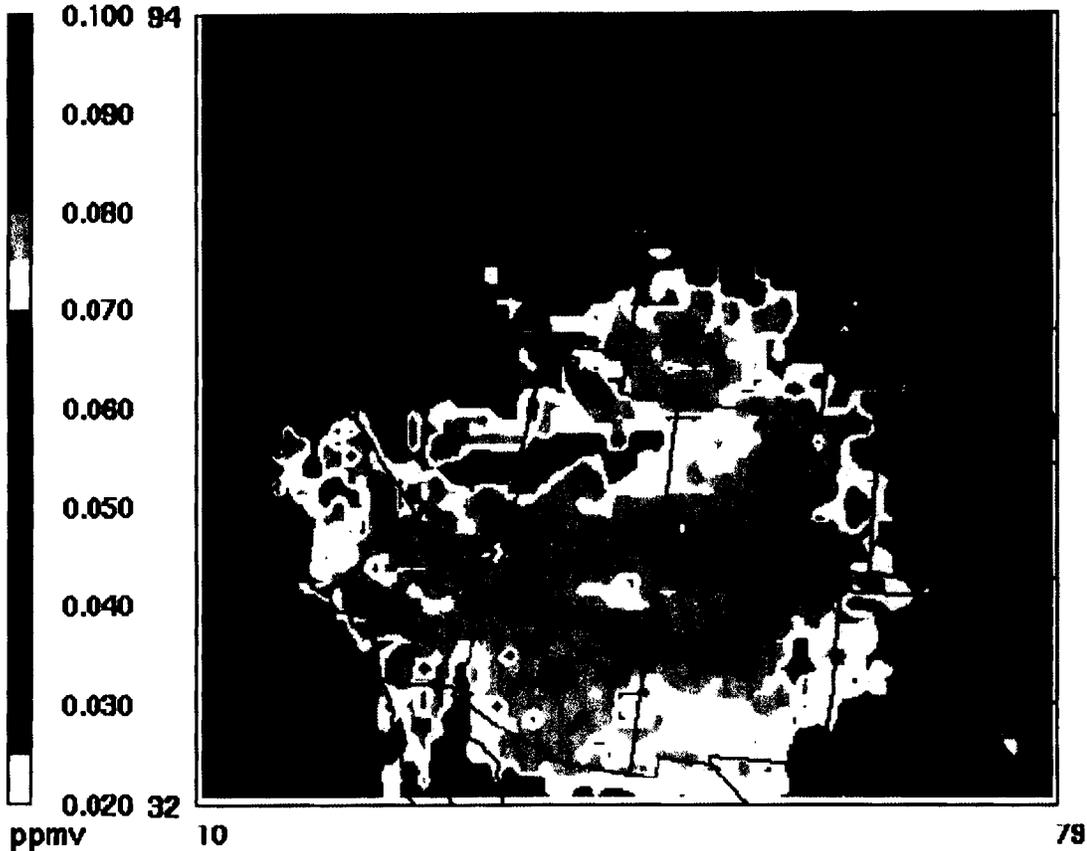
The DEIS does not analyze impacts to the current ozone standards. On March 27, 2008, the U.S. Environmental Protection Agency established new national ambient air quality standards ("NAAQS") for ozone, limiting concentrations to no more than 0.075 parts per million over an eight hour period. *See*, 73 Fed. Reg. 16436-16512. Ozone forms when precursor pollutants volatile organic compounds ("VOCs") and nitrogen oxides ("NOx") react with sunlight. While the DEIS recognizes ozone as a harmful air pollutant, there is no analysis of impacts to ambient ozone concentrations. This is particularly troublesome given that EPA monitoring data online at <http://iaspub.epa.gov/airsdata/adaqs.monvals?geotype=co&geocode=56005+56009&geoinfo=co~56005+56009~Campbell+Co%2C+Converse+Co%2C+Wyoming&pol=O3&year=2008+2007+2006+2005+2004+2003+2002+2001+2000&fld=monid&fld=siteid&fld=address&fld=city&fld=county&fld=stabbr&fld=reg&rpp=25> shows that there have been a number of exceedances of the ozone NAAQS over the years in Campbell County, Wyoming.

Also of concern is that the results of the modeling prepared for the Western Regional Air Partnership strongly indicate that attainment and maintenance of the 8-hour ozone NAAQS is at risk throughout the Western States, including in the Powder River Basin of Wyoming. *See*, Tonnesen, G., Z. Wang, M. Omary, C. Chien, Z. Adelman, and R. Morris, "Review of Ozone Performance in WRAP Modeling and Relevance to Future Regional Ozone Planning," presentation given at WRAP Workshop on Regional Emissions and Air Quality Modeling Studies (July 30, 2008). This modeling in fact shows that the annual fourth maximum 8-hour ozone concentration will exceed 0.075 ppm throughout much of Wyoming. *See* Figure below.

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O3

**WRAP prp18a
4th 8-HR MAX**



**January 1, 2002 0:00:00
Min= 0.031 at (14.73), Max= 0.103 at (41.65)**

Projected 2018 annual fourth maximum ozone concentrations. Orange and red indicate exceedances and/or violations of the ozone NAAQS of 0.075 parts per million.

- **PSD Increments**

The DEIS indicates the BLM does not believe it has to perform an analysis of impacts to Prevention of Significant Deterioration ("PSD"). This belief is flawed. FLPMA requires the BLM to ensure compliance with Federal and State air quality standards, and that includes PSD increments. The BLM must assess the degree to which any mining activities authorized by the LBAs will consume Class I and Class II PSD increments in the region to ensure compliance with Federal and State air quality standards as required by FLPMA.

- **PM-10 Impacts**

The DEIS claims that modeling shows that mining authorized by the South Gillette LBAs will not exceed and/or violate NAAQS for PM-10. This claim is undermined by the fact that monitoring shows the PM-10 NAAQS of 150 micrograms/cubic meter has been exceeded on

numerous occasions at coal mines in the Powder River Basin over the last several years. Data accessible on the EPA's website at <http://iaspub.epa.gov/airsdata/adaqs.monvals?geotype=co&geocode=56005+56009&geoinfo=co~56005+56009~Campbell+Co%2C+Converse+Co%2C+Wyoing&pol=PM10&year=2008+2007+2006+2005+2004+2003+2002+2001+2000&fld=monid&fld=siteid&fld=address&fld=city&fld=county&fld=stabbr&fld=regnr&rpp=25> shows that PM-10 NAAQS have likely been violated over the years. It is unclear how this monitoring data factored into the BLM's analysis and unclear how the BLM can reasonably conclude that PM-10 NAAQS will be complied with pursuant to FLPMA.

E

The Draft EIS Fails to Analyze the Impacts of Connected Actions

Regulations implementing NEPA require an agency to consider connected actions – those “closely related” – and similar actions in an EIS. 40 C.F.R. § 1508.25(a)(1); (a)(3). The purpose of the ‘connected action’ requirement “is to prevent an agency from dividing a project into multiple actions, each of which individually has an insignificant environmental impact, but which collectively have a substantial impact.” *Great Basin Mine Watch v. Hankins*, 456 F.3d 955, 969 (9th Cir. 2006). A connected action is defined as being “closely related” to other actions, and are considered “connected” if they:

- (i) Automatically trigger other actions which may require environmental impact statements;
- (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously;
- (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.

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Id. Similar actions are those that “when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography.” 40 C.F.R. § 1508.25(a)(3).

In this case, there are a number of connected actions that appear connected with the South Gillette LBAs, namely a number of pending LBAs at coal mines in the Powder River Basin. The DEIS at page 1-2 indicates there are a number of pending LBAs. It does not appear that the direct, indirect, and cumulative impacts of these pending LBAs were addressed in the DEIS, in violation of NEPA.

The Draft EIS Fails to Analyze a Range of Reasonable Alternatives

NEPA requires agencies to “study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternatives uses of available resources.” 42 U.S.C. § 4332(2)(E). To achieve these ends, an EIS must “[r]igorously explore and objectively evaluate *all* reasonable alternatives.” 40 C.F.R. § 1502.14; *Utahns for Better Transp.*, 305 F.3d at 1166 (emphasis added). The alternatives analysis is “the heart” of any environmental review pursuant to NEPA. 40 C.F.R. § 1502.14. Here, the BLM failed to rigorously explore and objectively evaluate alternatives that would reduce air quality impacts, reduce global warming impacts, or otherwise present a range of reasonable alternative to ensure the decisionmaker can make a fully informed decision.

G

The action alternatives analyzed in detail for the South Gillette LBAs amount fail to represent a range of reasonable alternatives that address unresolved conflicts. For every LBA, the BLM either analyzes the proposed action (i.e., the action recommended by the private coal company) or a modified alternative that seeks to “enhance” coal recovery. No action alternative attempts to address significant issues, namely concerns over global warming, air quality, and other environmental impacts. In fact, it does not appear that environmental conflicts were even considered by the BLM in developing alternatives to the proposed actions. Rather, it appears that all action alternatives to the proposed actions seek primarily to maximize direct economic gain for the federal government.



Although the BLM analyzes a “no action” alternative for every LBA, this is not an action alternative and therefore cannot serve, alone, to fulfill the agency’s duties to analyze a range of alternatives.

Thank you for the opportunity to comment.

Sincerely,

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on behalf of:

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Executive Director
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Senior Staff Attorney
Sierra Club Environmental Law Program
San Francisco, CA

Mark Squillace

Response to Comment Letter 9: Wild Earth Guardians

Comment Response 9A: You are correct in that the Powder River Coal Production Region was “decertified” as a federal coal production region in 1990, and that it remains “decertified” currently. This is similar to most of the original federal coal production regions established as part of the Federal Coal Management Program. Coal leasing in the PRB operated as a certified federal coal production region, with leasing developed under the regional leasing process as described under 43 CFR 3420, through the 1980s.

Many of the federal coal production regions were decertified in the later 1980s, in large part because of a decline of interest in leasing federal coal.

The Powder River Coal Production Region had no leasing interest during the late 1980s. The mines that exist today were operating or already had adequate reserves to begin operating. The PRB had become a mature mining region, that is, a region where sufficient mining operations had been established to meet expected coal demand.

In 1990, based on the advice of the Powder River Regional Coal Team, BLM decertified the region. However, there were certain conditions of the decertification established in part based on the RCT’s advice. The region was decertified for production maintenance leasing, and the RCT would remain active and periodically review BLM’s leasing activity to provide advice on the leasing in a regional perspective.

In a region that is decertified, BLM is able to consider leasing by application under the rules at 43 CFR 3425. The RCT has met about once each year since the decertification. BLM has presented lease by applications to the RCT and has considered their advice on how to proceed with those applications.

You are correct that production of PRB coal has increased steadily since decertification. Part of this growth is due to an increase in the demand for electric power and the related increase in demand for steam coal as a fuel for low cost electric generation. There are also cost (mining and reclamation) advantages that have favored PRB coal over other domestic coal regions as well as the low sulfur content which results in cost-effective air pollution control.

The production increase has been made with no new mining operations opening since decertification, although several of the operations have consolidated. As shown in Figure 4-2 in the EIS, leasing under the LBA process has essentially been at the same rate as reserves existing before decertification have been being depleted. This level of leasing activity remains consistent with the 1990 decertification action.

The interpretation of the lease by application process made in this comment is incorrect, and it is not borne out by practice or results. The lease application is made to identify those lands that the applicant has identified as needed to maintain production at an existing mine. BLM identifies alternatives (Alternatives 2 and 3 in this EIS) which include more lands than are included in the application. Under these alternatives, BLM is able to reconfigure the tract in the public interest to conserve coal resources, enhance competitive potential, and mitigate impacts. BLM has frequently (in almost every LBA offered) delineated a preferred alternative smaller or larger than the application, and containing some different lands than those applied for.

It is logical, and prudent, for the lease tracts to be adjacent to one or more existing mines. These are production maintenance tracts and, as such, are located so that existing operations can pass onto these tracts without gaps requiring the significant additional disturbance and cost required to open a new pit rather than extend an existing one.

We have had several sales where there were multiple bids and sales where the applicant was not the successful bidder. The sales are always competitive, even if there is only one bidder, because the BLM sets a fair market value and will not accept any bid that does not meet that value. These values are not disclosed, and bidders recognize that they need to bid a fair value or the bids will be rejected. BLM has rejected numerous bids that were the apparent high bid.

All of this evidence demonstrates that BLM's practice has ensured fair market values are received for LBA tracts that are designed by BLM to allow production to be maintained at already operating mines, with the coal resource being managed to avoid bypass, isolation, and to encourage competition.

The BLM properly established the Powder River Coal Production Region as required by 43 CFR 3400.5. The change to the region was published in the *Federal Register*. BLM has, and continues to manage the lease by application process in conformance with the status of the Powder River Coal Production Region, and the criteria and conditions for the change to a decertified coal region.

Processing the South Gillette LBAs is consistent with the practice we follow in the decertified Powder River Coal Production Region. These are production maintenance tracts, have been reviewed by the Powder River Regional Coal Team, and are being reviewed under the leasing by application process (43 CFR 3425).

The Powder River Regional Coal Team meetings are public and provide an opportunity for public comment and statements. BLM staff will provide the team a briefing of your request at the team's meeting later this year. You are

welcome to present your petition, either in person or in writing, to the team at that meeting. The meetings are published in the *Federal Register* and a press release is posted on the BLM web site. To accommodate you better we have added your name and the email address you provided with your comment letter to the email notification list for the RCT meetings.

Comment Response 9B: The Powder River Regional Coal Team was established under the coal program regulations (43 CFR 3400.4) for the purpose of the duties specified in 43 CFR 3420. The RCT is not an advisory group as established under the regulations for advisory committees under 43 CFR 1784, although it is bound to use the public participation procedures (43 CFR 1784.4-2, 43 CFR 1784.4-3, and 43 CFR 1784.5) as in the advisory committee regulations.

The item you point out (from Charter PRBRCT, approved October 24, 1995, Section 6.c (11)), where the RCT's advice *shall be accepted*, with certain exceptions, pertain only to one specific duty: regional leasing in a certified coal production region. The Powder River Coal Production Region has not operated in the regional leasing mode since 1990.

The section of the charter defining the team's duties when operating in the LBA mode (Charter PRBRCT, approved October 24, 1995, Section 6.b) is relevant to the way the team is presently operating. The role is that of an advisor to solicit and consider public views.

In section 6.a of the charter, which defines all operations of the team, if BLM chooses not to accept the team's recommendations, "a written explanation of the reasons will be prepared by the BLM Director's authorized representative and provided to the team and the public."

Comment Response 9C: The purpose of this EIS is to disclose the potential effects to the natural and human environment from the proposed leasing of four LBAs that have been requested to maintain production of four currently operating mines in the Powder River Basin of Wyoming. The EIS assesses the site-specific impacts resulting from a range of alternative actions to the proposed action of leasing a specific tract of land. The EIS also assesses the cumulative impact on the environment which results from the incremental impact of the proposed LBA when added to other past, present, and reasonably foreseeable future actions that would add to the impact of the proposed action. In this EIS, cumulative impacts are discussed in Chapter 4.

The analysis of cumulative impacts in this EIS is based on a comprehensive study designed to provide a basis for assessing the level of cumulative impacts resulting from reasonably foreseeable actions occurring in the Powder River Basin. The analysis recognizes that the areal extent of each type of effect depends on the environmental value affected. In recognition, the "effect area"

for each value is scaled to be that area where the effects of development in the PRB can be estimated. In some cases this is a multiple county area, in others it is multi state, in others it is just the actual lands that are affected. For each environmental value, the effect area extends the analysis of the cumulative impact to where that impact is no longer quantifiable or is at a level as to be insignificant.

The comment suggests that this EIS look at actions in a variety of areas with the only connection being that the actions are under the jurisdiction of the Department of the Interior. This approach does not recognize that each of these proposals are federal actions in their own right, and must be evaluated in light of the effects of that action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.

Comment Response 9D: The EIS addresses a full range of alternatives to the lease by application submitted by the lease applicant. The range includes an alternative which would represent all lands that include coal reserves that are comparable to those applied for, which may be efficiently recovered with the LBA, which may enhance competitive interest in the tract, and which could be bypassed if not leased. On the other end of the range is the No Action Alternative.

The comment suggests this is not a “no action” alternative, but does not provide a reason. This alternative assumes that the lease as applied for is rejected, and that no lands are offered for lease.

The BLM is a multiple use land management agency that manages the federal coal reserves under the predominantly private land surface in the Gillette area of the Powder River Basin. In the land area covered by these LBAs, only 3% of the surface ownership is federal land. Although there are many wind and solar resources that can be used for energy development, the BLM does not have authority over private land surface use and surface development. The BLM neither permits for the surface disturbance nor for the mining operations in coal mining operations. Therefore, the reasonable alternative options available for BLM to review in this EIS are leasing alternatives exploring the lease size, and shape, and the No Action Alternative where leasing one or more of these LBAs does not occur.

Other forms of addressing increasing electric demand are noted in this EIS. Ongoing scientific research has identified the potential impacts of GHG emissions on the global climate. The addition of non carbon fueled electric generation sources could reduce GHG emissions. Further, the addition of alternate sources of electric generation would conserve carbon fuels, which are not renewable in the short term, and would provide a broader portfolio of electric sources. The EIS estimates likely long term electric generation

portfolios. However, the specific environmental effects of the variety of alternative electric generation technologies are not in the scope of this EIS. These technologies would be evaluated under NEPA as they are proposed to be permitted and built.

Comment Response 9E: Ozone has been included in discussions on emissions of NO_x since NO_x is one of the main ingredients involved in the formation of ground level ozone. Ozone has the same chemical structure whether it occurs miles above the earth or at ground-level and can be "good" or "bad," depending on its location in the atmosphere. In the earth's lower atmosphere, ground-level ozone is considered "bad." Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit NO_x and VOC that help form ozone. Ground-level ozone is the primary constituent of smog. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" ozone, but even rural areas are also subject to increased ozone.

Under the Clean Air Act, EPA has set protective health-based standards for ozone in the air we breathe. Prior to May 27, 2008, the NAAQ 8-hour standard for ozone was 0.080 ppm (157 µg/m³). In May of 2008, EPA revised the 8-hour standard to 0.075 ppm (147 µg/m³). According to the EPA AirData website, ozone levels have been monitored in the PRB since 2001. An exceedance of the ozone 8-hour standard occurs if 4th-highest daily maximum value is above the level of the standard (0.08 ppm prior to 2008 and 0.075 ppm since 2008). There are two ozone monitoring stations available: one with data starting in 2001 and the other with data starting in 2003. The Thunder Basin National Grassland monitor read 0.074 ppm in 2003 and 0.074 ppm in 2008. All other values read at the Thunder Basin National Grassland monitor were below that level. The south Campbell County monitor read 0.077 ppm in 2003 and 0.072 ppm in 2007. All other values read at the Thunder Basin National Grassland monitor were below that level. This discussion as well as associated tables has been included in the final EIS.

The EIS evaluates PSD, and it is addressed in Chapters 3 and 4. Section 169 of the Clean Air Act addresses visibility protection. On June 15, 2005, EPA issued final amendments to its July 1999 regional haze rule. These amendments apply to the provisions of the regional haze rule that require emission controls known as Best Available Retrofit Technology, or BART, for industrial facilities emitting air pollutants that reduce visibility. The nearest Class I PSD areas to the general analysis area for this LBA are Wind Cave National Park (about 100 miles east), and the Badlands Wilderness Area (about 150 miles east). There are also five Class II PSD areas 80 to 100 miles away from the LBA general analysis area; all others are at least 100 miles away. These are listed in Table 3-9 in the DEIS. This EIS uses two tools to evaluate visibility impact. Regional modeling is used to estimate and disclose the

change in the number of days that a change of 10% or more in extinction would occur by 2010, in relation to a baseline, also modeled, for 2002. On site, monitoring at Class I areas is included to show actual measured changes in visibility over the period of record (1989 to 2005). While monitoring results show annual variability in visibility impairment at the two sites illustrated in Figure 3-20 in the DEIS, the trend is stable overall with some slight lessening of impairment in recent years.

We were unable to locate the statement in the EIS where BLM does not believe it has to perform an analysis of impacts to the PSD. There is a statement in Section 4.2.3 explaining Table 4-11, where it is clarified that the cumulative air quality modeling “did not separate PSD increment-consuming sources from those that do not consume increment.” This explains that the modeling was designed to include both known and predicted sources, regardless of regulatory status. Also, Appendix H (old Appendix K) does include an explanation of the fact that PRB surface mines have not been subject to permitting under the PSD regulations because the mine emissions that are subject to PSD applicability levels fall below regulatory thresholds.

Because the WDEQ/AQD requires the PRB mines to collect air quality data, which is discussed in Section 3.4.2.3, the eastern PRB is one of the most intensely monitored areas in the world. According to EPA AirData, in 2007 there were six TSP monitors, five PM_{2.5} monitors and 36 PM₁₀ monitors in the Wyoming portion of the PRB. Data for TSP dates back to 1980 and data for PM₁₀ dates back to 1989. Approximately 57,000 TSP samples had been collected through 2004, and approximately 47,550 PM₁₀ samples had been collected through 2007. Information about the regulatory framework, the monitoring network, and PM₁₀ concentration trends since monitoring began are included in Appendix H (old Appendix K). Existing site-specific air quality information is included in the SGAC EIS Supplementary Information document, which is available on request. No exceedances of the 24-hour or annual PM₁₀ particulate standards have been documented by the Belle Ayr, Coal Creek, Caballo, or Cordero Rojo mines through 2006.

The federal standard for particulate matter was measured as TSP until 1987. This measurement included all suspendable dust (generally less than 100 microns in diameter). In 1987, EPA changed from a TSP-based standard to a PM₁₀-based standard. In 2006, EPA again revised the air quality standards for particulate matter by changing the 24-hour fine particle standard from the previous level of 65 µg/m³ to 35 µg/m³ and revoking the annual PM₁₀ standard of 50 µg/m³. EPA retained the existing annual PM_{2.5} standard of 15 µg/m³ and the 24-hour PM₁₀ standard of 150 µg/m³. These revisions took effect on December 18, 2006. The current federal ambient air standards are shown in Table 3-6. Wyoming added the PM₁₀ standard in 1989. Even with the evolution of state or federal small size particulate standards, TSP is still

monitored in some PRB locations as a surrogate for PM₁₀ and as an indication of overall atmospheric levels of particulate matter.

The Task 1A Report for the PRB Coal Review (BLM 2005a) documents the modeled air quality impacts of operations during a baseline year (2002), using actual emissions and operations for that year. Emissions from permitted minor sources were estimated due to unavailability of actual emissions data. The baseline year analysis evaluated impacts both within the PRB itself and at selected sensitive areas surrounding the region. The analysis specifically looked at impacts of coal mines, power plants, CBNG development, and other development activities.

The Task 2 Report for the PRB Coal Review (BLM 2005d) identifies reasonably foreseeable development activities for the years 2010, 2015, and 2020. The updated Task 3A report for the PRB Coal Review Cumulative Air Quality Effects (BLM 2006b) for 2015 uses a revised base line year of 2004 with revised projected 2015 scenarios. Impacts for 2020 were projected qualitatively based on evaluation of anticipated changes in emissions and on modeled impacts for the 2015 lower and upper coal production scenarios. BLM has updated the model and conducted impact analysis for the year 2015. Air quality modeling indicates the projected mine activities at the four South Gillette area operating mines will be in compliance with the PM₁₀ and PM_{2.5} near-field and short-term NO₂ air standards for the 2015 modeled air quality impacts at their currently permitted mining rates. All applicants have indicated that they propose to mine the respective LBA tracts at a rate below the permit levels.

Based on the modeling results the annual PM₁₀ and PM_{2.5} in Wyoming is predicted to be over the Wyoming SAAQS for the 2015 lower and upper development scenarios. The 2004 maximum modeled 24-hour PM₁₀ are greater than the 150 µg/m³ ambient air standard for some near-field receptors near PRB sources in Wyoming. For the Wyoming near-field receptors, the modeling projects maximum 24-hour PM₁₀ levels greater than the 150 µg/m³ ambient air standard for the 2015 lower and upper coal production scenarios at some receptors. For the 2015 upper development scenario, the modeled levels are above 150 µg/m³ for several relatively small areas surrounding coal mines and CBNG operations in the Wyoming PRB. As shown in Table 4-10, the maximum modeled PM₁₀ impacts from all sources for the 2015 upper coal production scenario are nearly three times the 24-hour WAAQS standard.

As discussed in Section 3.4.2.2.1, modeling tends to over-predict the 24-hour impacts of surface coal mining and, as a result, WDEQ/AQD does not consider short-term PM₁₀ modeling to be an accurate representation of short-term impacts. In view of this, a memorandum of agreement between WDEQ/AQD and EPA Region VIII, dated January 24, 1994, allows WDEQ/AQD to conduct monitoring in lieu of short-term modeling for assessing coal mining-related impacts in the PRB. This agreement also requires Wyoming to implement “Best

Available Work Practice” mitigation measures at any mine where an exceedance of the PM₁₀ and PM_{2.5} NAAQS has occurred. The monitored exceedances at surface coal mines in the Wyoming PRB and the measures that WDEQ/AQD has implemented or is proposing to implement to prevent future exceedances of the PM₁₀ NAAQS are discussed in Chapter 3, Sections 3.4.2.1 and 3.4.2.3. It should be noted that WDEQ/AQD issues permits to mine coal. AQD cannot issue any permit that violates ambient air quality standards.

Comment Response 9F: You are correct that a number of LBAs are pending in the PRB. We have grouped the applications for NEPA evaluation. Each grouped EIS considers those LBAs that are geographically clustered in that group. It also includes a comprehensive analysis of cumulative direct and indirect impacts of all reasonably foreseeable development activity, including all the applications shown on Figure 1-1.

LBAs are combined by mine group, in the same mine groupings that are studied in the PRB coal review. Chapter 4 discusses development in the Powder River Basin and the consequences of that development. Both low and high production scenarios with projections to the year 2020 are also discussed. Past, present and reasonably foreseeable development and the cumulative environmental consequences of that development are also detailed.

Comment Response 9G: The EIS addresses a full range of alternatives to the lease by application submitted by the lease applicant. The range includes an alternative which represents all lands that include coal reserves that are comparable to those applied for, which may be efficiently recovered with the LBA, which may enhance competitive interest in the tract, and which could be bypassed if not leased. On the other end of the range is the No Action Alternative. This alternative assumes that the lease as applied for is rejected, and that no lands are offered for lease.

Action alternatives assume the decision is to offer a lease, with the assumed result that the coal is leased and ultimately mined. No action assumes the coal is not offered. The affects of these alternatives are evaluated both specific to the lands that would or would not be offered for lease, as well as the effects of leasing added to the cumulative effects of past, present, and reasonably foreseeable future PRB development.

The EIS recognizes that coal mining will continue at the mines adjacent to the proposed LBAs under any of the alternatives. This activity is permitted, and impacts of this activity would not be mitigated by any alternative to the proposed action. Your comment suggests, but does not specify, alternatives to activity already permitted. We did not include alternatives for this purpose, since they are beyond the scope of the decision options proposed in this EIS.

The BLM is a multiple use land management agency that manages the federal coal reserves under the predominantly private land surface in the Gillette area of the PRB. The BLM does not regulate the uses for which coal can be used. In the land area covered by these LBAs, only 3% of the surface ownership is federal land and 97% is privately owned surface. Although there are many wind and solar resources that can be used for energy development, the BLM does not have authority over private land surface use and surface development. The BLM neither permits for the surface disturbance nor for the mining operations in the Powder River Basin. Therefore, the reasonable alternative options available for BLM to review in this EIS are leasing or not leasing alternatives which explore the lease size, and shape, and the No Action Alternative where leasing one or more of these LBAs does not occur.

December 22, 2008

BLM Casper Field Office
ATTENTION: Teresa Johnson
2987 Prospector Drive
Casper, WY
Fax: (307) 261-7578

From: Kenneth Duvall
9498 Hwy 59, HCR 83
Gillette, WY 82718

On page 3-20 of the BLM October 2008 Environmental Impact Statement, it is stated the Maysdorf II LBA area is "unfavorable" for conventional oil and gas discoveries. One oil and gas representative has told us that "it is a big stretch for the BLM to state the current outlook for conventional oil and gas discoveries in the vicinity of the Maysdorf II LBA is "unfavorable". Another oil representative wrote "don't you believe that the oil is being completely depleted in your area". As we understand it, labeling the conventional oil and gas as "unfavorable" would be risking depreciation of the present value of the patented or "fee" oil and gas estates in the area, including landowners, the state of Wyoming and the federal government.



Since the EIS states that the "study area has not been tested", we (The Duvalls) request that a study be done for "conventional" oil and gas in the Maysdorf II LBA before a permit is issued.

We request this for the following reasons:

At the present time an oil and gas company is negotiating for lease of available land for drilling in the Maysdorf area.

We understand there is a moratorium on all drilling on federal lands where coal is available, due to a lawsuit.



From negotiations with Rio Tinto/CMC, we have reason to believe they have entered into a "no drill" agreement with Duncan Oil and Gas, and possibly with other companies in the BLM areas. Due to a "gag clause" included in all Rio Tinto Energy America contracts, a judge will need to assist in obtaining the paperwork to substantiate this.



Thank you for considering this matter.

Please note that I, Kenneth Duvall, am trustee of the Norma Duvall Trust, whose land is included in the Maysdorf II LBA.

Response to Comment Letter 10: Kenneth Duvall

Comment Response 10A: Section 3.3.2.1.1 discusses conventional oil and gas activity in the general analysis area and mentions that as of December 2007 only two oil wells have been drilled within the LBA tracts since 2000. The most recent well was completed in 2006. No conventional gas wells have been completed within the four LBA tracts study areas since 1997. Also, Section 3.3.2.2.1 states that although the general South Gillette analysis area appears to be unfavorable for additional conventional oil and gas discoveries, the entire study area has not been tested. The BLM's Wyoming Reservoir Management Group concludes that having only two wells drilled on the LBA tracts since 2000 would make the area unfavorable for additional oil and gas discoveries. The BLM is not responsible for conducting studies to determine if an area is favorable for conventional oil and gas discoveries. There are private companies available that could do that type of analysis for you.

Comment Response 10B: We are unaware of a moratorium on all drilling on Federal lands where coal is available due to a lawsuit.

Comment Response 10C: The BLM is not familiar with or privy to any agreements between Rio Tinto/CMC and Duncan Oil and Gas or with any other companies concerning a "no drill" agreement.

"Leslie Glustrom" <lglustrom@gmail.com>
12/24/2008 08:22 PM
To
"Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>
cc

bcc

Subject
South Gillette DEIS--Glustrom Comments

Hi Teresa--Attached are some comments on the South Gillette Coal Lease Application Draft Environmental Impact Statement.

I truly appreciate all your work, but am concerned about the seriousness of leasing over 700 million tons of federally-owned coal and of the myriad extremely serious environmental impacts that will ensue.

I hope your holiday is/was fun.

Sincerely, Leslie

--
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Bureau of Land Management
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Casper, Wyoming 82604

December 24, 2008

RE: The South Gillette Coal Lease Applications Draft Environmental Impact Statement

Dear Ms. Johnson,

Thank you for the opportunity to comment on the Draft Environmental Impact Statement for the South Gillette Area Coal Lease Applications issued in October 2008. First of all, thank you to you and the team that has prepared the Draft EIS. Clearly a lot of work went into the document and I appreciate that hard work. Nonetheless I am very concerned about the quality of the Draft Environmental Impact Statement. The correct measure of quality is not the number of pages, but rather the quality of the information in the pages-and the clarity with which the direct, indirect, cumulative impacts and the irretrievable loss of resources are discussed and presented. Unfortunately, this DEIS fails very seriously to properly analyze and present these impacts. Major new analyses must be completed and a very serious rewriting is needed to properly present impacts and irretrievable loss of resources so that the decision maker has a clear presentation of the environmental impacts, as envisioned by the National Environmental Policy Act. Presently, the DEIS is so dense and difficult to read that it is almost impossible to tease the most important information out of it and it really serves as a several hundred page smoke-screen rather than as a document that clearly informs the decision maker.

Before presenting my comments, I request that commenters be given another 30 days to review the Draft EIS. The EIS is very dense and extremely difficult to read in a comprehensive fashion for the reasons explained below. Also, the Final Environmental Impact Statement for the West Antelope II Lease Application was recently released and an analysis of how the Bureau of Land Management ("BLM") replied to the extensive comments on that document can help inform the comments on the South Gillette DEIS since in many cases the BLM used the same (often seriously flawed) data and analysis for

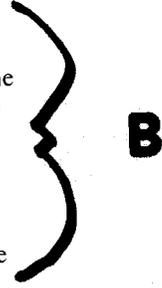


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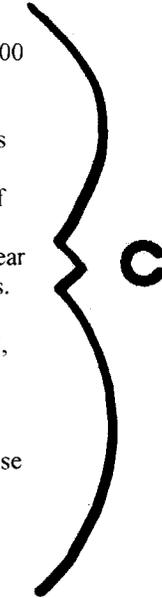
both the West Antelope II and the South Gillette EISs. As a result, I ask that the comment deadline for the South Gillette DEIS be extended until January 24, 2009.

My comments are as follows:

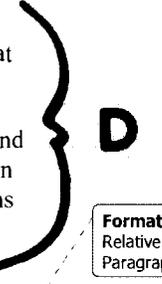
1) Lease by Application is Inappropriate in the Powder River Basin—the Largest Coal Producing Region in the United States. It is highly inappropriate for coal mining companies to be designing lease applications in the Powder River Basin, the largest coal producing region in the United States. Rather, the PRB should designate a coal producing region under 43 CFR §§ 3400.5 and the lease tracts should be designed and leased in accordance with 43 CFR §§ 3420-3422. It is clearly an abuse of administrative discretion to designate the Powder River Basin as not a coal producing region and allow “lease by application” sales as it is presently doing. This must be addressed before any further action is taken on the South Gillette or any other coal lease in the Powder River Basin.



2. The Draft EIS is so Dense as to Be Essentially Unreadable: While I appreciate the tremendous effort that goes into these EISs—the decision to lease over 700 million tons of federal coal is an extremely serious decision given the multitude of impacts that will follow from both the mining and the use of the coal. Presently these impacts are buried in pages and pages of dense text and justified by old data and serious impacts mentioned in passing but not clearly highlighted in either the Executive Summary or the text of the EIS. This needs to be addressed through better formatting of both the Executive Summary and of the text of the EIS. Presently the Executive Summary is approximately 40 pages of dense text and tables with no subheadings or clear delineation of direct, indirect and cumulative impacts and irretrievable loss of resources. These should all be clearly identified in the Executive Summary, with references provided to the pages in the text where the conclusions are drawn. In the text of the EIS, each chapter should be prefaced with a Table of Contents and for each heading and subheading, the conclusions drawn in that section should be clearly stated at the beginning of the heading or subheading—e.g. in bold type at the beginning of the subheading. As it is presently, the reader has to comb through hundreds of pages of dense text looking for impacts and comparing data and analytical methods spread all over the document. While I sincerely appreciate the efforts of the staff to produce these large documents, unless these readability issues are addressed through major rewriting and highlighting of key conclusions, the document is close to useless for readers—and presumably for busy decision makers.



3. Assumptions About Reclamation Must Be Replaced with An Analysis of Existing Reclamation Efforts for Each Mine: Throughout the DEIS it is assumed that the mine will be reclaimed. This is a highly questionable assumption. I was unable to locate where existing reclamation efforts for each mine were tabulated. If that information is not provided then it should be provided in an easily accessible location and all analyses related to what happens after reclamation is complete need to be rewritten in light of how much of the existing mine is presently reclaimed and reasonable projections are made as to how much of the proposed lease tract will be reclaimed in light of the



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increasing overburden that will have to be moved and moved back again as the mine expands.

4. The EIS Needs to Present Existing Overburden Statistics So That Proper Comparisons Can be Made on Everything from Air Pollution Analyses to Mine Reclamation Assumptions: Page 3-10 presents the average overburden thickness for the proposed lease areas. This should also be presented as a range—and preferably as sort of a weighted average (e.g. what percentage of the land is at what overburden level) and this should be translated into stripping ratios, preferably providing a range, an average and a weighted average for each lease area. The overburden and stripping ratio also needs to be provided for the existing mines so that proper comparisons can be made related to air pollution modeling and reclamation projections. Generally speaking, it can be assumed that the more overburden and the greater the stripping ratios the worse the air pollution and the more difficult it will be to reclaim the mine.

E

5. Air Pollution Data Needs to be Updated and Adjusted for Stripping Ratios: Others are likely to comment on the air pollution data. Some of the modeled PM10 values are very close to the Annual NAAQS and there are violations of 24 hour standards (e.g. see pages ES 19-23 and ES-37). This is all of concern and it isn't clear that the models have properly accounted for increasing overburden. As overburden and stripping ratios increase, more blasting will be required and more dirt will need to be moved affecting the quantity of air pollutants that are created. Also, some baseline data was taken from mines that are north of Gillette—many miles away from these mines. (See page 3-29.) The reasons for this are not clear and it doesn't make much sense if, as is claimed on page 3-30 the Powder River Basin is “one of the most intensely monitored areas in the world.”

F

6. Visibility Impacts and the Clean Air Act Provisions Need to Be Clearly Presented: Visibility issues are discussed on pages 3-68 to 3-70 and the key table is on page ES-38. This is a prime example of the DEIS serving to confuse rather than clarify a key issue. The requirements of the Clean Air Act are to remedy existing and prevent future impairment of visibility in Class I areas. (This concept is buried in a paragraph at the bottom of page 3-68.) There are numerous Class I areas near the Powder River Basin (see page 3-70) and existing violations of visibility standards are numerous (see page ES-38). Importantly, in order to make sense of this data the reader has to know what he or she is looking for and then flip back and forth between the pages. Table ES-9 does not appear to be explained in the text of the EIS yet it is critical to an evaluation of the issue. The Badlands National Park violated the 10% impairment standard 238 days of the year or 65 % of the time. ($238/365 \times 100 = 65\%$) The federal government is supposed to be remedying existing impairments and preventing future ones rather than obscuring the issue. The graphs on page 3-71 are not informative as to the goals of the Clean Air Act. They only show how badly the standards are being violated over time. They do not show that existing impairments are being remedied, as called for in the Clean Air Act. The data in the graphs on page 3-71 is a little like saying “Gee Officer—this week I was only going 55 in a 30 mile per hour zone and last week I was going 60 so shouldn't you let me off because I'm improving??” Clearly, the goal is not just to reduce how badly the

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standards are being violated, but to eliminate the violations. Also these graphs should be updated to include 2006 and 2007 data before making a decision about leasing more federal coal in the Powder River Basin.

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4) The Use of Old Data Needs to Be Addressed: Using old data is to fail to comply with the goal of the National Environmental Policy Act regulations to use the best possible scientific data and analyses. In many cases the DEIS uses embarrassingly old data. For example the discussion of Alluvial Valley Floors on page ES-31 cites a study from 1988. This, and all other citations to old references should be updated. Mining in the Powder River Basin has been expanding rapidly in the past 15 years and using data more than a couple of years old is not likely to provide the best possible information.

} H

5) Ute Ladies'-Tresses Surveys Are Inadequate: The DEIS is clear that Ute Ladies'-Tresses are notorious for potentially flowering over a several month period and potentially laying dormant for several years. (e.g. see page H-18 and the references cited therein). Yet, surveys for Ute Ladies'-Tresses were typically conducted only once during one or possibly two years on the tracts under consideration. (e.g. see pages E-15, F-15, G-14 and H-19 in Volume 2). The nature of these surveys is obscured on page ES-33 in the Executive Summary and the Executive Summary is not very clear about when and where the surveys were conducted. Ute Ladies'-Tresses are a threatened species. No further action should happen on the coal leases until surveys are conducted during each month of potential blooming (e.g. July-October) for a minimum of three years on each of the tracts under consideration.

} I

6) Raptor Impacts Should be Carefully Assessed and Highlighted: Figures 3-25 through 3-28 show the large number of raptor nests including many golden eagle nests in the evaluation areas. The presence of these nests in and near the lease tracts should be clearly identified in both the Executive Summary and the text of the EIS so that the probable loss of raptor nests in the tracts being considered and the possible disruption of nesting raptors (including eagles) in areas surrounding the lease tracts is clearly identified for both readers and the decision maker. Note that Bald Eagles are discussed on pages 3-178 and 3-179 and this discussion is buried in a discussion of "Other Birds," (rather than with the discussion of raptors that starts on page 3-161). Once again this is very confusing for the reader who is already having a hard time finding the key issues of concern.

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7) Sage Grouse Impacts Should be Clearly Highlighted: The body of the DEIS has an extended discussion of sage grouse on pages 3-166 through 3-177 and notes the steadily declining populations of sage grouse (e.g. page 3-173) and the location of 18 sage-grouse leks in the evaluation area with 13 having been active during the survey years (see page 3-170 and Figures 3-25 through 3-28) and of the possible impacts of coal mining and oil and gas development that could reduce sage-grouse populations and breeding success (see page 3-174 to 3-177). Yet, the Executive Summary buries the discussion of sage-grouse impacts in the middle of a paragraph on page ES-33 and implies that reclamation efforts will keep the impacts on sage-grouse habitat to a minimal and apparently acceptable level. This is not the conclusion that is drawn from the body of

} K

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the DEIS. Given the concern about the sage-grouse, this is another critical issue that should be clearly highlighted in both the Executive Summary and the body of the DEIS.

} K

8) Information on Threatened, Endangered and Sensitive Species Should be Summarized and Highlighted in the Body of the DEIS: On page 3-184 the reader that wants to know about threatened, endangered or sensitive species needs to refer to Appendices E through I which most readers won't have unless they thought to ask for a copy of Volume II. This is critical information that should be clearly summarized in the body of the DEIS in Volume I. In addition to making information on threatened and endangered species easy to find, the EIS should also summarize the information in Appendix I on sensitive species as several of them are found as "Common Breeders" in some of the tracts (e.g. see Table I-4 on the Maysdorf II tract.)

} L

9) The Relationship Between Climate Change and Species Extinction Should be Thoroughly Discussed and Highlighted: Global warming and the resultant changes in climate and habitat are expected to have extremely serious impacts on species extinction. This is discussed in Working Group II report of the Intergovernmental Panel on Climate Change available at www.ipcc.ch. The IPCC results as well as the scientific studies cited in the IPCC report should be highlighted in the EIS. I have also submitted e-mail comments noting the need to discuss this indirect consequence on species. All of this should be thoroughly discussed in the EIS.

} M

10) Ocean Acidification Should Be Included as a Key Indirect Impact: If we take the coal out of the ground and oxidize it to form CO₂, one of the clearly predictable impacts will be further acidification of the oceans and loss of sensitive ocean species. This should be clearly discussed and highlighted in both the body of the EIS and the Executive Summary. Acidification of the oceans is a clear irreversible impact that must be considered before leasing over 700 million tons of federally-owned coal.

} N

11) The Loss of Carbon Stored in the Soils Should Be Analyzed and Highlighted: Disturbing the soils of the lease tracts will lead to the loss of carbon stored in the soil. This should be analyzed and quantified and clearly highlighted in the body of the EIS and the Executive Summary.

} O

12) The Discussion of Greenhouse Gas Emissions in Chapter 3 Should be Largely Replaced with a Thoughtful Discussion of This Critical Environmental Issue: The amount of greenhouse gases emitted by the leased coal should be calculated (and supplemented with other GHG emissions such as methane from the coal deposits and the carbon released during the mining operations) and then discussed in the context of the overwhelming amount of science that is available and that is referenced in the IPCC reports—as well as in the scientific papers I've submitted with my e-mail comments. In general the discussion in Chapter 4 (See pages 4-101 through 4-112) is generally better, but the comment on "solar variability" on page 4-104 should be eliminated and replaced with an analysis based on the IPCC reports. The issue of natural forcings (such as solar variability) has been carefully assessed by the IPCC (See Working Group I report and the extensive references therein) and vetted through that extensive

} P

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scientific review process. Making unsubstantiated claims that reflect the knowledge typically found on an internet blog has no place in an EIS. The emission of carbon dioxide molecules that endure for thousands of years represent indirect impacts and irretrievable loss of resources that must be thoroughly discussed and then **clearly highlighted** in both the Executive Summary and the body of the EIS.

} P

13) All the Impacts to Ground and Surface Water Quantity and Quality as Well as Wetlands Need to be Clearly Presented and Highlighted: Once again, there are serious impacts to ground and surface water quantity and quality as well as wetlands (see Chapter 3). These need to be clearly presented and highlighted in both the Executive Summary and the body of the EIS. Presently they, as with so many of the impacts and irretrievable losses, are buried in the endlessly dense text and difficult to tease out for the interested reader or the responsible decision maker.

} Q

14) The claim that Socioeconomic Impacts are Significant and Presumably Positive Needs to Be Carefully Assessed: When compared to both quantity and quality of jobs, typically development of renewable energy resources is more productive than coal mining and fossil fuel developments—and certainly a local economy is much more sustainable if it is built on resources that are not depletable, as coal is. This needs to be thoroughly analyzed and clearly presented in the EIS.

} R

Well, that is all for now. I sincerely appreciate how much work these EISs must be—but until they clearly highlight the direct, indirect and cumulative impacts and the irretrievable loss of resources through rigorous analysis and clear highlighting of the consequences, the EISs are not fulfilling their purpose under the National Environmental Policy Act and cannot be used to support an agency decision.

Thank you for the opportunity to comment on the proposed leasing of over 700 million tons of coal owned by the federal government in trust for our country—and, if we are wise, for future generations.

Sincerely,

Leslie Glustrom
4492 Burr Place
Boulder, CO 80303

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"Leslie Glustrom" <lglustrom@gmail.com>
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Subject
South Gillette Coal Lease DEIS Comments--Part 10--Alternatives and
National Transmission

HI Teresa--The final key (for now) when considering alternatives to
burning coal is to consider the concept of "shipping electrons" instead
of

"shipping coal" as we do presently--with all of the terrible
environmental

consequences from mercury emissions to climate change to coal combustion
wastes to obscuring visibility to acidifying lakes and watersheds to
causing premature deaths and contributing to childhood asthma and
elevated

levels of ozone ets. etc.

The last key is to build national transmission and ship electrons instead
of shipping coal. I've attached a news article and a PPT about American
Electric Power's vision as well as a Scientific American concept article
on the idea of a national grid. Also, Argonne National Lab has done a
background paper on High Voltage DC lines for long distance transmission
of electricity. I don't have a copy of that study but it should be cited
and summarized in the EIS.

Presently our transmission system is like a system of two lane highways
and what is being said is that we need to do for transmission what
Eisenhower did for the highway system. While no one likes transmission
(including me) it is a lot better than continuing on our present
trajectory towards run away climate change.

It is just about making electrons flow and then shipping them long
distances. We know how to do that, but we don't know how to "build"
another planet..

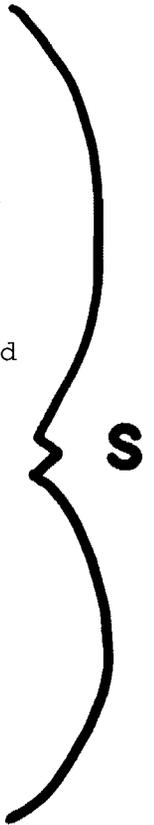
All of this should be discussed under Alternatives in the Final EIS on
the
West Antelope II Final EIS.

Well--that's all for now..

I'm sorry to have just given you a huge pile of work--but we must stop
blithely leasing coal just because that's what we've always done in the
past. We only have one planet--and it is absolutely irreplaceable.

Coal is easily replaced. The planet is not.

It is that simple and I'm afraid you will now be in the middle of that
discussion.



Thanks in advance for all your work--both past and future!

Best Regards. Leslie

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Subject
South Gillette DEIS Comments 2--Irretrievable Loss of Coal USGS 2008-1202

Hi Teresa--The South Gillette EIS must consider USGS 2008-1202 (Abstract and Link Below). Most of the coal in the Powder River Basin is buried too deep to be economically recoverable. Before leasing over 400 million tons of federally owned coal, the BLM must clearly discuss the irretrievable loss of this very valuable national resource and discuss (in detail) all the alternatives to burning coal to produce electricity in power plants that are less than 40% efficient. This is what the NEPA act is for--to make sure that we don't do something massively stupid--like burning all the coal in inefficient power plants before we've built the solar, wind, geothermal, smart-grid and transmission infrastructure that will power our country in the 21st century.

The Easter Islanders are said to have cut down all the trees before they built the boats to get off the Island--As wild as it sounds, we also risk doing something that remarkably stupid if we don't soon pay attention to the very real geologic and economic constraints facing our country's coal supplies.

All of this should be thoroughly discussed and highlighted before leasing 400 million tons of federally owned coal.

Thanks. Leslie

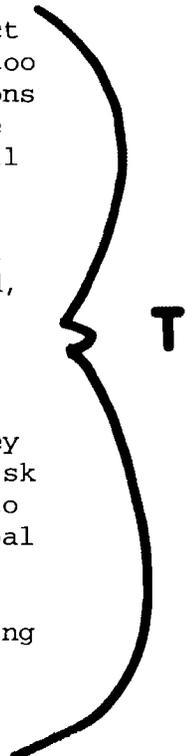
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<http://pubs.usgs.gov/of/2008/1202/>

Open-File Report 2008-1202
(Issued in August 2008)

Assessment of Coal Geology, Resources, and Reserves in the Gillette Coalfield, Powder River Basin, Wyoming By James A. Luppens, David C. Scott, Jon E. Haacke, Lee M. Osmonson, Timothy J. Rohrbacher, and Margaret S. Ellis
ABSTRACT

The Gillette coalfield, within the Powder River Basin in east-central



Wyoming, is the most prolific coalfield in the United States. In 2006, production from the coalfield totaled over 431 million short tons of coal, which represented over 37 percent of the Nation's total yearly production.

The Anderson and Canyon coal beds in the Gillette coalfield contain some of the largest deposits of low-sulfur subbituminous coal in the world. By utilizing the abundance of new data from recent coalbed methane development in the Powder River Basin, this study represents the most comprehensive evaluation of coal resources and reserves in the Gillette coalfield to date. Eleven coal beds were evaluated to determine the in-place coal resources. Six of the eleven coal beds were evaluated for reserve potential given current technology, economic factors, and restrictions to mining. These restrictions included the presence of railroads, a Federal interstate highway, cities, a gas plant, and alluvial valley floors. Other restrictions, such as thickness of overburden, thickness of coal beds, and areas of burned coal were also considered.

The total original coal resource in the Gillette coalfield for all eleven coal beds assessed, and no restrictions applied, was calculated to be 201 billion short tons. Available coal resources, which are part of the original coal resource that is accessible for potential mine development after subtracting all restrictions, are about 164 billion short tons (81 percent of the original coal resource).

Recoverable coal, which is the portion of available coal remaining after subtracting mining and processing losses, was determined for a stripping ratio of 10:1 or less. After mining and processing losses were subtracted, a total of 77 billion short tons of coal were calculated (48 percent of the original coal resource).

Coal reserves are the portion of the recoverable coal that can be mined, processed, and marketed at a profit at the time of the economic evaluation. With a discounted cash flow at 8 percent rate of return, the coal reserves estimate for the Gillette coalfield is 10.1 billion short tons of coal (6 percent of the original resource total) for the 6 coal beds evaluated. Available Products

Download OFR 2008-1202 (92.3 MB)

<<http://pubs.usgs.gov/of/2008/1202/pdf/ofr2008-1202.pdf>>

This report is available online in Portable Document Format (PDF). If you do not have the Adobe Acrobat PDF Reader

<<http://www.adobe.com/products/acrobat/readstep.html>> , it is available for free download from Adobe Systems Incorporated.

Document Accessibility: Adobe Systems Incorporated has information about PDFs and the visually impaired. This information provides tools to help make PDF files accessible. These tools and the accessible reader may be obtained free from Adobe at Adobe Access <<http://access.adobe.com/>> . The citation for this report, in USGS format, is as follows:

Luppens, J. A., Scott, D. C., Haacke, J. E., Osmonson, L. M., Rohrbacher, T. J., and Ellis, M. S., 2008, Assessment of Coal Geology, Resources, and Reserves in the Gillette Coalfield, Powder River Basin, Wyoming: U.S.

Geological Survey Open-File Report 2008-1202, 127 p.

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Subject
South Gillette Coal Lease DEIS Comments--Part 1 Irreplacable Loss of Coal

History:

This message has been forwarded.

Hi Teresa--I will be sending a series of e-mails with reports that need to be considered and summarized before preparing the Final EIS on the South Gillette area. At the very least these documents should be cited in the FEIS because they are all from very credible sources and the BLM should be using the best science and information that it has available before making a decision to lease over 400 million tons of federally owned coal. To begin with I'd like you to consider the 2007 Inventory of Assessed Federal Coal Resources that is attached. In particular, the diagrams on pages 25 and 33 are key and should be included in the Final EIS. Page ix reminds us that 70% of the coal in the Powder River Basin has a stripping ratio of greater than 10:1. The key point is that increasing overburden means that coal that has less overburden is very valuable and we should be considering the need to leave this coal in the ground, so future generations will have some relatively accessible coal to use for purposes that don't have good alternatives. The irretrievable loss of reasonably economically accessible coal is a key issue that should receive extended discussion. The supply of coal that is reasonably economically accessible is a key national security resource--and it is much more constrained than is widely understood. We have other ways of making electricity--but we don't have any way of making new sources of coal, and leaving some for critical needs of future generations is both economically and morally imperative. This should be clearly addressed in the EIS and underscored in the Executive Summary and ultimately in the Record of Decision. We have lots of way to make electricity, but the planet won't be making any more coal anytime soon and there are some purposes (e.g. making steel) for which it may be difficult to find other alternatives.

More e-mails to follow. Thanks. Leslie

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Subject
South Gillette Coal Lease DEIS Comments--Part 3 Carbon Dioxide
Persistence
Articles

Hi Teresa--Part 3 of the South Gillette DEIS Comments. It is critical to realize that once coal (highly reduced carbon) is taken out of the ground and oxidized into CO2 we've made a molecule that will be us for hundreds and thousands of years--trapping heat, warming the planet, contributing to extreme weather events and species extinction for such a long time that it might as well be considered "forever." In the process we will be irretrievably losing some of the assimilative capacity of the oceans and the atmosphere. These articles need to be cited, summarized in the EIS and the consequences clearly highlighted in both the Executive Summary and in the body of the EIS.

Carbon Dioxide stays in the atmosphere for a really long time. The attached pdfs talk about approx 25% staying for over a thousand years.

-Archer Journal of Geophys Research 110, C09S05 (2005)

- Montenegro Geo Physical Research Letters 34, L19707 (2007)

These are important to consider when we take coal out of the ground. Once the carbon becomes oxidized and turns into CO2 it will stay in the atmosphere essentially forever. Before we take coal out of the ground we have to give this the deepest of thought.

We have many ways of making electricity but once the CO2 is in the atmosphere it will be there essentially forever heating up our planet and accelerating feed back cycles. This is critical to think about before we take the coal out of the ground.

More e-mails to follow.

Thanks. Leslie

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Subject
South Gillette Coal Lease DEIS Comments Part 4--Caldeira on CO2
Reductions

HI Teresa--The attached paper from Caldeira

Geo Phys Res Letters 35

L04705 (2008)

discusses the need to essentially reduce CO2 emissions to zero to start
stabilizing the climate of the planet. This is a paper which should be
cited and summarized in the Final EIS and the implications clearly
highlighted in the Executive Summary and in the body of the EIS.

Thanks. Leslie

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Subject

South Gillette Coal Lease DEIS Comments--Part 6 Accelerated Ice Melt--
IPCC
AR4 Too Conservative

Dear Teresa--With respect to the South Gillette Coal Lease DEIS it is critical that the EIS discuss the strong evidence that, as dire as its predictions were, the IPCC Fourth Assessment was probably remarkably conservative when predicting the rate of climate change. While there will always be natural variability and cold winters to let us think that maybe all those scientists were wrong, but it is highly unscientific to think that a trend is made by one or two seasons. The climate scientists have carefully gathered and analyzed the actual data (not opinions of bloggers on the Internet...) and after 20 years of extensive scientific work (backed by the hundreds and hundreds of papers cited by the IPCC) they have concluded that global warming is "unequivocal." (See www.ipcc.ch) Moreover, the rate of change is much faster than the most conservative IPCC models predicted--as shown by the rapid loss of Arctic sea ice in the summer.

As you probably know, it is now clear to the scientists that they underestimated the rate of loss of ice sheets in the IPCC Assessment 4. A few scientific articles (or their abstracts) are attached. These issues were generally not covered in the IPCC AR4. The articles are:

- 1) "Changes in the Velocity Structure of the Greenland Ice Sheet," Rignot and Kanagaratnam, Science 311, 986 (2006)
- 2) "Abrupt Increase in the Permafrost Degradation in Arctic Alaska," Jorgensen et. al. Geo Phys Res Letters 33, L02503 (2006)
- 3) "Permafrost and the Global Carbon Budget," Zimov et.al. Science 312, 1612 (2006)
- 4) "Paleoclimatic Evidence for Future Ice-Sheet Instability and Rapid Sea-Level Rise," Overpeck et al. Science 311, 1747 (2006)
- 5) "Missing feedbacks, asymmetric uncertainties, and the underestimation of future warming," Margaret Torn, Geophys Res Letters 33, L10703 (2006)

All of this should be discussed in the Final EIS with the attached articles cited and summarized and the consequences clearly highlighted in the Executive Summary and the text of the EIS. The dynamic melting processes that are beginning to occur are stunning the climate change scientists and I wish I was exaggerating when I say you can see, hear and

feel the panic when these scientists speak about what is happening to the planet.

Before taking more coal out of the ground just to produce electricity when we have so many other good low- or non-carbon ways of producing the same electricity we need to carefully consider the impacts on the only planet we know of that supports life.

I'll send some of the data and articles from 2007 and 2008 when I next get a chance.

Thanks. Leslie

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Subject
South Gillette Coal Lease DEIS Comments--Part 7 2007 Ice Melt Data

Hi Teresa, With respect to the South Gillette the following articles as well as those identified from a thorough literature search should be cited and summarized in the EIS and the consequences clearly highlighted in the Executive The science on the dire consequences of the build up of CO2 in the atmosphere is telling us that things are probably even worse than the IPCC stated in the Fourth Assessment Report. This must be thoroughly discussed the consequences clearly stated before approving the coal lease application.

Here are the articles:

- 1) "Arctic Sea Ice Decline: Faster than Forecast,"
Geo Phys Res Letters 34, L09501 (2007)
- 2) "Greenland Surface Melt Trends 19730-2007: Evidence of a Large Increase in 2007 Geo Phys Res Letters 34, L22507 (2007)
- 3) A Younger, Thinner Arctic Ice Cover: Increased Potential for Rapid, Extensive Sea-Ice Loss," Geo Phys Res Letters 34, L 24501 (2007)
- 4) "Pushing the Scary Side of Global Warming,"
Science 316, 1412 (2007)
- 5) "Why is Climate Sensitivity So Unpredictable?"
Science 318, 629 (2007)
- 6) "Climate Change and Trace Gases," Phil Trans Royal Society A 365, 1925 (2007)
- 7) "Disappearing Arctic Lakes," Science 308, 1429 (2005)

Thanks. Leslie

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Subject

South Gillette Coal Lease DEIS Comments Part 8- Risks to Species from CO2 Accumulation Plus Carbon Loss From Soils and Southwest Drying

Hi Teresa--With respect to the South Gillette DEIS, the CO2 that will be formed once the coal is taken out of the ground poses very serious risks to species all around the planet and this should be carefully analyzed and considered before issuing the Final EIS.

I've attached a few articles to get you going. They all contain many references that should also be discussed in the FEIS along with any scientific articles that appear before the FEIS is issued. I've added a couple of more on related subjects including the drying of the interior west and the increasing loss of carbon from the soils--one of the feedback loops that appears to be beginning. I've also included a classic Jim Hansen paper from 2005 on the energy imbalance on the planet. It is key to

a thorough discussion of the science.

All of these articles should be cited and summarized in the EIS and the consequences clearly highlighted in the Executive Summary and the text of the EIS.

The articles are:

- 1) "Past Peak Water," SW Hydrology (2006)
- 2) "Carbon Losses From All Soils Across England and Wales from 1978-2003," Nature 437, 245 (2005)
- 3) "Extinction Risk From Climate Change," Nature 427, 145 (2004)
- 4) "Climate Warming and Disease Risks for Terrestrial and Marine Biota," Science 296, 2158 (2002)
- 5) "Earth's Energy Imbalance: Confirmation and Implications," Science 308, 1431 (2005)
- 6) "Coral Reefs Under Rapid Climate Change and Ocean Acidification," 318, 1737 (2007)

Clearly, the threat to species is much broader than just what will happen in the vicinity of the mines in the Powder River Basin. This must all be discussed and carefully considered before approving a lease to take more coal out of the ground.

Also the EIS should thoroughly discuss the irretrievable loss of sequestered carbon contained in the soils that will be disturbed by mining. Once disturbed it is highly likely that the carbon contained in

the soils will be lost to the atmosphere as either CO2 or CH4, further accelerating the feedback cycles of global warming and increased loss of carbon from the soils, permafrost, vegetation and oceans. All of this should be quantified and discussed in the EIS and the consequences clearly highlighted in the Executive Summary and the text of the EIS.

Thanks. Leslie

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Subject
South Gillette Coal Lease DEIS Comments Part 9A--Alternatives--CSP

Dear Teresa--Before finalizing the EIS for the South Gillette coal lease it is imperative that alternative ways of generating electricity be discussed in detail. A key technology for displacing coal plants is Concentrating Solar Power--which produces steam to drive a steam turbine by harvesting and concentrating sunlight. There are several summaries of the potential for Concentrating Solar Power attached--as well as many articles about utilities that are moving ahead with CSP developments. Instead of burning coal to boil water and produce electricity in power plants that are less than 40% efficient, we can boil water to produce the steam with the "sunlight and mirrors" of CSP technology. Then A second e-mail will follow with more references. There is lots of information readily available on wind and geothermal. A key technology for replacing steam fired plants is Concentrating Solar Power. I've attached:

- 1) A two page information sheet with a few key references on it.
- 2) An Introduction to Concentrating Solar Power (e.g. Solar Thermal Electric) by Ausra (with much more information available at www.ausra.com)
- 3) David Mills conceptual paper on meeting most of our electric needs with CSP
- 3) Several media clips on utilities moving ahead with CSP

Technical information is available at www.nrel.gov/csp/troughnet

We can boil water with sunlight and mirrors--we don't need to burn coal just to boil water.

The key to making this work is to build national transmission and start shipping electrons around the country instead of shipping coal on mile long trains. The key is to ship the finished product (i.e. electricity) not shipping the fuel (i.e. coal.) Some references on the concept of national transmission will be forwarded.

We have more than enough solar potential to run the country many times over—but we have to decide the planet is worth it and not keep burning coal just to boil water because that is how they did it 100 years ago!

Thanks. Leslie

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Subject

Fwd: South Gillette Coal Lease DEIS Comments--Part 9B--Alternatives--CSP

Hi Teresa--9B is on CSP as an alternative to mining and transporting coal to boil water. The original "9B" e-mail is below but perhaps it bounced back.

With CSP we use the country's abundant solar resource in the southwest and

ship electrons instead of shipping coal.

I've attached Dr. David Mills' concept paper on the ability of CSP to meet grid demand for electricity. It is also available on the Ausra website www.ausra.com

I've split this e-mail up and will forward the California study on CSP in the next e-mail.

Thanks. Leslie

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----- Forwarded message -----

From: Leslie Glustrom <lglustrom@gmail.com>
Date: Dec 24, 2008 1:58 PM
Subject: South Gillette Coal Lease DEIS Comments--Part
9B--Alternatives--CSP
To: "Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>

Dear Teresa--Before finalizing the South Gillette EIS it is imperative that

alternative ways of generating electricity be discussed.

There is lots of information readily available on wind and geothermal. A key technology for replacing steam fired plants is Concentrating Solar Power. This e-mail provides the following paper:

1) David Mills conceptual paper on meeting most of our electric needs with CSP

2) The Black and Veatch study of CSP benefits for California.

These summaries should be cited and summarized as part of a discussion of alternatives to blindly going forward with the mining and burning of coal.

The availability of a cost-competitive, semi-dispatchable steam technology that is ready to scale now must be thoroughly discussed in the EIS and clearly highlighted in the Executive Summary and the text of the EIS.

Technical information is available at www.nrel.gov/csp/troughnet

We can boil water with sunlight and mirrors—we don't need to burn coal just to boil water.

The key to making this work is to build national transmission and start shipping electrons around the country instead of shipping coal on mile long trains. The key is to ship the finished product (i.e. electricity) not shipping the fuel (i.e. coal.)

We have more than enough solar potential to run the country many times over—but we have to decide the planet is worth it and not keep burning coal just to boil water because that is how they did it 100 years ago!

Thanks. Leslie

Leslie Glustrom
4492 Burr Place
Boulder, CO 80303

lglustrom@gmail.com
303-245-8637

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Leslie Glustrom with Clean Energy Action
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--

"Leslie Glustrom" <lglustrom@gmail.com>
12/26/2008 03:19 PM
To
"Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>
cc

bcc

Subject
Fwd: South Gillette Coal Lease DEIS Comments--Part 9C--Alternatives--CSP

Hi Teresa--I've attached the Black and Veatch study on CSP for California. It provides lots of background information on this important alternative for producing solar (thermal) electricity. Thanks. Leslie

Leslie Glustrom with Clean Energy Action
Boulder, Colorado
www.cleanenergyaction.org
303-245-8637
lglustrom@gmail.com

----- Forwarded message -----
From: Leslie Glustrom <lglustrom@gmail.com>
Date: Dec 24, 2008 1:58 PM
Subject: South Gillette Coal Lease DEIS Comments--Part 9B--Alternatives--CSP
To: "Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>

Dear Teresa--Before finalizing the South Gillette EIS it is imperative that alternative ways of generating electricity be discussed.

There is lots of information readily available on wind and geothermal. A key technology for replacing steam fired plants is Concentrating Solar Power. This e-mail provides the following paper:

- 1) David Mills conceptual paper on meeting most of our electric needs with CSP
- 2) The Black and Veatch study of CSP benefits for California.

These summaries should be cited and summarized as part of a discussion of alternatives to blindly going forward with the mining and burning of coal.

The availability of a cost-competitive, semi-dispatchable steam technology that is ready to scale now must be thoroughly discussed in the EIS and

clearly highlighted in the Executive Summary and the text of the EIS.

Technical information is available at www.nrel.gov/csp/troughnet

We can boil water with sunlight and mirrors—we don't need to burn coal just to boil water.

The key to making this work is to build national transmission and start shipping electrons around the country instead of shipping coal on mile long trains. The key is to ship the finished product (i.e. electricity) not shipping the fuel (i.e. coal.)

We have more than enough solar potential to run the country many times over—but we have to decide the planet is worth it and not keep burning coal just to boil water because that is how they did it 100 years ago!

Thanks. Leslie

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"Leslie Glustrom" <lglustrom@gmail.com>
12/24/2008 02:42 PM
To
"Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>
cc

bcc

Subject
South Gillette Coal Lease DEIS Comments--Part 5--Climate Change and
Species Loss--IPCC Working Group II

HI Teresa--This bounced back because it was too big.

I took off the IPCC WGII Technical Summary, but ask that you go to
www.ipcc.ch and read it as it related to species extinction and then cite
and summarize it in the EIS for the South Gillette coal lease.

Also, the IPCC in turn cites many scientific articles on the relationship
between global warming and species extinction. These articles should be
cited and summarized in the EIS. The relationship between a coal, CO2, a
warming planet and species extinction is very, very serious and must be
treated as such in the EIS on the South Gillette coal leases.

Sincerely, Leslie Glustrom

lglustrom@gmail.com
303-245-8637

----- Forwarded message -----

From: Leslie Glustrom <lglustrom@gmail.com>
Date: Wed, Dec 24, 2008 at 12:13 PM
Subject: South Gillette Coal Lease DEIS Comments--Part 5--Climate Change
and Species Loss--IPCC Working Group II
To: "Teresa_Johnson@blm.gov" <Teresa_Johnson@blm.gov>

Hi Teresa--Taking coal out of the ground and turning it into CO2 can be
predicted to contribute to species loss around the planet.

It is essential therefore that the EIS thoroughly discuss the
relationship between climate change and species loss. This is addressed
in

the report of Working Group II to the IPCC as well as in the numerous
scientific articles that are discussed in the IPCC report. The full IPCC
reports can be accessed at www.ipcc.ch and the scientific articles are
referenced at the end of each chapter. The EIS needs to cite these
extensive peer-reviewed studies and include a detailed assessment of this
science on the relationship between climate change and species loss. The
irretrievable loss of species needs to be clearly highlighted in the
Executive Summary and the text of the EIS.

When coal comes out of the ground it will be oxidized much faster than it would if it stayed in the ground and the resulting CO2 will impact species

all around the globe. This should be addressed in great detail in the Final EIS.

Sorry to create more work, but we must take these decisions to take coal out of the ground and oxidize it very, very seriously because the impacts on our planet will go on for thousands of years.

Thanks. Leslie

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Response to Comment Letter 11: Clean Energy Action

Comment Response 11A: The BLM's Departmental Manual 516-chapter 4.26A states that "The minimum review period for a draft EIS will be forty-five (45) days from the date of publication by the EPA of the notice of availability." The revised BLM NEPA Handbook H-1790-1 January 2008, Section 9.3.2, page 99, second paragraph, states that, "The public comment period for all draft EISs must last at least 45 days (516 DM 4.26)...". This information can also be found at 40 CFR 1506.10. We allowed 60 days for review, as stated in the "Abstract" and the "Dear Reader" letter in the DEIS. The 60-day review period on the South Gillette draft EIS commenced on the date the EPA published the Notice of Availability. Comments received after the comment period are still accepted for the record, reviewed, and are addressed to the extent practicable.

Comment Response 11B: Coal leasing in the PRB operated as a certified federal coal production region, with leasing developed under the regional leasing process as described under 43 CFR 3420, through the 1980s.

The Powder River Coal Production Region had no leasing interest during the late 1980s. The mines that exist today were operating or already had adequate reserves to begin operating. The PRB had become a mature mining region; that is, a region where sufficient mining operations had been established to meet expected coal demand.

Based on the advice of the Powder River Regional Coal Team, BLM decertified the region as a federal coal production region in 1990, and it remains decertified currently. This is similar to most of the original federal coal production regions established as part of the Federal Coal Management Program. Many of the federal coal production regions were decertified in the later 1980s, in large part because of a decline of interest in leasing federal coal.

There were certain conditions of the decertification established in part based on the RCT's advice. The region was decertified for production maintenance leasing, and the RCT would remain active and periodically review BLM's leasing activity to provide advice on the leasing in a regional perspective. The decision followed the process and notification requirements in 43 CFR 3400.5.

In a region that is decertified, BLM is able to consider leasing by application under the rules at 43 CFR 3425. The RCT has met about once each year since the decertification. BLM has presented any lease by applications to the RCT and has considered their advice on how to proceed with those applications.

Production of PRB coal has increased steadily since decertification. Part of this growth is due to an increase in the demand for electric power and the related increase in demand for steam coal as a fuel for low cost electric generation. There are also cost (mining and reclamation) advantages that have favored PRB

coal, over other domestic coal regions, as well as the low sulfur content which results in cost-effective air pollution control.

However, the production increase has been made with no new mining operations opening since decertification, although several of the operations have consolidated. As shown in Figure 4-2 in the EIS, leasing under the LBA process has essentially been at the same rate as reserves existing before decertification have been being depleted. This level of leasing activity remains consistent with the 1990 decertification action.

Comment Response 11C: The EIS contains a great deal of information all of which is necessary to address the issues and concerns that have been raised over the history of the program. The “Executive Summary” is a synopsis of the EIS. It has been modified in the FEIS to make it seem less dense and more reader friendly without removing any information.

Comment Response 11D: Lands that are disturbed to recover coal must be reclaimed following mining in accordance with the requirements of state and federal law. WDEQ has strict parameters for coal mine reclamation procedures, species composition, final land surface contour, and environmental sustainability. The Surface Mining Control and Reclamation Act of 1977 requires sufficient bonding to cover anticipated reclamation costs. When mining is permitted, the WDEQ/LQD sets the bond amount for reclamation of all disturbed lands. The operator posts an acceptable bonding instrument for this amount with the State of Wyoming. The reclamation bond is not released until a minimum of ten years have elapsed from the date of final seeding and the WDEQ/LQD has determined that all reclamation verifications have occurred.

Individual coal mine annual reports which include specific reclamation information are available to the public at WDEQ/LQD offices. The OSM also prepares reports describing reclamation activities in Wyoming.

Currently, the BLM is using a regional technical study, the PRB Coal Review, to evaluate cumulative impacts of coal and other mineral development in the PRB. One of its tasks includes a look at past and present coal development in the PRB and a forecast of reasonably foreseeable development in the PRB through 2020. Tables 4-2 and 4-3 in the FEIS address baseline and projected reclaimed and unreclaimed mining acres in the PRB. BLM is also completing work on a comprehensive database to use in tracking development activities in the PRB. The database will track cumulative actual reclaimed and unreclaimed acreages of coal mines.

The EIS discusses reclamation for each applicant in Chapter 2. Not all disturbed land has been mined. Some of the surface acres disturbed contain permanent structures such as buildings and rail lines. Reclamation follows as

mining progresses. It is true that as coal deepens, additional surface disturbance is required in advance of operations to allow a series of benches or a stable incline to reach the coal depth while maintaining a safely stable working area, and this practice does increase disturbance. Further explanation on the reclamation process has been added to the FEIS in Chapter 2.

Comment Response 11E: Table 3-5 has been updated in the FEIS to include more overburden, interburden, and coal thickness information for the existing leases within the South Gillette analysis area.

Comment Response 11F: The air quality sections are located at 3.4 and 4.2.3. Section 4.2.3 has been updated with new information. WDEQ/AQD regulates air quality in the PRB. That agency issues the air quality permits to each mine, monitors actual air quality in the PRB, and handles enforcement. The air quality information in the EIS does take into account the expected increase in overburden ratios.

The statement you quote from page 3-30 relates specifically to particulate monitoring. For other climatic and air quality components, we have used nearby and reliable sources for monitoring data.

Comment Response 11G: Visibility is addressed in the air quality sections, specifically 3.4.4.1 and 4.2.3. The Chapter 4 discussion addresses cumulative visibility effects. Figure 3-20 in the draft includes the most recent data from the IMPROVE website.

Comment Response 11H: We agree that issues addressed in the EIS require the most recent data available from the most reliable sources. The 1988 study cited in your comment is the specific study that WDEQ performed to determine the AVF status of Duck Nest Creek. It was conducted for mining permitting at the Belle Ayr Mine. BLM is responsible to work with WDEQ to evaluate AVFs prior to leasing to assure that AVFs significant to farming are not leased.

Comment Response 11I: A detailed discussion of Ute ladies'-tresses can be found in Appendix E. The Ute ladies'-tresses surveys for the SGAC mines completed to date are:

Belle Ayr North: 2 surveys - August 2006 and 2007 by ESCO Associates
West Coal Creek: 1 survey - July 2007 by BKS Environmental
Caballo West: 1 survey - August 2007 by BKS Environmental
Maysdorf II: 2 surveys - August 2005 and 2006 by ESCO Associates

Both Coal Creek and Caballo will conduct surveys in the summer of 2009. This issue of Ute ladies'-tresses is also a concern of the USFWS who reviews this document and with whom we fully consult. The USFWS has requested that in the biological assessment (Appendix E) that any potential habitat that

has not already been surveyed for Ute ladies' tresses within the project area will be identified and surveyed prior to surface mining activities. The biological assessments have been updated with the information requested by the USFWS.

The USFWS is responsible for administration of the ESA. This agency manages threatened and endangered species and consults, through the Section 7 process, with other agencies in how proposed projects might impact and affect listed species. All federal agencies have a responsibility under Section 7(a)(1) of the ESA to conserve federally listed threatened and endangered species. BLM cooperates with the USFWS in fulfilling our Section 7 consultation obligations and responsibilities. The biological assessments (Appendix E) and the BLM sensitive species evaluation (Appendix F) for the FEIS have been prepared and provided to USFWS for their review. We continue to work with USFWS in order to address concerns and provide any additional information needs. The EIS has been revised based on comments and oral discussions with the USFWS. Section 7 consultation will be completed before a decision is made on whether to lease or not to lease any of the LBAs discussed in this EIS.

Comment Response 11J: Impacts to raptors are discussed in several locations. There is a discussion of raptors in the "Wildlife" Section in the Executive Summary. In Section 3.10.4 there is a discussion of raptors broken down by each LBA with nesting detail. Section 3.10.6.1 addresses raptors again, and raptors are included in Section 4.2.9.2. Some raptors are discussed under the "Special Status Species" Section 4.2.9.4. Please see these sections for information on raptors.

Wildlife biologists at the USFWS, the WGFD, and the BLM Buffalo Office review the EIS and the raptor information presented. Concurrence with the U.S. Fish and Wildlife Service Section 7 consultation is reached before BLM offers a lease for sale. Furthermore, wildlife as well as raptors and their nesting activities and other species are monitored yearly as part of each mines' permit process. This information is available to the public through the Wyoming DEQ.

Comment Response 11K: The EIS discusses greater sage grouse and other sensitive species in the "Wildlife" Section (3.10) and in Appendix E in Volume 2 of the DEIS. Among other important habitat components, sage grouse require vast expanses of sagebrush-steppe communities with extensive mosaics of sagebrush of varying densities and heights. As stated in the EIS, there are no large expanses of contiguous sagebrush in the South Gillette EIS general analysis area. Please see Section 3.10.5.1 for a discussion on sage-grouse.

There are no known leks within the South Gillette EIS disturbance areas. About 25 years of annual or biannual monitoring studies from 1982 to 2006 performed by the mines in the South Gillette area documented that sage-grouse are rare in the survey areas. Requirements to protect sage-grouse during mining operations are addressed as part of the existing mining and

reclamation plan for each individual mine. An approved raptor mitigation plan is also in place for the applicant mines. If the proposed tract is leased and permitted for mining, the wildlife monitoring and mitigation plans would be amended, as required by WDEQ/LQD and USFWS, to include newly leased tracts.

In 2007, Wyoming Governor Dave Freudenthal commissioned a Statewide Sage-Grouse Implementation Team. On March 17, 2008, the team preliminarily identified and mapped recommended sage-grouse focus areas in Wyoming in an effort to better understand what types of habitat grouse prefer and what areas should be protected. The South Gillette EIS applicant mines' general analysis areas are not located within any of the mapped focus areas as the EIS states in Section 3.10.5.1. In the "Affected Environment" Section (3.10.5.1.2) there is a discussion of the focus area outside and adjacent to the West Coal Creek LBA. Also, the South Gillette Supplementary Information document contains a more detailed discussion.

Comment Response 11L: The discussion of threatened, endangered, and sensitive species can be found in the body of the text primarily in Sections 3.9 and 3.10 with more discussion in Sections 4.2.8 and 4.2.9. As you note in your comment, more detailed discussion of threatened, endangered, and sensitive species are included in the appendices. A summary of the threatened, endangered, and sensitive species which could be found on the LBA tracts is located in the Executive Summary.

Comment Response 11M: Comments M and N are similar in that they highlight scientific investigation of the effects of sustained climate change. Ongoing scientific research has identified the potential impacts of GHG emissions, and changes in biologic carbon sequestration on the global climate. Through complex interactions on a regional and global scale, these changes cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat radiated by the earth back into space. Although natural GHG levels have varied for millennia, recent industrialization and burning of fossil carbon sources have caused CO₂(e) concentrations to increase dramatically and are likely to contribute to overall global climatic changes.

Tools necessary to quantify incremental climatic changes associated with those factors for specific activities like mining of an LBA tract are presently unavailable. Consequently, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis in this EIS is limited to accounting and disclosing factors that contribute to climate change. To the extent that emission data were available or could be inferred from representative type data, we have identified potential GHG emissions that could result from development of the proposed LBAs, as well as emissions that will result from selection of the No Action Alternative.

The site-specific impacts analyzed in this EIS are based on the assumption that if LBA tracts are offered for competitive lease, a lease would be issued, and mining would be permitted. We further assume that the applicant would be the lessee, and the lease would be permitted as an extension of their current mining operations. In Chapter 3, we have estimated the change to emissions of GHG under each alternative LBA configuration, including the No Action Alternative (please see table 3-19 in the DEIS).

In Chapter 4, the contribution of the site-specific alternatives to cumulative effects on the environment is evaluated. To do this, it is assumed that coal mining will proceed in accordance with permit conditions. We further assume that this coal will be sold to coal users in response to forecasts of demand for this coal. Historically these users have been electric utilities in the United States, although there is potential for sales outside the U.S. This coal market is open and competitive, and users can buy from the most cost effective suppliers that meet their needs.

In Section 4.2.14.1 in the DEIS, we estimated the amount of GHG emissions that could be attributed to coal production as a result of leasing the proposed LBAs, as well as from the forecast coal production from all coal mines in the Wyoming PRB. This information is included in Chapter 4 (4.2.14.1). This was done by relating the portion of coal mined to the total emission of GHG from all coal mined in the U.S. We assumed that all PRB coal was used for coal fired electric generation as part of the total U.S. use of coal for electric generation. This gives an upper estimate of the GHG resulting from use of the coal that would be produced from the proposed LBAs, and for forecast total PRB coal production. Specific levels of significance have not yet been established for GHG emissions. Given the state of the science, it is not yet possible to associate specific actions with the specific climate impacts. Since tools necessary to quantify incremental climatic changes associated with these GHG emissions are presently unavailable, the analysis cannot reach conclusions as to the magnitude or significance of the emissions on climate change. The impacts of climate change represent the cumulative aggregation of all worldwide GHG emissions, land use management practices, and the albedo effect. The EIS does provide a meaningful context and measure of the relative significance of coal use from the proposed LBAs and overall projected PRB coal production on total GHG emissions.

Comment Response 11N: See response to comment M.

Comment Response 11O: The exact amount of carbon stored in PRB rangeland soils has been tested and found to be typically very low (insignificant) due to low annual soil temperatures and the low organic content of the soil. To account for the range of carbon that could be present in the soils, and released during mining activities from PRB range soils, the calculations in Table 3-19 for “Mining Process” include an allowance for CO₂

released from soil. The CO₂ emission estimates used in this EIS for the SGAC combined tracts *did* include consideration of the loss of the carbon sink due to soil salvage vs. the benefit of the improved carbon sink from the reclamation (better vegetation cover). The discussion of the CO₂ figures had left out mention of soil carbon sink and this has been corrected.

Comment Response 11P: As stated in the response to comment M above, tools necessary to quantify incremental climatic changes associated with those factors for specific activities like mining of an LBA tract are presently unavailable. Consequently, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established. Therefore, climate change analysis in this EIS is limited to accounting for and disclosing factors that contribute to climate change. To the extent that emission data were available or could be inferred from representative type data, we have identified potential GHG emissions that could result from development of the proposed LBAs, as well as emissions that will result from selection of the No Action Alternative. Actual greenhouse gas emission calculated for each LBA that include methane and CO₂ released from soils at disturbance are located in Chapter 3 (Section 3.18.2). A discussion of greenhouse gas emission from the assumed combustion of the coal mined from these LBAs, as well as from coal produced in the PRB, is in Chapter 4 (Section 4.2.14.1). Solar variability and other natural forcings are valid concepts.

Comment Response 11Q: Groundwater, surface water, water quantity and quality, and wetlands are addressed in the EIS in Chapters 3 and 4. In Chapter 3, the discussion is in Section 3.5 (Water Resources), Section 3.6 (Alluvial Valley Floors), and Section 3.7 (Wetlands). In Chapter 4, please see Section 4.2.4 (Water Resources), Section 4.2.5 (Channel Stability), and Section 4.2.6 (Alluvial Valley Floors). Wetlands are discussed in Chapter 4 (Section 4.2.8.4), and fisheries are discussed in Section 4.2.9.3. These headings are listed in the Table of Contents and discussed in the Executive Summary.

Comment Response 11R: The socioeconomic impacts from mineral development in the PRB are overall positive. There is currently little or no renewable energy resource development in the area. While it is true that local economies based on sustainable development tend to be more stable, as the EIS states, mineral development is currently the major source of economic stimulus in the Powder River Basin. Socioeconomics are discussed in Chapter 3 at 3.17 continuing through section 3.17.9. Socioeconomics is also addressed in Chapter 4 in sections 4.2.13 through 4.2.13.9. A synopsis of socioeconomics can also be found in the Executive Summary.

Comment Response 11S: The EIS addresses a full range of alternatives to the proposed action--a lease by application submitted by the lease applicant. The range includes an alternative which would represent all lands that include coal

reserves that are comparable to those applied for, which may be efficiently recovered with the LBA, which may enhance competitive interest in the tract, and which could be bypassed if not leased. On the other end of the range is the No Action Alternative which explores the prospects of not leasing one or all of the tracts of federal coal. The scope and effect of the decision on this proposed action is reflected within this range of alternatives.

The BLM is a multiple use land management agency that manages the federal coal reserves under the predominantly private land surface in the Gillette area of the Powder River Basin. In the land area covered by these LBAs, only 3% of the surface ownership is federal land. The BLM does not have authority over private land surface use and surface development. The BLM neither permits for the surface disturbance nor for the mining operations in coal mining operations. Therefore, the reasonable alternative options available for BLM to review in this EIS are leasing alternatives exploring the lease size, and shape, and the No Action Alternative where leasing one or more of these LBAs does not occur.

As discussed in the DEIS, if this coal is leased, and if mining is permitted, coal sales would likely be into the steam coal open market for electrical generation, which is competitive, and where electricity users can buy from the most cost effective and appropriate suppliers of electricity that meet their needs for mandated carbon footprints. This market of electricity producers is influenced by electric demand. The DEIS contains an analysis of the likely portfolio of electric supply and the relative proportion expected to be met by coal fired electric generation. Ongoing scientific research has identified the potential impacts of GHG emissions on the global climate and is discussed in this EIS. Further, the addition of alternate sources of electric generation would conserve carbon fuels, which are not renewable in the short term, and would provide a broader portfolio of electric sources. This EIS estimates likely long term electric generation portfolios, assuming some form of constraint on carbon based fuels. However, the specific environmental effects of the variety of alternative electric generation technologies are not in the scope of decisions on the proposed actions for which this EIS was done. These non-carbon technologies would be evaluated under NEPA as well, as they are proposed on federal lands to be permitted and built.

Major transmission lines in the Wyoming PRB study area that support the regional distribution system of electricity are associated with the Dave Johnston power plant located near Glenrock, Wyoming, and the power plants operated by Black Hills Power Corporation, which are located east of Gillette. These 230-kV transmission lines have been in place for several years. Currently, the electric transmission lines associated with wind development are predominantly at transmission capacity and not available for additional electrical distribution. Distribution power lines associated with conventional oil and gas and CBNG development occur within the study area. These lines

were also included in the scope of the analysis in this EIS. The issue with shipping electricity out of Wyoming at this time is the lack of available transmission line capacity.

The PRB Coal Review estimates that by 2020, four major transmission lines would be constructed. Markets would dictate the size and location of such facilities, and these are not known as of this time. Because transmission lines are a necessary supporting infrastructure for power generating facilities to provide connection to the grid, the PRB Coal Review assumes they would be required as part of the overall system development for the proposed energy development discussed in this EIS. Six specific proposals for these transmission lines have been identified. There is currently insufficient information to analyze or assign likelihood of development by 2020 for all of them.

The governors of California, Nevada, Utah, and Wyoming entered into a memorandum of understanding to encourage development of a high voltage power transmission line (Frontier Line) which would connect those states in April 2005. Since that time, no specific plans have been announced as to the exact location or timing of the Frontier Line. The 345KV Wyoming-Colorado Intertie, as well as the Trans West, Gateway West, and South projects have been proposed in Wyoming in order to move power from Wyoming to Idaho, Nevada, and other western U.S. load demand areas (*Casper Star Tribune* 2007a). The TransWestern Express proposes to move electric power from Wyoming to Arizona through Colorado or Utah. The High Plains Express proposes to move power from Wyoming to New Mexico and Arizona. Section 4.1.1.2.3 discusses electric transmission lines. For non-carbon based utility scale energy development to progress in Wyoming, a transmission infrastructure capable of transporting the load must first be developed and added to the network that is currently in place.

Comment Response 11T: NEPA requires the evaluation of a No Action Alternative. The No Action Alternative for each tract considered in this EIS is to reject the lease application. Under that alternative, a tract would not be offered for competitive sale, and the coal contained within the tract would not be mined as proposed at this time. Chapter 2 contains an evaluation of the No Action Alternative and explains that rejecting an application would not affect currently permitted mining activities on existing leases at any of the applicant mines. Selection of the No Action Alternative would not preclude an application to lease any rejected tract in the future. The No Action Alternative is also addressed in the Executive Summary.

BLM participated in the 2007 inventory of assessed federal coal resources. This is a broad-scale assessment of the availability of coal resources in the PRB. As coal resources with lower overburden are depleted by mining, the general overburden ratio increases. Overburden ratio is directly related to

mining cost, making lower overburden coal relatively lower cost coal. The value and interest in acquiring a coal lease depends on the prospective coal lease applicant's expectation that the coal can be mined at a cost far enough below expected revenue to result in a reasonable return on investment.

December 8 2008

MEMORANDUM

TO: Teresa Johnson
Bureau of Land Management
Casper Field Office

FROM: Foster Kirby
Acting NW Branch Manager
Program Support Division
OSM – Western Region, Denver

SUBJECT: *Comments on the “Draft Coal Environmental Impact Statement for the South Gillette Area Coal Lease Applications” by Office of Surface Mining Reclamation and Enforcement Western Region, Denver, Colorado*

The Office of Surface Mining Western Region (OSM) as a cooperating agency has reviewed the “Draft South Gillette Area Coal Environmental Impact Statement for Campbell County Wyoming”. The DEIS is well written, organized and successfully pulls together a vast amount of information about four potential coal leasing actions. The document adequately describes the purpose and need for the proposed action(s) and the alternatives considered. It is anticipated that the final EIS will serve OSM’s NEPA needs in preparing a Federal Mining Plan recommendation (if one or all of the properties are leased) for the Department of Interior Assistant Secretary of Lands and Minerals under the Mineral Leasing Act. Our review found no substantive issues or areas needing correction or clarification in the main document or the appendices.

NOTE: Volume 2 Cover – “Appendicies” should be “Appendices”

} A

Thank you for the opportunity to comment. Should you have any questions please call me at (303) 293-5039.

OSM Western Region
1999 Broadway, Ste 3320
Denver, CO 80202-5733
MAIL: POB 46667, Denver, CO 80201-6667
303-293-5039
Fax 303-293-5032

Response to Comment Letter 12: Office of Surface Mining

Comment Response 12A: The spelling error on the cover of Volume 2 has been corrected in the final EIS.



United States Department of the Interior

U. S. GEOLOGICAL SURVEY
Reston, VA 20192

BUREAU OF LAND
MANAGEMENT
CASPER FIELD OFFICE

2008 DEC 15 P 2: 35

DEC 0 2 2008

In Reply Refer To:
Mail Stop 423

Ms. Teresa Johnson
Bureau of Land Management
Casper Field Office
2987 Prospector Drive
Casper, WY 82604

Subject: Draft Environmental Impact Statement for the South Gillette Area Coal Lease
Applications, WY

Dear Ms. Johnson:

As requested by your correspondence of October 1, 2008, the U.S. Geological Survey (USGS) has reviewed the subject draft environmental impact statement (DEIS) and offers the following comments.

SPECIFIC COMMENTS

Executive Summary, pages ES-18 (bottom) to ES-19 (top)

The DEIS states, "CBNG (coal bed natural gas) resources that are not recovered prior to mining would be vented to the atmosphere and irretrievably lost when the coal is removed. BLM's policy is to optimize recovery of both resources, ensure the public receives a reasonable return, and encourage agreements between lessees or use BLM authority to minimize loss of publicly owned resources." While there has been significant CBNG recovery in the Gillette area and it is possible CBNG resources in the area of concern have already been depleted, methane is a significant greenhouse gas. Perhaps prior environmental documents have addressed this issue, but if not, then BLM may need to consider addressing the impact of CBNG release to the atmosphere in the Environmental Consequences section of the DEIS.

A

Section 3.5.1.2.1 Proposed Action and Action Alternatives, page 3-90 to 3-104

The text misrepresents the limitations of ground-water flow models. A flow model was used to predict the extent of water level drawdown in the Wyodak coal aquifer. Due to CBNG production, the rate and extent of the actual drawdown in the late 1990s became much greater than the modeled drawdown. It is correctly stated that predictions of observed drawdown were made obsolete by the CBNG withdrawals. However, the conclusion that drawdown specifically attributable to mining cannot be defined and numerical ground-water models are no longer practical to predict drawdown due to mining alone is not true (p. 3-90, third full paragraph, last sentence; p. 3-94, first partial paragraph, last sentence; p. 3-104, first partial paragraph, third-to-

B

last sentence). Ground-water flow models can still be used to determine the amount of drawdown that would occur if CBNG withdrawals were not taking place. If pumping for mining is occurring at about the rate predicted in the 1990s simulations, then that model is capable of predicting the contribution to the total drawdown produced by mining. The model predictions will not match "observed" drawdowns, however, because the potential drawdown from mining is overshadowed by the much larger CBNG pumping. In order to predict the actual observed drawdown, the area covered by the existing model would need to be expanded and the model modified to include the CBNG pumpage. Eliminating the misconception that model simulations will be useless as a predictive tool merely because another larger stress, specifically CBNG pumpage, has been added to the system is important to the credibility of the DEIS, which states on page 4-52 (fourth full paragraph) that numerical ground-water modeling was used to predict the impacts of the cumulative stresses.



B

Thank you for the opportunity to review and comment on the DEIS. If you have any questions concerning our comments, please contact Lloyd Woosley, Chief of the USGS Environmental Affairs Program, at (703) 350-8797 or at lwoosley@usgs.gov.

Sincerely,

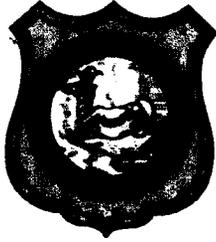
James F. Devine
Senior Advisor for Science Applications

BUREAU OF LAND
 MANAGEMENT
 CASPER FIELD OFFICE
 2000 DEC 15 P 2: 35

Response to Comment Letter 13: U.S. Geological Survey

Comment Response 13A: A new discussion on the estimated amount of coal bed methane released from the exposed unmined coal face in 2007 and the projected annual amount of methane vented from exposed unmined coal with the addition of the four LBA tracts was added to Chapter 3 at the end of Section 3.18.3. Table 3-20 has been calculated to show the effects of the primary greenhouse gases released during mining operations. The calculations have been updated from those presented in the DEIS.

Comment Response 13B: Revisions have been made in the FEIS to Section 3.5.1.2.1 to clarify the drawdown modeling concept to clarify the practical use of such models, and the causes of modeled results relating to observed drawdowns.



WYOMING GAME AND FISH DEPARTMENT

5400 Bishop Blvd. Cheyenne, WY 82006

Phone: (307) 777-4600 Fax: (307) 777-4610

Web site: <http://gf.state.wy.us>

GOVERNOR
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14

December 10, 2008

WER 11596.02
Bureau of Land Management
Casper Field Office
Draft Environmental Impact Statement
South Gillette Area Coal,
Campbell County

Teresa Johnson
Bureau of Land Management
Casper Field Office
2987 Prospector Drive
Casper, WY 82604

Dear Ms. Johnson:

The staff of the Wyoming Game and Fish Department has reviewed the Draft Environmental Impact Statement for South Gillette Area Coal in Campbell County. We previously submitted comments in a letter dated June 6, 2008. We have no additional concerns at this time.

Thank you for the opportunity to comment.

Sincerely,

JOHN EMMERICH
DEPUTY DIRECTOR

JE:MF:gfb

cc: USFWS

2008 DEC 12 P 11: 33
BUREAU OF LAND
MANAGEMENT
CASPER FIELD OFFICE

Response to Comment Letter 14: Wyoming Game and Fish Department

Comment Response 14: We have incorporated your previous comments into the draft and then the final EIS. Your concerns will be considered in any decision BLM makes on the lease applications.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8

1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
<http://www.epa.gov/region08>

DEC 19 2008

Ref: 8EPR-N

Ms. Teresa Johnson
Bureau of Land Management, Casper Field Office
2987 Prospector Drive
Casper, Wyoming 82604

Re: South Gillette Area Coal Lease Applications
Draft Environmental Impact Statement
CEQ # 20080426

2008 DEC 29 A 7:00
CASPER FIELD OFFICE
BUREAU OF LAND MANAGEMENT
U.S. DEPARTMENT OF THE INTERIOR

Dear Ms. Johnson:

The U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the South Gillette Area Coal Lease Applications Draft Environmental Impact Statement (DEIS). Our comments are provided in accordance with our authorities under the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C) and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609.

The Bureau of Land Management proposes to hold competitive lease sales and issue maintenance leases for four Lease by Applicant (LBA) tracts (Caballo West, Belle Ayr North, Maysdorf II and West Coal Creek) located adjacent to four existing coal mines (Caballo, Belle Ayr, Cordero Rojo and Coal Creek). The DEIS also considers two alternatives that modify and expand the proposed tracts. The area under consideration is located in Campbell County, Wyoming between eight and twenty-five miles south-southeast of Gillette. The Belle Ayr North LBA Tract includes a portion of the Bishop Road, and the Maysdorf II LBA Tract includes portions of Highway 59, Haight and Hilight county roads, and Maysdorf Cemetery. The DEIS indicates that the coal underlying these structures is considered unsuitable for mining, although a study is being done to analyze the feasibility of relocating Bishop Road and plans are underway to relocate Maysdorf Cemetery. After careful review of the DEIS, EPA's primary concern is air quality. Additional comments regarding wetlands, noxious weeds and greenhouse gas emissions are enclosed.

EPA is particularly concerned with assuring that air quality in the Powder River Basin does not exceed the Clean Air Act standards and minimizing potential localized air quality impacts from blasting and mining activities to the surrounding school bus stops and residences. Section 3.4.2.3, references the Memorandum of Agreement (MOA) between the Wyoming Department of Environmental Quality (WDEQ) and EPA (January 24, 1994), which acknowledges that some limitations may exist in modeling short term Particulate Matter (PM₁₀) and that PM₁₀ monitoring should be used for compliance purposes. While no exceedances have been measured recently at the South Gillette Coal Mines listed in the DEIS, EPA is concerned

A

since a significant number of exceedances have occurred in the last 2-years at nearby mining facilities. The control measures described in the DEIS Section 3.4.2.3 significantly reduce point source and fugitive dust emissions and should be updated with cooperation with the WDEQ as appropriate or if exceedances of a standard occurs. A condition of the MOA is to continue PM₁₀ monitoring near the mine to ensure compliance with the 24-hour PM₁₀ NAAQS. BLM should ensure that the mine operators consult with the WDEQ on any monitoring site adjustments or additions due to changes in the active mine area. Particular attention should be made to shifting active mine areas and the placement of air monitoring sites in order to determine maximum air quality impacts from the mine.

A

The DEIS also includes the results of the cumulative analysis for the Powder River Basin Coal Review (2006), which are presented in Tables 4-10, 4-11 and 4-12. The Coal Review analysis predicted several negative adverse air quality impacts for the base case year of 2002 and future year for the lower and upper production scenarios of 2010. The Final EIS needs to be updated to include the findings of the most recent Task 3A Powder River Basin Coal Review analysis (2008), which projects exceedances of PM₁₀ and PM_{2.5} for both annual and 24-hour NAAQS in Wyoming in 2015.

B

EPA is also concerned about the proximity of the mining operation to homes and school bus stops. Children may be especially susceptible to the health effects of NO₂ and fine particulates. Children have greater exposure to air pollution because of their faster breathing rates and the amount of time spent playing outdoors. Particulates and NO₂ can aggravate asthma, irritate airways, and cause coughing and breathing difficulties. The Final EIS (FEIS) should detail mitigation and monitoring measures that will be undertaken to minimize exposure to particulates and NO₂ for children waiting at bus stops near the mining areas.

C

It is EPA's responsibility to provide an independent review and evaluation of the potential environmental impacts of the project. The DEIS includes the proposed alternative as well as two alternatives that slightly modify the lease tracts being proposed for lease. The DEIS does not indicate which alternative is the preferred alternative and most of the impacts are the same for the proposed action and actions 2 and 3. Because of this, it is impossible to determine which alternative is the least environmentally damaging. EPA is rating this DEIS as Environmental Concerns - EC, Insufficient Information - 2 (EC-2). The EC rating means that EPA's review of the proposed alternatives has identified environmental impacts to air quality that should be avoided in order to fully protect the environment. Mitigation measures should be fully fleshed out and implemented to reduce the environmental impact. The 2 rating means the DEIS does not contain sufficient information to fully assess the environmental impacts that should be avoided in order to fully protect the environment. A full description of EPA's EIS rating system is enclosed.

If you have any questions regarding the NEPA process or this rating, please contact Rachel Eichelberger at 303-312-6008 or me at 303-312-6004.

Sincerely,

A handwritten signature in black ink, appearing to read "Larry Svoboda". The signature is fluid and cursive, with a large initial "L" and a long horizontal stroke at the end.

Larry Svoboda
Director, NEPA Program
Office of Ecosystems Protection and Remediation

Enclosures

**Additional Comments by the Region 8 Environmental Protection Agency
Draft Environmental Impact Statement for the South Gillette Area Coal Lease DEIS**

Air Quality

EPA commends BLM for updating the Powder River Coal Review (2008) to help evaluate the cumulative impacts of coal and other energy development in the Powder River Basin through 2015. EPA recommends the updated modeling be included in the South Gillette Area Coal Lease FEIS.

} **D**

EPA recommends that the DEIS disclose that emissions from coal combustion have been identified as a significant source of atmospheric mercury. EPA's Web site at <http://www.epa.gov/oar/mercury.html> has several reports summarizing the environmental impacts of mercury, primarily bioaccumulation in the aquatic food web. Concentrations of mercury emitted as a result of combustion vary depending on the chemistry of coal deposits and the type of air pollution controls. For purposes of the DEIS, we recommend including any existing information on mercury emissions from power plants currently burning coal from the mines.

} **E**

Table 3-6 contains background measured ambient data through 2002 or 2004. Data should be updated to reflect current conditions through 2007 please refer to the following link: <http://www.epa.gov/air/data/index.html>

} **F**

Proximity to Residences and School bus stops

EPA is concerned about the potential health risk to the public associated with short term exposure to NO₂ from blasting emissions. In Section 3.4.3.3, the DEIS discusses various mitigation strategies that have been used historically to mitigate NO₂ exposures in the Powder River Basin, but does not commit to any specific mitigation strategy. It goes on to say that the WDEQ has not required the mines to implement any specific measures, but the mines have voluntarily committed to control blasting emissions. The DEIS acknowledges that while no one single procedure has consistently proven successful in mitigating blasting-related NO₂ emissions, the most successful control measure has been to reduce the size of the cast blasting shots.

} **G**

Wetlands

Executive Order 11990 directs all Federal Agencies to provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Indirect draining of, or direct disturbance of, wetland areas should be avoided. If there may be wetlands in the project area, EPA recommends consultation with the U.S. Army Corps of Engineers to determine whether any of the project activities require a Clean Water Act (CWA) Section 404 permit. If disturbance is unavoidable, EPA suggests BLM require a commitment to replace *in kind* such impacted wetlands. As studies indicate that traditional mitigation is generally not successful in fully restoring wetland function, EPA suggests that BLM require a two-to-one mitigation of wetland disturbance. Due to the time

} **H**

it can take to adequately reclaim disturbed wetlands and the potential life of this project, BLM may consider requiring mitigation to begin concurrently with the disturbance.

} H

Noxious Weeds

Noxious weeds are becoming an increasingly difficult problem to manage on western lands, including in the Powder River Basin. The FEIS should list the noxious weeds and exotic plants that occur in the resource area. EPA recommends the FEIS detail a strategy for prevention, early detection of invasion, and control procedures for each species of noxious weed that may pose a threat in the project area. EPA is pleased that the reclamation plans for the existing mines include steps to control invasion by noxious weeds.

} I

Greenhouse Gas Emissions and Global Warming

EPA is pleased that the DEIS includes a section on greenhouse gas emissions and global warming, including estimates of CO₂ equivalent emissions at the SGAC Mines. However, there is no mention of any greenhouse gas emission mitigation measures in the DEIS. The FEIS should include some potential mitigation for the additional greenhouse gases that will be emitted by the SGAC Mines if the maintenance leases are issued. BLM should also include an estimate of the greenhouse gases emitted in the burning of the mined coal, as that is a logical consequence of mining the coal, and accounts for a large percentage of greenhouse gas emissions.

} J



Response to Comment Letter 15: U.S. Environmental Protection Agency

Comment Response 15A: There have been no monitored exceedances of the annual PM₁₀ standard in the Wyoming PRB. Also, there have been no monitored exceedances of the 24-hour PM₁₀ standard at the four South Gillette mines through 2006. However, as discussed in Section 3.4.2.1, monitoring sites at some of the surface coal mines have shown some numerical exceedances of the 24-hour PM₁₀ standard since 2000.

According to WDEQ/AQD, the circumstances associated with the monitored exceedances of the 24-hour PM₁₀ standard in the PRB prior to 2007 provide adequate reason to conclude that high wind events and blowing dust had caused exceedances of the ambient air quality standards that otherwise would not have occurred.

In response to the measured exceedances of the 24-hour PM₁₀ ambient air quality standards and in anticipation of conditions that would potentially lead to future exceedances, the WDEQ/AQD collaborated with the Wyoming Mining Association to develop a Natural Events Action Plan for the coal mines of the Powder River Basin. The plan was based on EPA Natural Event Policy guidance. A report describing the plan was submitted to EPA. Section 3.4.2.3 and Appendix H (H-3.2.8) in the EIS describe the plan, its proposed measures for implementation, and dust control measures considered best available control measures.

The WDEQ permits the mining and issues the air quality permit. WDEQ works closely with the mine operators to monitor air quality by using required placing of air quality monitoring equipment as well as additional data from monitors placed by the mining operators. Compliance with the air quality permit stipulations are enforced by the WDEQ.

Comment Response 15B: The “Air Quality” section (4.2.3) in the final EIS has been updated to include the most recent Task 3A Powder River Basin coal review analysis.

Comment Response 15C: Text has been added to the appropriate pages to indicate that mitigation measures should reduce NO_x exposure to the areas around active mining, including bus stops and residences.

Comment Response 15D: See response to comment B.

Comment Response 15E: A discussion of atmospheric mercury released from coal during combustion is located in Section 4.2.14.2 (Mercury, Coal Combustion Residues, and Other By-Products) in Chapter 4. This section addresses mercury in the food web as well as mercury emissions from power

plants burning PRB coal. This discussion uses EPA mercury reports which are more recent than December 1997.

Comment Response 15F: Table 3-6 has been updated as requested.

Comment Response 15G: See response to comment C.

Comment Response 15H: If the South Gillette Area LBA tracts are leased and mined, restoration of jurisdictional wetlands will be required. Additional consultation with the COE would be completed during the permitting process. The COE requires mitigation of all impacted jurisdictional wetlands in accordance with Section 404 of the Clean Water Act. They approve the plans for wetland mitigation and restoration as well as the number of acres to be restored. The COE considers the type and function of each jurisdictional wetland that will be impacted and may require restoration of additional acres if the type and function of the restored wetlands will not completely replace the original wetland. The wetland mitigation plan approved by COE then becomes part of the WDEQ/LQD mining permit. There are special required permitting procedures to assure that after mining, there would be no net loss of wetlands. WDEQ/LQD is the agency that permits mining operations and has authority to enforce mining regulations.

Comment Response 15I: Section 4.2.8.3 addresses noxious and invasive weed species. A list of the plants that the State of Wyoming has designated as noxious weeds is included. Campbell County does not have a declared county list of weeds. There are few occurrences of noxious weeds in the mine areas because WDEQ/LQD rules and regulations require surface coal mine operators to control and minimize the introduction of noxious weeds in accordance with federal and state requirements. The South Gillette Area mines work with Campbell County Weed and Pest Department and conduct an active noxious weed control program on their existing coal leases. A plan for controlling noxious weeds is included in the mining and reclamation plan permit for each mine. Mining and reclamation plans for newly permitted coal tracts would also include steps to control invasion from noxious weeds.

Comment Response 15J: The final EIS has a new subsection in Chapter 3 (3.18.3) covering greenhouse gas mitigation.

Wyoming Powder River Basin coal is sold on the open market; therefore, it is not possible to know with any reasonable certainty what power plants would use this coal or in what amount. The variety of burning and emission control apparatus installed in the many facilities to which PRB coal is sold would also make calculating CO₂ emissions difficult. We agree that some sort of calculation is possible for CO₂ released during laboratory combustion of coal, and that this estimate would give a relative value to reported national or international totals of CO₂ emission. The following information has been added

to the final EIS in Section 4.2.14.1: *“In 2006, the Wyoming Powder River Basin coal mines produced approximately 432.0 million tons of coal. Using factors derived from laboratory analyses, it is estimated that approximately 716.9 million metric tons of CO₂ would be generated from the combustion of all of this coal (before CO₂ reduction technologies are applied). This number is based on an average Btu value of 8,600 per pound of Wyoming coal and using a CO₂ emission factor of 212.7 pounds of CO₂ per million Btu (DOE 1994). The estimated 716.9 million metric tons of CO₂ represents approximately 33.6 percent of the estimated 2,134.1 million metric tons of U.S. CO₂ emission from coal combustion (DOE 2007a). In 2006, Wyoming PRB mines accounted for approximately 37.2 percent of the coal produced in the U.S (DOE 2007d).”*

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Bureau of Land Management

RECEIVED

JAN 23 2009

PUBLIC HEARING

Bureau of Land Management
Casper Field Office

NOVEMBER 19, 2008

GILLETTE, WYOMING

SOUTH GILLETTE AREA COAL LBA EIS

1 WEDNESDAY, NOVEMBER 19, 2008, 7:05 P.M.

2 PROCEEDINGS

3
4 MR. KARBS: Now, we'll start the public
5 hearing.

6 First of all, has everyone signed in at the
7 door? Looks like Sarah said if you haven't I would
8 appreciate it if you will sign in before you leave
9 tonight. Also, please include your address if you want
10 to be added to the mailing list for this coal ECIS and
11 also since we have several others going on if you want
12 to be included on any or other mailing lists.

13 Please note that the comments BLM receives
14 during this hearing and the registration sheets that
15 you signed in with will be available for public review.
16 Individuals who want to withhold their name and address
17 from public review or disclosure under the Freedom of
18 Information Act must indicate that in the comments they
19 submit or on the registration form. Submissions from
20 organizations or from individuals who identify
21 themselves as representing organizations or businesses
22 will be made available to the public.

23 I would like to welcome you to this hearing
24 for the South Gillette area coal EIS. Again, I am Mike
25 Karbs, assistant district manager for solid minerals at

1 the Wyoming High Plains District of the BLM, and I will
2 be the hearing officer this evening. Dwande LeMay is
3 the court reporter this evening.

4 If you wish to make a statement during the
5 hearing, we ask that you come up to the podium here,
6 and it's kind of a tall podium so just come up front,
7 whatever you're comfortable with. Theresa has got a
8 microphone if you'd like to use that if you want to
9 stand here.

10 The important thing is so Dwande can see you
11 and then make sure we get a good transcript, so she may
12 direct you a little bit. And also we want the folks in
13 the audience to hear any statements or testimony you
14 provide. If you want a copy of the transcript please
15 contact Dwande and she can make arrangements to get you
16 one of those.

17 This is a public hearing for the purpose
18 of gathering comments on four proposed coal lease
19 applications or LBAs, lease by applications. It is not
20 a forum for questions or debate. The purpose of this
21 hearing is to accept and record public comments on the
22 environmental impact statement that BLM prepared for
23 the South Gillette area coal lease by applications.

24 I would ask that you let BLM know if you are
25 aware of any information that we should consider -- oh,

1 I would also like to ask if you are aware of any
2 information that you would like us to consider in
3 evaluating fair market value of any of these coal lease
4 applications or the maximum economic recovery of
5 federal coal included in the applied for applications.

6 By way of background RAG Coal West
7 Incorporated filed an application on July 6, 2004, with
8 the BLM to lease federal coal reserves in the tract
9 north of and immediately adjacent to the Belle Ayr
10 Mine in Campbell County, Wyoming, approximately ten
11 miles south, southeast of Gillette. RAG finalized the
12 sale of the Belle Ayr Mine and the applicant became
13 Foundation Coal West in August of 2004.

14 BLM refers to this tract as the Belle Ayr
15 North LBA tract. The federal coal reserves were
16 applied for as a maintenance tract for the Belle Ayr
17 Mine. The applied for coal lease application includes
18 about 1578 acres and approximately 208 million tons of
19 coal.

20 Ark Land Company filed an application on
21 February 10, 2006, with the BLM to lease federal coal
22 reserves in a tract west of and immediately adjacent to
23 Coal Creek Mine in Campbell County, Wyoming,
24 approximately 25 miles south, southeast of Gillette.
25 BLM refers to this tract as the West Coal Creek LBA

1 tract. The federal coal reserves were applied for as a
2 maintenance tract for the Coal Creek Mine. These
3 applied for coal lease applications includes about
4 1,151 acres and approximately 63 million tons of coal.

5 Caballo Coal Company filed application on
6 March 15, 2006, with the BLM to lease federal coal
7 reserves in the tract west of and immediately adjacent
8 to the Caballo Mine in Campbell County, Wyoming,
9 approximately 8 miles south, southeast of Gillette.
10 BLM refers to this tract as the Caballo west LBA tract.
11 The federal coal reserves were applied for as a
12 maintenance track for the Caballo Mine. The applied
13 for coal lease application includes about 777 acres and
14 approximately 92 million tons of coal.

15 And, finally, the Cordero Mining Company
16 filed an application on September 1, 2006, with the BLM
17 to lease federal coal reserves on tracts west and south
18 of and immediately adjacent to the Cordero-Rojo Mine in
19 Campbell County, Wyoming, approximately 15 miles south,
20 southeast of Gillette. BLM refers to this tract as the
21 Maysdorf II LBA tract. The federal coal reserves were
22 applied for as a maintenance tract for the Cordero-Rojo
23 Mine. The applied for coal lease application includes
24 about 4654 acres and approximately 504 million tons of
25 coal.

1 The BLM is preparing one enviromental impact
2 statement for these four coal lease applications. EIS
3 will be used to help decide whether or not to offer the
4 federal coal included in the lease applications for
5 competitive sale in accordance with the regulations at
6 43 CFR 3425.

7 The United States must receive the fair
8 market value of the coal included in the lease
9 applications before the land applied for can be leased.
10 BLM mailed a draft EIS for the coal lease applications
11 to the public starting in October 17, 2008. The
12 comment period on the draft EIS ends on December 24,
13 2008.

14 BLM may not be able to consider comments
15 received after December 24th on the final EIS, and
16 again this EIS will be used to make a decision whether
17 or not to offer the coal in any of these LBAs for
18 competitive sale. To reiterate, written comments to be
19 faxed or mailed to Theresa Johnson at the Bureau of
20 Land Management, Wyoming High Plains District. We will
21 accept written comments here tonight.

22 I know some of that was repetition but it
23 never hurts.

24 Before I begin to recognize those of you who
25 have asked to testify, I would like to set a few simple

1 grounds rules. First, if you have not registered
2 please do so.

3 You're all good.

4 If you indicated that you wished to testify
5 when you registered, I will recognize you in the order
6 that you have registered. If you did not indicate that
7 you wished to testify when you registered but decide
8 you want to during the hearing, at any point now, I
9 will ask for additional comments after all of those who
10 have registered to speak have had an opportunity.

11 When you're recognized please come up to the
12 podium or up to the front here. It's important to
13 state your name and address and if you represent
14 someone other than yourself, the name of that
15 organization. Please speak clearly so that Dwande can
16 hear your remarks. I don't think we're going to put
17 any particular limit on the testimony. At least we
18 don't have a lot of people registered to testify, so I
19 won't worry about that. And, again, to help our
20 transcript if you have a copy of your statement that
21 will help the reporter make an accurate record.

22 And, finally, this is a public hearing for
23 the purpose of gathering comments on the South Gillette
24 Area Coal Environmental Impact Statement. I ask you
25 not to question anyone during their testimony. The

1 reporter or I may need to ask a question for
2 clarification of those who do testify.

3 And I realize that some of you may have
4 questions or discussion after we close the formal
5 hearing. All of us will stick around and attempt to
6 answer any questions you have or any items that you
7 want to discuss. So feel free to do that after the
8 hearing has been closed, we'll be glad to accommodate
9 you.

10 With that I'll call the first speaker
11 registered to testify and that would be Shannon
12 Anderson.

13 MS. ANDERSON: Good evening. My name is
14 Shannon Anderson. I'm with the Powder River Basin
15 Resource Counsel. Our address is 934 West Main Street
16 in Sheridan. For those of you that are not familiar
17 with our organization, the Powder River Basin Resource
18 Counsel is a local organization based in Northeast
19 Wyoming. Most of our members are rural family farmers
20 and ranchers in the Powder River Basin who live near
21 the coal mines in the basin and other energy
22 development there.

23 We do first want to acknowledge BLM for this
24 environmental impact statement. I think the breadth
25 and scope of the statement are much stronger than

1 previous statements, the analysis particularly of
 2 climate change, how air quality impacts with the
 3 additional appendix and other information. We greatly
 4 appreciate, together, you know, a better picture of the
 5 impacts of coal mining in the basin.

6 With that said I do have, you know, just a
 7 few comments. I will be submitting, you know, larger
 8 written comments later on down the road, but the first
 9 comment is just about the purpose and need of this
 10 environmental impact statement.

11 The permit statement we feel is much too
 12 narrow. It's stated on page 119 that the purpose is to
 13 allow the applicant mine access to a continuing supply
 14 of low sulfur compliance coal, and we question whether
 15 or not that's really the BLM's purpose or whether, you
 16 know, it's actually a private purpose. That shouldn't
 17 necessarily be the purpose of an environmental impact
 18 statement.

19 We also believe that the statement that new
 20 lease tracts will help provide a stable supply of power
 21 to meet increasing demands without a potentially
 22 significant increase in power costs completely ignores
 23 a carbon constrained future with carbon taxes or cap
 24 and trade regulation.

25 So, you know, the BLM as a manager of the



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1 public lands should be considering other uses for the
 2 land in addition and maybe alternatives to coal mining
 3 for part of its duty and its job, you know, if a wind
 4 farm should be there, you know, other potential uses as
 5 alternatives. And it's possible that coal mining still
 6 is the best option but you need to kind of do that
 7 alternative analysis.

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8 We also, you know, slightly question the
 9 statement that continued extraction of coal is
 10 essential to meet the nation's future energy needs
 11 given the fact that Powder River Basin coal is now
 12 being exported to China so -- and that was actually
 13 stated by Ralph Purlis, who's the governor's energy
 14 adviser, this morning before the joint minerals
 15 committee.

C

16 So we do know, you know, that coal fire power
 17 plants and demand for coal fire power in the nation
 18 right now is decreasing whereas internationally that
 19 demand is still there. So we urge BLM to kind of
 20 tighten that analysis and really give a few, you know
 21 broader picture of where this coal is going and if it's
 22 really being used to meet domestic demands.

D

23 Secondly, we would -- you know, we have great
 24 concerns about reclamation in the basin right now. You
 25 know, according to OSM documents the current rate of

1 reclamation is about three to one. You know, given
2 this map's requirement for contemporaneous reclamation,
3 you know, that ratio should really be one to one. We
4 encourage BLM to take a step back and look at
5 reclamation particularly to these four mines and see if
6 that ratio is one to one before new tracts are leased.

7 Thirdly, again, we would just like to
8 acknowledge climate change impacts and particularly
9 local impacts to Wyoming as a result of climate change,
10 you know lack of water resources, increased drought and
11 wild fires. Our state climatologist Steve Craig and
12 other experts have acknowledged that climate change
13 will have dramatic impacts on the state, particularly
14 agricultural users like our members.

15 The USDA recently came out with a report
16 that, you know, kind of overlays climate changes has
17 for agriculture producers in our nation. So I would
18 encourage BLM to appropriate some of those analyses to
19 particularly talk about local impacts of climate
20 change.

21 We continue to be concerned about air quality
22 in the basin. I think, you know, anybody who works out
23 there, who lives out there does know that the air is
24 being degraded as, you know, this environmental
25 statement documents. So, you know, we are continuously

1 concerned about air quality. I'll submit a document
2 for the record that's from Score Card.org.

3 It's, you know, an analysis of different, you
4 know, environmental impacts, in particular smog and
5 particulate reports documenting that Campbell County is
6 in the worst 10 percent of the counties in the nation
7 as far as PM10 and PM2.5 levels. And that, you know,
8 really concerns our members, you know, third and fourth
9 generation ranchers in the basin. You know, they've
10 seen the impacts of air quality deteriorate over their
11 lifetimes, you know, and we just worry about the future
12 of this county when we talk about, you know, new coal
13 fire plants, new development.

14 You know, at what level is there a tipping
15 point, you know, where this country would no longer be
16 healthy to live in. So, you know, maybe the tipping
17 point is for these new coal mines but, you know, we
18 need to have a broader, a broader look and a broader
19 analysis of, you know, air quality and, you know,
20 management alternatives.

21 And I think EIS does a good job of talking
22 about mitigation measures and management options of the
23 mines who currently employ and are projected to employ
24 with these particular lease tracts. We also do
25 encourage -- particularly that I know blasting

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1 requirements that some of the other mines do in the
2 basin, especially given the proximity of some of these
3 mines to Highway 59.

4 You know, you see the signs as you go down
5 by, you know, Black Thunder Mine and we'd encourage BLM
6 as these mines go a little bit closer to Highway 59 to
7 include some of those warnings. It's probably more
8 appropriately their province but to think about those
9 issues.

10 And then, finally, on that note we would
11 encourage BLM to maintain the hundred foot buffer
12 between the coal mining and roads, particularly
13 Highway 59. I regularly drive down Highway 59. I know
14 a number of you do probably more often than I do. You
15 know, it is the main thorough fair between Gillette and
16 the southern part of the state.

17 You know, we've invested significant tax
18 dollars in Highway 59 through the passing lanes. You
19 know, we're going to invest more tax dollars and
20 potentially get a four lane highway on all the way and,
21 you know, when these new tracts come online, you know,
22 10 to 12 years down the road, we hate to see those tax
23 dollars go to waste. And, you know, having to move the
24 entire highway doesn't seem like the right, the right
25 thing to do.

1 And, finally, we'd just like to encourage BLM
2 to think about the Buffalo R&P amendment process and
3 how that process will work with these lease tracts just
4 as that's going forward right now.

5 Okay. Thank you so much for the time.

6 MR. KARBS: All right. Thank you, Shannon.

7 That was -- Shannon was the person that
8 registered to testify but, like I said, if anybody else
9 would like to testify now is the time to let us know
10 and we'd certainly welcome you to do that.

11 Going once, twice.

12 Okay. All right. Well, if I didn't say it
13 before, and I don't remember if I did, I do appreciate
14 you all coming out tonight and participating in this
15 and I appreciate the comments we got and I'll close the
16 hearing.

17 I did want to, since Shannon brought it up,
18 the concept that we had mentioned. BLM is in the
19 process of amending, modifying -- I'm not sure of the
20 exact word -- the resource management plan for
21 Campbell, Johnson, and Sheridan counties which is for
22 us our Buffalo field office and at least one of us, me,
23 will be a part of that process.

24 So I'm kind of painfully aware of what we're
25 doing but that process will be going on over the next

1 several years and we just started in to it. I think
2 we'll start our scoping on that. The resource
3 management plans are kind of our guideline basic
4 operating policies or resource, or management of all
5 the resources that BLM administered in a geographic
6 area. So I encourage you to get involved in that if
7 you're interested.

8 Again, thanks and safe travels and we'll be
9 around if anybody wants, has any questions or follow up
10 to do individually. We'll stay until you all wander
11 out.

12 (Off the record at 7:36 p.m.)

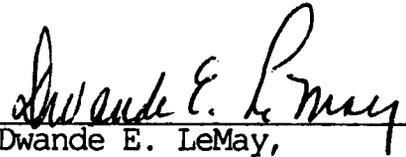
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C E R T I F I C A T E

I, DWANDE E. LEMAY, Professional Court Reporter and a Notary Public of the State of Wyoming, do hereby certify that the foregoing transcript is a true and accurate transcription of my stenographic notes of the BIM hearing.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my Notarial Seal this 21st day of January, 2009


Dwande E. LeMay,

Response to Comments from the November 16, 2008 Public Hearing

Shannon Anderson – Powder River Basin Resource Counsel

Comment Response 16A: The purpose of the EIS is to assess and disclose the impacts of competitively offering for lease certain coal reserves applied for by four operating coal mines. The EIS also analyzes alternatives to these leasing actions and discloses those impacts prior to a decision. As noted in Section 1.2, leasing is recognized as a prerequisite to mining but it is not the enabling action that will allow mining. In their application, the applicant companies have identified their need for coal.

The rate at which remaining reserves at these mines would be mined and sold is based on forecasting coal demand into the future. Coal production has increased through 2007 both domestically and internationally. The FEIS contains additional discussion of the forecasting used to identify future coal production rates, both at these mines and on a cumulative basis for the PRB. This forecasting depends on market demand. A major factor in this market has been, and is predicted to be, electric demand.

The statement under the “Purpose and Need for Action” section relating to maintaining a stable supply of power to meet increasing demand without a potentially significant increase in power costs is in the context of the costs of pollution compliance, alternate coal supplies, as well as the relative cost of electricity from alternate generation methods. In the Chapter 4, there is a discussion of GHG emissions, the cost of electricity, as well as the mix of electric generation sources in a carbon-constrained scenario.

Comment Response 16B: Other forms of addressing increasing electric demand are noted in this EIS. Ongoing scientific research has identified the potential impacts of GHG emissions on the global climate. The addition of non-carbon fueled electric generation sources could reduce GHG emissions. Further, the addition of alternate sources of electric generation would conserve carbon fuels, which are not renewable in the short term and would provide a broader portfolio of electric sources. The EIS estimates likely long term electric generation portfolios. However, the specific environmental effects of the variety of alternative electric generation technologies are not in the scope of this EIS. These technologies would be evaluated under NEPA as they are proposed to be permitted and built.

The BLM is a multiple use land management agency that manages the federal coal reserves under the predominantly private land surface in the Gillette area of the Powder River Basin. In the land area covered by these LBAs, only 3% of the surface ownership is federal land. Although there are many wind and solar resources that can be used for energy development, the BLM does not have

authority over private land surface use and surface development. The BLM neither permits for the surface disturbance nor for the mining operations in coal mining operations. Therefore, the reasonable alternative options available for BLM to review in this EIS are leasing alternatives exploring the lease size, and shape, and the No Action Alternative where leasing one or more of these LBAs does not occur.

Comment Response 16C: Coal is sold in an open market which can include non-domestic buyers. There are a limited percentage of PRB coal exports. The heat value disadvantage of PRB coal for export would indicate that the likelihood of extensive export is minimal. Information from the Energy Information Administration for 2001 to 2007 shows that both imports and exports have increased with a net export of coal in 2007 of 23 million tons (2% of the total domestic production). Ninety percent is exported to Canada and Europe. Most exports are of eastern coal which is higher in heat value, an advantage in export. The expectation (*GLG News* 2008) is that PRB coal may be used to replace the eastern coal that is exported.

Comment Response 16D: There is considerable uncertainty now as to possible regulation of coal fired electric generation, the resulting costs, and the effect on coal demand. The EIS does look at the long term mix of electric generation sources, and these show a large and fairly stable requirement for coal fueled electric generation through the year 2030, the period of time these LBAs would be in production if leased and permitted.

Coal is sold in an open market which can include non-domestic buyers. There are a limited percentage of PRB coal exports. The heat value disadvantage of PRB coal for export would indicate that the likelihood of extensive export is minimal. Information from the Energy Information Administration for 2001 to 2007 shows that both imports and exports have increased with a net export of coal in 2007 of 23 million tons (2% of the total domestic production). Ninety percent is exported to Canada and Europe. Most exports are of eastern coal which is higher in heat value, an advantage in export. The expectation (*GLG News* 2008) is that PRB coal may be used to replace the eastern coal that is exported.

Comment Response 16E: Climatic change analyses are comprised of several factors, including GHG emissions, land use management practices, and the albedo effect. We have identified the effects of recent global climate change on the environment in the area of the proposed action. We have assumed that existing land and resource conditions within the analysis area have been and will continue to be affected by climate change under all alternatives. Existing climate prediction models are not at a scale sufficient to estimate potential impacts of climate change within the analysis area. We have referenced national and regional data that is available, most recent being the report, *The*

Effects of Climate Change on Agriculture, Land Resources, Water Resources and Biodiversity in the United States (U.S. Climate Change Science Program 2008).

Comment Response 16F: Air quality impacts are addressed in this EIS, both in the area of the proposed LBAs, as well as in the context of all development, past present and reasonably foreseeable, within the PRB. In the FEIS, we have added new air quality modeling for cumulative air quality effect predicted in 2015. We have also added more discussion of monitored ozone levels.

The air quality sections, located at 3.4 and 4.2.3, have been updated with new information. WDEQ/AQD regulates air quality in the PRB. That agency issues the air quality permits to each mine, monitors actual air quality in the PRB, and handles enforcement. The air quality information in the EIS does take into account expected increases in development.

Comment Response 16G: Lands within 100 feet of the right of way for a public road are considered unsuitable for mining. There is a process in the regulations (30 CFR 522) governing mine permitting under SMCRA, which provides mechanisms for exceptions. However, the most typical occurrence is that roads are relocated if economically feasible in order maintain separation of public roads from mining operations.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

BUREAU OF LAND
MANAGEMENT
CASPER FIELD OFFICE
2008 DEC 22 A 7: 26
DEC 19 2008

In Reply Refer To:
ES-61411/W.02/ WY09FA0011

Memorandum

To: Field Manager, Bureau of Land Management, Casper Field Office, Casper, Wyoming

From: *for* Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming
Scott Harris

Subject: Comments for the South Gillette Area Coal Draft Environmental Impact Statement

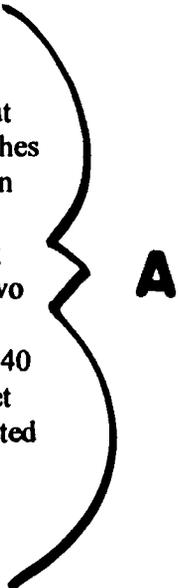
The U.S. Fish and Wildlife Service (Service) received the Bureau of Land Management's (Bureau) Draft Environmental Impact Statement (DEIS) for the South Gillette Area Coal Lease Application on October 20, 2008. This DEIS assesses the environmental consequences of the competitive lease of an approximately 8,161-acre tract of Federal coal located in Campbell County, Wyoming. In response to your request for our review of the DEIS, the Service is providing the following comments.

General Comments

The Service finds that the DEIS is generally well written and by incorporating the recommendations below, the BLM will have effectively addressed sensitive species, threatened, and endangered species, and migratory bird issues.

Specific Comments

Section 3.9.3 Threatened, Endangered, Proposed, and Candidate Plant Species, and BLM Sensitive Species (Page 3-148): Based on new information, the Service has reevaluated the potential for occurrence of the blowout penstemon (*Penstemon haydenii*) in this area. Blowout penstemon is a perennial herb with stems less than 12 inches tall. The inflorescence is 2-6 inches long and has 6-10 compact whorls of milky-blue to pale lavender flowers. Blowout penstemon was listed as endangered on October 1, 1987. Blowout penstemon is known from multiple populations in western Nebraska (Fertig 2001). The plant's current known range in Wyoming consists of the Ferris dunes area in northwest Carbon County where the plant is restricted to two habitat types: steep, northwest facing slopes of active sand dunes with less than 5 percent vegetative cover; and on north facing sandy slopes, on the lee side of active blowouts with 25-40 percent vegetative cover. Known populations in Wyoming are found between 6,680-7,440 feet (Fertig 2001). However, recent surveys have indicated that systematic surveys may be warranted in some lower elevations (below 6,700 feet) in Wyoming where active sand blowout features occur (BLM 2005, Fertig 2001).



Blowouts are formed as strong winds deposit sands from the windward side of a dune to the leeward side and result in a sparsely vegetated crater-like depression. Associated vegetation includes blowout grass, thickspike wheatgrass, lemon scurfpea, Indian ricegrass and western wheatgrass. Threats to the plant occur when sand dunes are removed or overly disturbed by vehicular traffic. Surveys should be conducted from mid-June to early-July when flowering occurs by knowledgeable botanists trained in conducting rare plant surveys.

Since blowout penstemon could occur in this area, we recommend the DEIS address this recent species update by including language such as:

"Habitat for the blowout penstemon (Penstemon haydenii) will be identified prior to any surface disturbing activities. If habitat is determined to be present on the site, surveys will be conducted for the presence of this species. If the species is found, a 0.25-mile no surface disturbance buffer will be placed around the population consistent with the Bureau's Biological Assessment (BLM 2005)."

Appendix E, Page E-16, Paragraph 1 (same text also appears on pages F-15, G-14, and H-19):

We previously expressed our concerns regarding the statement that the proposed action may affect, but is not likely to adversely affect Ute ladies' tresses (*Spiranthes diluvialis*) as included in the first sentence of the paragraph 1. In our July 16, 2008 letter, we stated:

"In accordance with the Service's 1996 formal consultation and resultant biological opinion to the Office of Service Mining, coal mines in Wyoming are required to develop species-specific protection measures if adverse impacts to threatened and endangered species may be anticipated. Therefore, we recommend that any potential habitat that has not already been surveyed for Ute ladies' tresses within the project area should be identified and surveyed prior to surface mining activities."

We request that you specify in the biological assessments that any potential habitat that has not already been surveyed for Ute ladies' tresses within the project area will be identified and surveyed prior to surface mining activities.

Appendix I, Page I-6, Black-tailed Prairie Dog: In the column "Observed on Maysdorff II LBA Tract", the black-tailed prairie dog is marked as a "recent breeder". We assume this is a typographical error referring instead as a response under the "birds" column. If not, we recommend clarifying what this means.

Thank you for the opportunity to comment on the South Gillette Area Coal DEIS. Please feel free to contact our office at any time to discuss issues or concerns regarding this proposed coal lease. If you have any questions regarding this letter, please contact Scott Covington at (307) 772-2374 extension 246.

cc: FWS, National Environmental Policy Coordinator, Denver, CO (Tim Modde)
BLM, Statewide Listed Species Coordinator, Cheyenne, WY (C. Keefe)
WGFD, Lander, Non-Game Coordinator (B.Oakleaf)
WGFD, Cheyenne, Statewide Habitat Protection Coordinator (V.Stelter)

2008 DEC 22 A 7: 26
BUREAU OF LAND
MANAGEMENT
CASPER FIELD OFFICE

References

- Fertig, Walt. 2001. 2000 Survey of Blowout Penstemon (*Penstemon haydenii*) in Wyoming. Report prepared for the Wyoming Cooperative Fish and Wildlife Research Unit, US Fish and Wildlife Service, a Wyoming Game and Fish Department by the Wyoming Natural Diversity Database, Laramie, Wyoming.
- U.S. Bureau of Land Management. 2005. Statewide Programmatic Biological Assessment: Blowout Penstemon (*Penstemon haydenii*). U.S. Bureau of Land Management, Cheyenne, Wyoming. 115 pp. + Appendices. Available on-line at: <http://www.blm.gov/pgdata/etc/medialib/blm/wy/wildlife/penstemon.Par.88533.File.dat/ba.pdf>

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2008 DEC 22 A 7: 26

Response to Comment Letter 17: U.S. Fish and Wildlife Service

Comment Response 17A: Revisions have been made in the FEIS to Appendix E adding a discussion about blowout penstemon in the endangered species discussion.

Comment Response 17B: Appendix E has been revised in the FEIS to include the following text: *“Any potential habitat that has not already been surveyed for Ute ladies’-tresses within the project area should be identified and surveyed prior to surface mining activities.”*

Comment Response 17C: The sensitive species appendix has been revised in the FEIS to change the classification of the prairie dog from a “recent breeder” to “No” to indicate that habitat is generally lacking or very limited.



Teresa
Johnson/CFO/WY/BLM/DOI
02/04/2009 01:36 PM

To Gin Vickers/CFO/WY/BLM/DOI@BLM
cc
bcc

Subject A comment thats not on the list i think

here is a comment that i dont think got onto the list. maybe its one of the corrupted ones?

Teresa Johnson
Environmental Protection Specialist
BLM Wyoming High Plains District Office
National System of Public Lands
ph: 307-261-7510
Teresa_Johnson@blm.gov

----- Forwarded by Teresa Johnson/CFO/WY/BLM/DOI on 02/04/2009 01:35 PM -----



"Stowe, Robert"
<RStowe@archcoal.com>
01/21/2009 12:10 PM

To <Teresa_Johnson@blm.gov>
cc "Hutchinson, Wendy" <WHutchinson@archcoal.com>

Subject

Teresa,
Attached are general comments that Coal Creek and Black Thunder staff made to the South Gillette Coal Draft EIS document, which had been passed along to our corporate office. They chose to focus their comments on GHG and Climatic Change, but in the desire to put together as clean and accurate an FEIS as possible, we felt that we would pass these comments on to you.

Robert R. Stowe
Environmental Engineer
Black Thunder Mine
PO Box 406
Wright, WY 82732

rstowe@archcoal.com
phone: 307-464-2238
fax: 307-464-2313

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Comments on the South Gillette Draft EIS.doc

Comments on the South Gillette Draft EIS – Consolidated from TBCC

1. Page 3-54 BACT measures #1 should read “out-of-pit open coal stockpiles”. It currently reads “out-or-pit”.
2. The word “exceedances” is misspelled. {page 3-56 – 4th paragraph/1st sentence}
3. Reference is made to “If a Natural Events Action Plan (NEAP) is designed and implemented”. A NEAP was approved by EPA in 2007 for the PRB mines. {page 3-56 – 4th paragraph/4th sentence}
4. There is distinct mention of “mitigation plans” designed for “Black Thunder Mine, North Rochelle, and Jacobs Ranch Mine”. Those mines do not fall within the project area of the SGAC. What relevant does the plans concerning those mines have with this project EIS? {page 3-56 – 5th paragraph} The reference to these mines should be removed.
5. Coal Creek Mine’s new Air Quality Permit (MD-5393), was issued on September 2, 2008 for a maximum production rate of 50 MM tpy. The new parameters associated with that permit will change the paragraph {page 3-59}, {page 4-13, etal}, and all references to it throughout the document.
6. In calculating the percentages of private water wells potentially impacted, the percentages add up to more than 100 per cent at each of the mines pages {3-119 & 3-120}. BLM should probably check the calculations provided in that section.
7. The words “were recorded” should be removed from the 1st sentence in the 3rd paragraph on page 3-209.
8. The word “relocated” in the 2nd sentence of the 4th paragraph is misleading and should be changed to “found” or “found in the field”.
9. The archaeological section {page 3-209} should be written consistently. The last sentence of the 4th paragraph should be reworded similar to the last sentence of the Belle Ayr Section 3.12.1.1. The last sentence of the Coal Creek Section is misleading and it should read: “The West Coal Creek BLM study area has been surveyed at the current Class III level. Some of the area, located within the Coal Creek Mine permit, was surveyed prior to 1980 and may be considered substandard in terms of current methodology.”
10. The last sentence in the 3rd paragraph of page 3-246 supplies incomplete data to determine increased needs.
11. Page 4-4-last paragraph . The document states that the North Rochelle mine has 'ceased operations'. That's not really true. The should rewrite the sentence to say "...the North Rochelle Mine has been incorporated into the Black Thunder Mine...."
12. Page 4-37. The January 1994 MOU between EPA and AQD does not require Wy to implement best available work practices where an exceedance has occurred. The WAQD requires Best Available Work Practices in all permits, regardless of whether or not an exceedance has occurred.
13. Page 4-45. paragraph 2; 4th sentence: should say "If major amendments..." instead of "If revisions..." CHIA's are only done on amendments and not on every little change to the permit.

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14. Page 4-51. paragraph 2. sentence 2. typo . need "is" after "power plants"
15. The statement concerning total dissolved solids (TDS) {page 4-52} "The 2005 Annual GAGMO report indicates that TDS concentrations in 2005 ranged from 802 mg/l at BTB-24 (Black Thunder Mine) to 12,409 mg/l at SP-4-NA (North Antelope Rochelle Mine)" needs to be removed from this document. Those two mines at south of the SGAC and the information included has no relevance to this document.
16. Page 4-60. 2nd paragraph under soils. they say "...and the essentially permanent removal of soil resources at industrial sites." I think it would be more appropriate to say "... the temporary removal and replacement of soil resources at mining sites."
17. GHG discussion. There appears to be a considerable amount of opinionated discussion on what is presented as 'fact' vs. theory. Here are examples:
18. {Page 4-103} 'recent industrialization and burning of fossil carbon sources have caused CO2 concentrations to increased dramatically' - is that true?
19. {Page 4-104} last paragraph - ' GHG emissions ...cause a net warming effect of the atmosphere'
20. {Page 4-107} first paragraph - "CO2...is the most prevalent GHG" -- is it, or is water vapor the most prevalent GHG?
21. {Page 4-108} paragraph on supreme ct. - They need to be clearer on the first sentence. the court said CO2 qualified as an air pollutant under CAA only IF EPA could determine it endangered public health or welfare. that should be stated clearly in the first sentence.

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Response to Comment Letter 18: Thunder Basin Coal Company

Comment Response 18A: The spelling error in Section 3.4.2.3, item #1, has been corrected in the FEIS.

Comment Response 18B: The word “exceedances” on page 3-56, 4th paragraph, 3rd line of the draft EIS is correct.

Comment Response 18C: Revisions were made to the text in Section 3.4.2.3 to clarify the statement. The text now states: *“NEAP was designed and implemented to minimize PM₁₀ concentrations and EPA will exercise its discretion, under Section 107(d)(3) of the CAA, not to redesignate areas as nonattainment, provided that the exceedances are demonstrated to be the result of natural events.”*

Comment Response 18D: The mines you refer to on page 3-56, 4th paragraph (Black Thunder, North Rochelle, and Jacobs Ranch) of the DEIS were referenced as examples of mines where NEAP control measures have been formally implemented. The reference will be left in place in the FEIS.

Comment Response 18E: Text in Sections 3.4.2.2.1.2 and 3.4.3.1.1.2 have been revised to update the most recent Coal Creek air quality permit references (including modeling for PM₁₀ and NO_x).

Comment Response 18F: In Sections 3.5.3.2.1.2, 3.5.3.2.1.3, and 3.5.3.2.1.4 of the DEIS, many wells were within 3 miles of more than one mine; therefore, the same well could be counted more than once. Revisions were made in the FEIS to clarify the discussion.

Comment Response 18G: The duplicated text you noted in the DEIS has been removed from Section 3.12.1.2, the third paragraph.

Comment Response 18H: The word “relocated” in the DEIS has been replaced with “found in” under Section 3.12.1.2 in the FEIS. The text now reads, *“Only 13 sites could be verified (one site could not be found in the field and one site was combined with another site).”*

Comment Response 18I: The West Coal Creek general analysis area includes the BLM study area and ¼-mile buffer. Not all of the general analysis area has been surveyed at this time. No changes will be made to the section. The BLM is currently reviewing the 2007 Ark Land Company inventory report. Additional work relating to subsurface testing and Native American consultation is required before Wyoming State Historic Preservation Office consultation can be completed for the West Coal Creek LBA.

Comment Response 18J: Revisions have been made to Section 3.17.5.1 to clarify the text. The text now states: *“In addition to general law enforcement, the Sheriff’s staff and city police officers provide court security, detention facilities, and animal control. The Campbell County Detention Center is a 24-hour supervised 128-bed facility that includes separate modules for women and juveniles (BLM 2005b).”*

Comment Response 18K: A revision has been made to Section 4.1.1.1 in the FEIS to clarify the status of the North Rochelle Mine. It now reads, *“Since 2003, the Coal Creek Mine has resumed operations and the North Rochelle Mine has ceased operation (as a distinct entity) following its purchase by the operator of the Black Thunder Mine.”*

Comment Response 18L: In Section 4.2.3., the text discussing near-field receptors in Wyoming has been changed clarifying the implementation of best available work practices in the final EIS. The text now states: *“This agreement also requires WDEQ to include in each PRB mining permit “Best Available Work Practice” mitigation measures.”*

Comment Response 18M: The “Groundwater” section (4.2.4.1) in the FEIS has been revised to read, *“If major amendments to mining and reclamation permits are proposed, then the potential cumulative impacts of the revisions must also be evaluated.”*

Comment Response 18N: The word “is” has been inserted where you suggested in the final EIS.

Comment Response 18O: Revisions have been made to Section 4.2.4.1 to revise the discussion on TDS.

Comment Response 18P: In Section 4.2.7, the text discussing permanent removal of soils has been clarified in the FEIS. It now states, *“In general, soil disturbance and handling from these activities would generate both long-term and short-term impacts to soil resources through accelerated wind or water erosion, declining soil quality factors, compaction, and the temporary and, in some instances, the essentially permanent removal of soil resources at industrial sites.”*

Comment Response 18Q: Please see responses R through U below.

Comment Response 18R: The statement is based on measured increases in atmospheric CO₂ concentrations since 1800. The inference is that this trend matches corresponding increases during that same time in population and industrialization.

Comment Response 18S: This paragraph is explaining the greenhouse concept as applied to atmospheric gases. A climatic change analysis would be comprised of several factors, including GHG emissions, land use management practices, and the albedo effect. Tools necessary to quantify incremental climatic changes associated with those factors for specific activities like the proposed actions in this EIS are presently unavailable. Consequently, impact assessment of effects of specific anthropogenic activities cannot be performed. Additionally, specific levels of significance have not yet been established.

Comment Response 18T: Water vapor is the most prevalent factor in the greenhouse effect. Water vapor concentrations have changed relatively little over the same period (1800 to 2000) that is referenced when talking about CO₂ concentration increase. CO₂ has been identified as a principal anthropogenic GHG.

Comment Response 18U: In Section 4.2.14.1, the paragraph that talks about the 2007 Supreme Court decision has been clarified in the FEIS. The text now states, *“Additionally, in 2007, the U.S. Supreme Court (Massachusetts v. EPA) held that CO₂ qualifies as an air pollutant under the Clean Air Act (CAA) Section 302(g), if EPA determined it to endanger public health or welfare.”*