
**SOUTH POWDER RIVER BASIN COAL EIS
RESPONSES TO COMMENTS RECEIVED ON THE
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Response to Comment Letter 1: Biodiversity Conservation Alliance

1. For clarification, while the coal estate underlying the tracts being considered for leasing in the South Powder River Basin EIS is public, the majority of the surface estate is privately owned. Under the Preferred Alternatives in the Final EIS, approximately 77 percent of the surface estate is privately owned. The remaining 23 percent is part of the Thunder Basin National Grassland (TBNG) administered by the USDA-Forest Service (USDA-FS).

Although implementing the Proposed Actions would not result in significant increases in long-term regional employment levels, it would mean that existing employment levels at these mines would remain stable while the tracts are mined and this represents stability for the local and regional economy. Coal burning power plants produce approximately 55 percent of the electricity in the United States, and the Powder River Basin supplies more than 30 percent of the coal used in those plants. Wyoming coal is shipped to power plants in more than half of the fifty states. Continued access to the low-sulfur, economically recoverable federal coal resources in the Powder River Basin maintains this source of electrical generation for a large part of the United States at an affordable price, which affects not only industrial output but the jobs and heating costs of many members of the public.

2. Section 1.1 of the Final EIS has been revised to include additional information about the purpose and need for the Proposed Actions. The EIS outlines the benefits to the local, state, and federal governments that would be anticipated if the tracts are leased. You did not provide data supporting your statement that these benefits will not be substantial, sustainable, or consequential to area residents, state and federal governments, or the national public. Discussions with the state government indicate that the State of Wyoming has substantially benefited and will continue to substantially benefit from existing mining operations, including half of almost \$1 billion in bonus payment and half of royalty payments of 12.5 percent on sales of almost 3.2 billion tons of federal coal leased during the last 11 years. A recent editorial in the Gillette News-Record discusses the effect of 30 years of property, sales, use, gas, and state taxes have had on the community of Gillette, stating: “Those have paid for our roads, our schools, our local and state employees, our parks, our waterlines, our government buildings, our sewer systems, and our quality of life—right down to the paved alleys that used to be the bane of Gillette residents.” (Gillette News-Record, October 12, 2003 editorial entitled “*Good neighbors-Thirty years with local coal mines has been a great match*”.) State and local governments are anticipating future benefits from the continued

development of federal coal in the Wyoming Powder River Basin. Nationally, benefits have been and can continue to be achieved, both environmentally and economically, through the use of federal coal that is abundant, low in sulfur, and reasonably priced for power generation in coal-burning power plants in more than half of the 50 states, as discussed in Response 1 above. The area involved is adjacent to existing coal mining operations in the Powder River Basin because the five federal coal tracts that are evaluated in the South Powder River Basin Coal EIS would be leased as maintenance tracts to existing leases. The current area of surface coal mining represents a small percentage of the Powder River Basin, and leasing the new tract would not substantially increase the area involved in surface coal mining, as discussed in the following comment response.

3. The increase in the existing disturbance area for each existing mine would range from approximately 28 percent to approximately 73 percent, under the Preferred Alternative for each tract. Under the No Action Alternatives, the existing federal coal leases in the Wyoming Powder River Basin include approximately 108,011 acres in Campbell and Converse Counties. This is approximately 1.9 percent of the combined areas of Campbell and Converse Counties. If the five LBA tracts are leased under BLM's Preferred Alternatives, approximately 16,000 additional acres would be added, which would increase the area of leased federal coal to approximately 124,000 acres, or 2.2 percent of Campbell and Converse Counties.

Porcupine Creek, Little Thunder Creek, and North Prong Little Thunder Creek flow through existing leases on the Black Thunder and North Antelope Rochelle Complex, and diversions are already in place related to mining operations on those existing leases. If the Little Thunder and NARO North LBA Tract are leased, the existing diversions would have to be modified to control flow in those streams on the newly leased areas. If the tracts are leased and mined, existing vegetation would be removed and replaced by approved reclamation seed mixtures during reclamation. The majority of the approved species in the reclamation seed mixtures are native to the area in and around the LBA tracts. Carrying capacity could be decreased on reclaimed lands as a result of changes in post-mining vegetation and topographic moderation. There would be a reduction in wildlife habitat diversity but wildlife habitat would not be permanently lost.

The EIS states that most of the wetlands on the tracts would be destroyed by mining and replaced in accordance with Section 404 of the Clean Water Act. (Wetlands associated with the Antelope Creek drainage would not be removed. Antelope Creek and an adjacent buffer zone have not been disturbed by existing mining operations at the Antelope Mine and Antelope Mine does not propose to mine through Antelope Creek if they are successful in leasing the West Antelope tract.) Monitoring and mitigation plans for replacing wetlands have been developed and approved for the existing leases for the existing

mines, and some wetland restoration has occurred in mined-out and reclaimed areas on those mines. As is indicated in the EIS, BLM does not authorize mining by issuing a lease for federal coal. If the tracts are leased, each lessee would be required to obtain a mining and reclamation permit covering the newly leased lands before mining operations start on those lands. Specific mitigation and monitoring plans for the new leases would be developed at that time. Assumptions about the restoration of wetlands are based on past wetlands restoration experience in this area. Replacement of non-jurisdictional wetlands would occur as required by the surface land owner on private lands, by the surface managing agency on public lands (e.g., the USDA-FS on the TBNG), or by Wyoming Department of Environmental Quality (WDEQ) on both public and private lands, depending on the values, such as importance to wildlife, associated with the wetland features.

4. Section 7 consultation is in progress and will be completed before a Record of Decision is signed for each tract. The Draft and Final EIS documents disclose the relevant information that is being used to complete the consultation with U.S. Fish and Wildlife Service (USFWS). Since mining has been ongoing in this area for more than 20 years and the annual wildlife surveys for each mine include the existing mine areas and up to two-mile buffer zones, most of the area included in these tracts has been included in the annual wildlife surveys conducted for each mine for multiple years. Appendix G of the Draft EIS, which represented a draft biological assessment for these tracts, has been revised, based on written comments from and oral discussion with USFWS. There are separate appendices covering T&E species for each tract in the Final EIS (Appendices G through J). The Sensitive Species analysis is included in Appendix K in the Final EIS.

The determination that leasing each tract “is not likely to adversely affect” Ute ladies’-tresses is based on the results of multiple surveys of potential suitable habitat for Ute ladies’-tresses by different mines, during multiple years, during the known time of flowering, using accepted techniques. Although it is possible that the orchid could be dormant during some years, it is not likely that it would have remained undetected in this area during these surveys, if it is present. Therefore, the determination is made that leasing these tract is not likely to adversely affect Ute ladies’-tresses. Conclusions related to the black-tailed prairie dogs and potentially associated species such as the black-footed ferret and mountain plover are based on similar information.

None of the LBA tracts include any active or inactive sage grouse leks, and the existing, currently active sage grouse leks in the General Analysis Area are located in closer proximity to existing, already approved mining operations than they are to the LBA tracts. Annual wildlife surveys conducted for the existing mines in this area have also monitored sage grouse activity for multiple years within the wildlife survey areas, which have included most of the area in the LBA tracts. Requirements to protect sage grouse during mining

operations are addressed as part of the existing mining and reclamation plan for each mine, and will be addressed in the mining and reclamation plan amendments for each tract that is leased prior to mining operations on that tract.

Annual wildlife surveys conducted for the existing mines in this area have also monitored Migratory Bird of High Federal Interest/Migratory Bird Species of Management Concern in Wyoming for multiple years within the wildlife survey areas, which have included most of the area in the LBA tracts, as discussed in Section 3.10.5 of the EIS. As a result, information is available about the occurrence of burrowing owls, loggerhead shrike, upland sandpipers, and other sensitive bird species in this area. Conclusions related to potential impacts to these species are based on this information.

5. Cumulative groundwater drawdown impacts are addressed in Section 4.5.5 and drawdowns in the coal are predicted to be additive. As discussed in Section 3.6.1 of the EIS, the coal aquifer is considered to be a regional aquifer in this area due to its continuity, but the shallower aquifers in the area are lenticular sandstones which are limited in areal extent. They are therefore not considered to be regional aquifers because they are not continuous and are poorly connected or unconnected to one another. Monitoring conducted by BLM to determine how removing water from the coal aquifer affects shallower aquifers has also indicated that these shallower aquifers are poorly connected or unconnected to the coal. As a result, actions that affect the groundwater levels in the coal aquifer, such as CBM production or coal removal, have little to no effect on shallower aquifers or springs or seeps fed by those aquifers. Since the shallower aquifers are limited in areal extent, removal of the shallower aquifers in the area of coal removal would not cumulatively affect shallower aquifers or springs or seeps fed by those aquifers that are located more than one or two miles outside the area of coal removal.

Drawdowns in the coal aquifer would affect springs or seeps fed by the coal beds, but this would occur in areas where a saturated coal seam is close to the surface, such as areas close to the coal outcrop, low spots or draws, or stream drainages like Antelope Creek, where the surface has been eroded down to the level of the coal. Surface coal mining was initiated in the areas where the coal was closest to the surface. The LBA tracts are, for the most part, located outside of the area where the coal is close enough to the surface to feed springs or seeps, in areas that are west of the coal outcrop and existing mining operations.

No springs or seeps have been documented within the federal coal tracts being considered for leasing. If the tracts are leased, more detailed studies would be conducted as part of the mining and reclamation permit requirements. Currently unidentified springs could be located during that process and, if that

is the case, disturbance of those springs or seeps would be addressed in the mining and reclamation permit.

6. Handling of hazardous and solid waste at the existing mines in the Powder River Basin is discussed in Section 2.0 of the EIS. This is considered part of the Proposed Action because it is required by regulation and, if the LBA tracts are leased, the regulatory requirements would be extended to include any mining operations on the newly leased lands. Handling of overburden material that may be unsuitable for reclamation (i.e., material that is not suitable for use in reestablishing vegetation or that may affect groundwater quality due to high concentrations of certain constituents, such as selenium, or adverse pH levels) is discussed in Section 4.1.2 of the EIS. As part of the mine permitting process, each mine operator is required to develop a management plan to ensure that this unsuitable material is not placed in areas where it may affect water quality or revegetation success.

7. Potential cumulative effects to wildlife are discussed in section 4.5.9 in the EIS as well as Appendix G of the Draft EIS (Appendices G through K of the Final EIS, which have been revised based on comments and discussion with USFWS, as discussed above). Global climate impacts are discussed in Section 4.5.4 and 4.6 of the EIS.

8. The EIS analyzes the impacts of leasing additional coal to four existing surface coal mines. As a result, the impacts that would result from mining the coal would not be new impacts, but would be an extension of existing impacts onto adjacent areas. In some cases, the impacts would be extended in time as well as area. The impacts of surface coal mining in the Wyoming PRB have been inventoried, monitored, mitigated, and reclaimed for twenty to thirty years. The EIS bases the analysis of impacts of mining potential new leases on the impacts that have been observed and documented during more than twenty years of inventorying, monitoring, mitigating and reclaiming on existing leases. The impacts of coal mining on the environment are intense in the area of mining, but they are not extensive outside of that area. As indicated above, the entire area of existing and proposed surface coal mining would affect about 2.2 percent of Campbell and Converse Counties.

Response to Comment Letter 2: Army Corps of Engineers

The EIS has been revised as requested.

Response to Comment Letter 3: Triton Coal Company, LLC

1. The description of Alternative 2 in the Draft EIS did not inadvertently omit Lot 13 of T.42N., R.70W. Alternative 2 is a separate alternative identified by the BLM and it considers leasing a tract that includes the area that

separates the two tracts comprising the West Roundup Tract as applied for, but no additional area.

Alternative 3 in the Draft EIS includes the area separating the two tracts as applied for and an additional study area. The study area includes unleased federal coal adjacent to the tract as applied for which BLM was considering adding to the tract to potentially maintain or increase the potential for competitive interest in the tract. The Final EIS identifies BLM's Preferred Alternative, which is to add the area between the two tracts as applied for and a portion of the Alternative 3 study area to the tract as applied for. BLM's Preferred Alternative in the Final EIS, which does include Lot 13, reflects the lease configuration described by BLM in the April 19, 2002 letter.

2. Under BLM's Preferred Alternative, the area included in North Rochelle Mine's proposed lease modification and the area under North Rochelle's USDA-FS Special Use Permit would be added to the tract as applied for. As indicated in the EIS, this area is included under BLM's Preferred Alternative because it may be possible to recover portions of the coal reserves in this area when the surrounding coal is mined. If this coal remains as an unleased peninsula of coal surrounded on three sides by leased coal, there would be no opportunity to recover any of the coal when the surrounding coal is mined. As discussed in the EIS, the fact that the coal underlying the railroad spur, county road, and mine facilities cannot be economically recovered at this time will be taken into account by the BLM when the fair market value of the tract is determined.

Response to Comment Letter 4: National Park Service

1. The actions that are evaluated in the South Powder River Basin Coal EIS are not new actions that will add new air pollution sources in the Powder River Basin. If these tracts are leased, they will be maintenance leases for existing mines; they represent a continuation of existing operations in the Powder River Basin. Coal production in the Powder River Basin has been steadily increasing since the late 70s, but this is a reflection of increasing demands for electrical power generation, in the Midwest Region and elsewhere.

BLM also has concerns about existing and increasing air quality impacts resulting from energy development in the Powder River Basin and elsewhere. In order to help us evaluate the potential impacts of future actions more effectively, the Wyoming BLM is currently starting work on a two-year technical study to assess current coal development, develop projections of expected future development, and develop data and modeled projections of the effects of projected surface coal mining in the Wyoming Powder River Basin on key resource and social values. Briefings on this study have been scheduled with state and federal agencies. Please contact Mike Karbs with the BLM Casper Field Office for more information on this project.

2. The Land and Water Fund properties listed in your comment letter are all more than 100 miles northwest of the project area. The tracts being evaluated for leasing are maintenance tracts for existing mining operations, there would not be any new operations as a result of leasing these tracts. The direct environmental impacts of surface coal mining are generally localized in the general area of mining. The coal that would be mined if these tracts are leased would not be transported in the direction of the referenced L&WCF properties. As a result, no environmental consequences to the L&WCF properties referenced in your comment letter would be anticipated as a result of leasing the federal coal tracts being evaluated in the South Powder River Basin Coal EIS.

Response to Comment Letter 5: Office of Federal Land Policy

Thank you for comments and continued participation in the coal leasing process.

Response to Comment Letter 6: Wyoming Game and Fish Department (WGFD)

1. Under the BLM's Preferred Alternatives for the LBA tracts, approximately 3,580 acres of surface lands included in the Thunder Basin National Grassland (TBNG) would be included in three of the five LBA tracts (NARO North, operated by Powder River Coal Company - 1,720 acres; Little Thunder, operated by Thunder Basin Coal Company - 1,100 acres; and West Roundup, currently operated by Triton Coal Company LLC - 760 acres). The Final EIS has been revised to indicate the concerns of WGFD that these lands represent a significant portion of currently accessible public lands for recreational opportunity within Antelope Hunt Area 27, Deer Hunt Area 10, and small/upland Game Hunt Area 36 and that the loss of hunting access to these lands may decrease the ability of the WGFD to manage big game species toward objective levels. The Final EIS also reflects that this loss of access may extend for 20 years or more.

The TBNG lands that are included in three of the LBA Tracts are administered by the Forest Service (USDA-FS). The TBNG is a mixture of public and private surface lands. In some cases, the public lands are isolated parcels surrounded by private lands, which are not easily accessible to the public. The three LBA tracts that include National Forest System lands are located near the western edge of the TBNG and are comprised of both public and private lands. The National Forest System Lands represent about 35 percent of the lands included in the three tracts. According to the USDA-FS Douglas Ranger District, the mines can officially only deny public access to National Forest System lands included in federal coal leases within the "active area fence" for each mine and, if the mines remove publicly accessible roads from public access, they must provide alternate publicly accessible roads in that area (personal communication, JoAnne Homuth, USDA-FS Douglas Ranger District,

10/9/2003). As an example, Powder River Coal Company, with the approval of Campbell County and the USDA-FS, is scheduled to implement a program that includes closing approximately 5.3 miles of the Piney Canyon Road and upgrading approximately 2.5 miles of the Payne Road. The upgrade will include surfacing the Payne Road with a permanent treatment designed to substantially reduce dust emissions. Public access from the upgraded Payne Road and the eastern portion of Piney Canyon Road will remain.

In order to consolidate federal ownership and facilitate public access to public lands in the TBNG, USDA-FS has chosen to pursue, and has successfully completed, a number of federal/nonfederal land exchanges. According to information received from USDA-FS Douglas Ranger District, from 1993 through 2000, the Douglas Ranger District completed 21 land exchanges involving more than 69,000 federal acres. In exchange for these federal lands, the USDA-FS acquired more than 46,000 acres, eliminated 12 private inholdings within federal lands, eliminated 71 isolated parcels of public lands, and gained 426.8 acres of wetlands. Among the benefits of these kinds of exchanges is creation of more contiguous blocks of National Forest System land, making state land more accessible and usable by the general public, and decreasing conflicts related to crossing private land to reach public land. Thunder Basin Coal Company and Powder River Coal Company have participated and are continuing to participate with the USDA-FS on some of these exchanges.

2. The Final EIS has been revised to include more of the available information on aquatic species in this area. Additional information on this topic is also included (in the Final EIS) and was included (in the Draft EIS) in the discussion of Sensitive Species (Appendix G in the Draft EIS, Appendix K in the Final EIS) and in the document entitled *Supplemental Information on the Affected Environment in the General Analysis Area for the South Powder River Basin Coal Lease Applications Draft Environmental Impact Statement*, which is referenced in the EIS and is available on request.

As is indicated in the EIS, BLM does not authorize mining by issuing a lease for federal coal. The tracts being considered for leasing would be maintenance leases for existing mines, which have approved mining and reclamation permits. If the tracts are leased, the lessees would be required to modify their existing mining and reclamation permit to include the newly-leased lands prior to mining those lands. Monitoring and mitigation plans for wildlife have been developed and approved for the existing mines. Mitigation and monitoring plans that are specific to the new leases would be developed at that time. Surface coal mining operations in the state of Wyoming are regulated by the Wyoming Department of Environmental Quality (WDEQ), which must approve the mining and reclamation permits before mining can occur.

Chapter 3 of the EIS is a description of the “Affected Environment” in the General Analysis Area. The discussion on Page 3-49 describes the existing situation, which is that most of the streams in the LBA tracts are ephemeral, which is discussed further in Section 3.6.2 of the EIS and in the Supplemental Information Document, and that water produced by CBM development may create perennial flow. Statements about the existing conditions are based on measurements and observations conducted by the existing mines for more than 20 years. Similarly, the EIS states that fishing opportunities are extremely limited in this area. This is the existing situation, not only because the ephemeral nature of many of the streams in this area, but also because the surface estate of most of the area being considered for leasing (77 percent) is privately owned and not accessible to the public. This is particularly true along streams. Baseline aquatics surveys were conducted, as required, prior to the initiation of mining in this area, in the late 1970s and early 1980s, and additional aquatic surveys have been conducted as required by the permitting agencies. Baseline wildlife surveys for the LBA tracts have been conducted in accordance with the current mining and reclamation plan requirements, which are administered by the WDEQ, as indicated previously.

3. Design of the existing stream diversion channels were developed for the existing mining operations as part of the approved mining and reclamation permit. An amended mining and reclamation permit incorporating any changes to the stream diversion plans must be reviewed and approved by WDEQ prior to the initiation of coal removal on the LBA tracts, if they are leased.

4. The EIS identifies both beneficial impacts (reduction of water runoff and increased infiltration as a result of topographic moderation following reclamation) and adverse impacts (reduction in microhabitats and reduction in habitat diversity as a result of topographic moderation following reclamation, increase in water runoff as a result of loss of soil structure following reclamation). The EIS notes that the area of disturbance from the five mines in the Wright area would increase from four percent to six percent of the drainage basin of the Cheyenne River, if the LBA tracts are leased.

5. Information on past surveying for aquatic wildlife was presented in Chapter 3 and Appendix G of the Draft EIS and in the Supplemental Information Document, discussed in Response 2, in order to describe what is known about the existing situation, i.e., the “Affected Environment”, in the General Analysis Area. The discussion in Chapter 4 relates to the potential impacts to fish habitat. Additional information about baseline and subsequent aquatic surveying is added to Section 3.10.6 and in Appendix K of the Final EIS.

The Final EIS has been changed to correctly describe the fish species that have been identified in Antelope Creek. The fathead minnow (*Pimephales promelas*)

is correctly identified in the Supplemental Information Document as one of three common species found in the 1980 baseline study at the Spring Creek confluence with Antelope Creek, which is inside the West Antelope LBA Tract. The flathead chub (*Platygobio gracilus*), which is listed as a Sensitive Species by the USDA-FS, is correctly identified as having been found in 1978 and 1980 surveys of Antelope Creek downstream of the LBA tract in Appendix G of the Draft EIS, which also discusses baseline surveys conducted in 1998 on Horse Creek, on the existing Antelope Mine downstream of the LBA tract, which only encountered green sunfish. This information has been added to Section 3.10.6 in the Final EIS and Section 4.1.10 has been corrected. Baseline surveys of Antelope Creek on the West Antelope LBA Tract would be conducted as part of the mining and reclamation permit process.

6. The referenced discussion of potential cumulative impacts to surface water resources on page 4-117 of the Draft EIS compares potential impacts related to CBM development (“These CBM water discharges would be constant,...”) to the situation before CBM water discharges (“..., as opposed to naturally occurring flows that fluctuate widely on a seasonal and annual basis.”). This discussion is not intended to address impacts to aquatic species. The discussion of potential cumulative impacts to aquatic species in Section 4.5.9 has been expanded.

7. BLM does not authorize surface mining operations by issuing a lease for federal coal. As discussed in Section 1.2 of the EIS, WDEQ is authorized by the Secretary of the Interior to regulate surface coal mining operations and surface effects of underground mining on federal and nonfederal lands within Wyoming. Mitigation and monitoring requirements are developed as part of the mining and reclamation permit, which must be approved by WDEQ before mining operations commence on the leased federal coal lands.

Each of the mines adjacent to the tracts being evaluated in this EIS has an existing mining and reclamation permit, including mitigation and monitoring requirements, for their existing leases. Some of the mitigation measures and monitoring requirements that are currently in place for the existing mining operations are discussed in Section 4.3 of the EIS. If the tracts evaluated in this EIS are leased, the existing mining and reclamation permit must be amended and approved before the tracts can be mined. If the existing mitigation and monitoring requirements are not adequate to address WGFD’s concerns, then WGFD could discuss these deficiencies when the existing mining and reclamation plans are modified for newly leased lands.

The entire area of mining disturbance from the five mines located east and southeast of Wright, Wyoming would impact approximately four percent of the drainage basin of the Cheyenne River, and this disturbance would occur over approximately 50 years. Leasing the five proposed LBA tracts would increase

the area of disturbance to approximately six percent of the Cheyenne River Drainage basin at the Black Thunder Creek confluence.

BLM is evaluating the impacts of leasing five maintenance tracts of federal coal to existing coal mines in this EIS. As discussed in the EIS, streamflow in affected streams may be reduced, not increased, during surface coal mining operations because SMCRA and Wyoming state regulations require capture and treatment of all runoff from disturbed areas in sedimentation ponds before it is allowed to flow off the mine permit areas. CBM development could potentially increase surface flow in some areas. As indicated in the EIS, from a cumulative impact standpoint, the increased surface water flows due to surface CBM water discharges and the reduced flows due to surface coal mining would tend to offset each other.

Response to Comment Letter 7: Tindall Operating Company

The EIS discloses the environmental and socioeconomic impacts of issuing leases for the federal coal in the LBA tracts, including the presence of potentially affected private and federal oil and gas leases within the LBA tracts (Section 3.11, Figures 3-15 through 3-18, Tables 3-10 through 3-13) and the existence of ancillary facilities to support oil and gas production (Section 3.11). It identifies that, in order for the coal to be mined, oil and gas development must be curtailed and development facilities and equipment must be removed prior to mining (Sections 4.1.12 and 4.5.11), and that mine-related dewatering has and is continuing to deplete hydrostatic pressures and methane resource adjacent to mining areas (Section 4.1.2.1). Appendix D of the EIS lists the stipulations that are included on coal leases in the Powder River Basin, which include stipulations addressing multiple mineral development and oil and gas/coal resources. The Final EIS has been changed to reflect that negotiations are not ongoing between all of the applicant mines and all of the existing oil and gas lessees.

Response to Comment Letter 8: Triton Coal Company

The Final EIS has been revised to reflect your comments

Response to Comment Letter 9: Ark Land Company

The Final EIS has been revised to reflect your comments

Response to Comment Letter 10: U.S. Fish and Wildlife Service

1. The BLM does not authorize mining operations by issuing a lease and does not regulate mining operations after a lease is issued. As discussed in Section 1.2 of the EIS, WDEQ is authorized by the Secretary of the Interior to regulate surface coal mining operations and surface effects of underground

mining on federal and nonfederal lands within Wyoming. Mitigation and monitoring requirements are developed as part of the mining and reclamation permit, which must be approved by WDEQ before mining operations commence on the leased federal coal lands. Attaching stipulations designed to regulate mining operations to a lease document that does not regulate mining operations is not an effective or enforceable mechanism to address conservation of listed species during mining operations.

2. The statement on page ES-25 of the Draft EIS is a summary of the information discussed in the “Habitat and/or Occurrences” discussion for each tract in Appendix G of the Draft EIS, and is based on the results of baseline and annual wildlife surveys conducted for each mine. Section 4.5.9 of the Final EIS, which discusses potential cumulative wildlife impacts, has been revised to include the information provided in your comments and that information has been summarized in the cumulative wildlife impacts discussion in the Executive Summary.

The SMCRA regulations at 30 CFR 816.97(e)(1) require that each surface coal mine operator shall, “to the extent possible using the best technology currently available,” --- “ensure that electric powerlines and other transmission facilities used for, or incidental to, surface mining activities on the permit area are designed and constructed to minimizes electrocution hazards to raptors, except where the regulatory authority determines that such requirements are unnecessary.”

As discussed in Section 4.1.10 of the EIS, there is an approved raptor mitigation plan for each of the existing applicant mines and that these monitoring and mitigation plans would be amended to include any newly-leased tracts as required by USFWS and WDEQ/LQD. Use of raptor-safe power lines based on the best technology currently available is required as part of the approved existing mining and reclamation permit for each mines, as required by law. The existing mining and reclamation permits would be amended to include mining operations on the LBA tracts, if they are leased and permitted for mining.

3. BLM contacted the USDA-Forest Service, Douglas Ranger District, which administers the Thunder Basin National Grassland (TBNG), regarding attachment of a stipulation to the leases that include TBNG lands which would require the mining companies to pursue leased private lands from willing landowners for habitat conservation and public recreation. The Forest Service would not add a stipulation at the lease phase. At the permit phase, they have included stipulations related to allowing access to TBNG lands included in existing federal coal leases. The Forest Service does not allow the mines to close access to all public lands within the permit boundary. Access can be closed in areas that are currently being actively mined for human health and

safety reasons (JoAnne Homuth, USDA-FS Douglas Ranger District, Personal Communication, October 20, 2003).

As discussed in Response Number 1 of the Responses to Comment Letter No. 6 from the Wyoming Game and Fish Department, above, the Forest Service has chosen to pursue and has successfully completed a number of federal/nonfederal land exchanges in order to consolidate federal ownership and facilitate public access to public lands in the TBNG. Thunder Basin Coal Company and Powder River Coal Company have participated and are continuing to participate with the Forest Service in facilitating some of these exchanges.

4. The EIS analyze the impacts of leasing maintenance tracts to existing mines, based on the observed impacts that have occurred and the knowledge that has been gained from mining and reclamation practices, mitigation measures and monitoring of surface mining operations that have been conducted in the Powder River Basin for thirty years. The Office of Surface Mining Reclamation and Enforcement (OSM) is a cooperating agency on this EIS and has been a cooperating agency on previously-prepared EISs analyzing the impacts of leasing federal coal in the basin. OSM has reviewed this EIS and previously prepared EISs to ensure that the analyses are adequate for their needs when the MLA mining plans are evaluated for approval by the Secretary of the Interior. Your comments did not specifically identify impacts that have been omitted in this and the previous leasing EISs prepared for the Wyoming Powder River Basin. We would be happy to meet with you and OSM to discuss additional information that you have identified that should be included in the EISs.

5. Information has been added to the Final EIS about the sage grouse habitat affected by the Proposed Actions and Preferred Alternatives considered in this EIS. One active lek, discovered in spring 2001, is located approximately 1.3 miles east of the NARO North LBA Tract, approximately 9,000 feet (about 1.7 miles) north of currently active mining operations. None of the other LBA tracts are within two miles of an active lek, which research has indicated is the area within which most hens will nest. The Little Thunder and West Roundup LBA Tracts are located within two miles of an abandoned lek (the Black Thunder lek, at which no sage grouse have been observed since 1994). This abandoned lek is on an existing coal lease within an area that will be affected by currently approved mining operations. The information summarized above is based on baseline and annual wildlife surveys for the existing mines, which have been conducted for more than 20 years by the existing mines. Most of the area included in the proposed lease tracts has been included in these annual surveys for many years because the wildlife survey areas include the permitted mining areas plus a buffer zone that extends from one-half to two miles beyond the permit boundaries, depending on the type of survey being conducted.

6. Appendices G through J of the Final EIS have been revised to include an expanded discussion of the surveying that has been conducted in the prairie dog colonies on proposed lease tracts and surrounding mine areas and the likelihood of black-footed ferret occurrence in this area.

7. The Final EIS has been revised to include the information on sage grouse included in your comment on the Draft EIS.

8. As discussed in the EIS, the U.S. Army Corps of Engineers (COE) reviews all surface coal mining and reclamation permits. COE requires mitigation of all impacted jurisdictional wetlands in accordance with Section 404 of the Clean Water Act. They approve the plans for wetland restoration and the number of acres to be restored. 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 type and function of the original wetland. The wetland mitigation plan approved by COE becomes part of the WDEQ mining permit.

9. The referenced discussion of potential impacts to displaced songbirds on page 4-68 of the Draft EIS has been revised to address Migratory Bird Species of Management Concern in Wyoming. As discussed in Section 3.10.5 of the EIS, suitable nesting habitat for most of the Migratory Bird Species of Management Concern in Wyoming is scarce or absent in the General Analysis Area.

As discussed in the EIS, each existing mine has an approved raptor mitigation plan, which is subject to USFWS review and approval before the mining and reclamation plan is approved. The existing plan for each mine would have to be amended to include any newly leased areas prior to initiation of mining activities on those areas. Any nest that will be impacted by mining operations must be relocated in accordance with the approved raptor mitigation plan, after special use permits are secured from USFWS and WGFD. The existing mines in the General Analysis Area have previously completed this process on their existing leases.

Mine-related disturbances for the existing approved mining operations are not allowed to encroach in the near vicinity of any active raptor nest from March until hatching, and disturbances near raptor nests containing nestlings is strictly limited to prevent danger to, or abandonment of, the young.

10. The Final EIS has been revised to reflect your comment. Although the USFWS published a notice withdrawing a proposal to list the mountain plover as a threatened species on September 8, 2003, the EIS discussions related to mountain plover are retained in Appendices G through K and other sections of the EIS.

11. As discussed in Response 1, above, BLM does not authorize mining operations by issuing a lease and does not regulate mining operations after a lease is issued. As a result, attaching stipulations designed to regulate mining operations to a lease document that does not regulate mining operations is not an effective or enforceable mechanism to address conservation of listed species, habitat restoration, or other mitigation measures during mining operations.

12. Appendix G of the Draft EIS has been revised, based on written comments from and oral discussions with USFWS that have taken place since the Draft EIS was published. There are separate appendices covering threatened, endangered, proposed, and candidate species for each tract in the Final EIS (Appendices G through J). The revised appendices have been provided to USFWS for further comment and consultation for each tract will be completed prior to issuance of a decision for that tract.

13. In 2001, the BLM Wyoming State Director determined that, although BLM is not authorizing mining operations through issuance of a lease for federal coal, BLM would complete consultation with USFWS on pending federal coal leasing actions. This decision was made prior to the letter referenced in your comment. As discussed above, consultation will be completed as required prior to issuance of a decision to lease or not to lease each federal coal tract evaluated in this EIS. Although a detailed mining and reclamation plan for recovering the coal in and reclaiming the surface on each federal coal tract does not exist during the leasing stage, the EIS addresses impacts of mining the proposed federal coal tracts being evaluated based on the impacts that have occurred as a result of the existing approved mining operations on the adjacent mines, and on the information available on the federal coal tracts proposed for leasing as a result of the monitoring and surveying that has been conducted for the existing mines. Appendices G through J of the Final EIS address habitat, occurrence, and potential effects on listed and proposed species, based on the information available from baseline and annual wildlife surveys conducted for the adjacent mines during the last 20 to 25 years. The discussion has been expanded in the Final EIS in response to comments from and meetings with USFWS. As referenced in your comment letter, consultation with USFWS is also conducted prior to approval of the state mining and reclamation permit and the MLA mining plan, which is based on a detailed, site specific plan to mine and reclaim the newly leased lands. This consultation is conducted between the USFWS and the Wyoming Department of Environmental Quality/Land Quality Division, who represents and is under the oversight of the Office of Surface Mining, also a federal agency.

14. Although the USFWS published a notice withdrawing a proposal to list the mountain plover as a threatened species on September 8, 2003, the discussions related to mountain plover are retained in Appendices G through K and other sections of the Final EIS. These discussions are retained because the decision to withdraw the proposal to list the mountain plover could be

appealed, and resolution of any appeals could change the decision to withdraw the listing. Additional information related to mountain plover habitat and occurrence on the LBA tracts and the surveys that have been conducted on those tracts are included in the Final EIS.

15. Additional information about the techniques, timing, and results of surveys conducted for Ute ladies'-tresses on each tract is included in Appendices G through J of the Final EIS. BLM has provided those appendices to USFWS for preliminary review and will continue to work with USFWS to address additional information needs.

16. USDA Forest Service and BLM Sensitive Species information is included in Appendix K of the Final EIS, and that information has been reviewed by both Forest Service and BLM biologists.

17. The Final EIS has been revised to address this comment; however, not all of the past and present activity referenced in the comment letter would have impacts that are or would be directly or indirectly cumulative to the actions considered in this EIS. The existing federal coal leases occupy approximately 108,011 acres in Campbell and Converse Counties, which represents approximately 1.9 percent of the combined areas of Campbell and Converse Counties. If the five LBA tracts are leased under BLM's Preferred Alternatives, approximately 16,000 additional acres would be added and the acres of leased federal coal would increase to approximately 2.2 percent of the combined areas of Campbell and Converse Counties. (Most of the existing leases are in Campbell County and occupy about 3.4 percent of Campbell County. This would increase to approximately 3.9 percent of Campbell County if the LBA tracts are leased.) Most of the direct and indirect impacts related to mining those leases tend to be localized in the area of mining, with the primary exceptions being some of the cumulative air quality, groundwater quantity, and transportation impacts, which are addressed in Section 4.5 of the EIS. The federal coal tracts evaluated in the South Powder River Basin Coal EIS would be leased as maintenance tracts for existing mines; as a result, they represent continuations of existing mining activity and associated impacts in the Powder River Basin, not new mining development and associated new impacts.

The Wildlife Monitoring Section of the 2002 Annual Report for the Antelope Mine discusses a May 23, 2002 agreement between the USFWS and Antelope Coal Company to restore 160 acres of mountain plover habitat to mitigate the loss of such habitat as a result of previous mining. The habitat restoration project involves establishing mountain plover habitat in reclaimed areas through the translocation of prairie dogs into artificially constructed colonies, because observations over the last 20 years have documented that mountain plovers in this area have been most common in the black-tailed prairie dog colonies located on and near the Antelope Mine permit area. Work on this project began in 2002, with the construction of two prairie dog colonies on

reclaimed land at two sites and the translocation of prairie dogs to those artificially constructed colonies.

Response to Comment Letter 11: U.S. Environmental Protection Agency

As stated in your cover letter, EPA's main concern is air quality in the PRB. In order to respond more accurately to some of your comments, BLM consulted the Wyoming Department of Environmental Quality (WDEQ), which has, by statute, the authority and responsibility to implement air quality mitigation in the PRB, as you stated in your cover letter. The Air Quality Division (AQD) and Land Quality Division (LQD) of WDEQ have each provided information on their regulatory programs, including monitoring data and mitigation measures, and this information has been used to revise the Final EIS and to prepare responses to comments on PM₁₀ air quality issues, blasting practices, and other issues related to the air quality and mining and reclamation permit process.

Detailed Comment Responses
Air Quality

PM₁₀, Fugitive Dust

1. The Draft EIS discloses exceedances recorded by monitoring at two of the coal mines with applications that are included in this EIS. The Final EIS has been updated to include exceedances recorded to date in the PRB. A discussion of the differences between the models and assumptions used for the regional air quality impact analysis and the mine-specific air quality impact analyses in the Wyoming Powder River Basin has been added to the Final EIS. Measures that are being used to reduce PM₁₀ emissions are discussed in both Chapters 3 and 4 of the Final EIS.

2. Annual PM₁₀ NAAQS Exceeded in the PRB In reviewing the examples cited in the EPA comment letter, WDEQ/AQD had the following comments:

EPA Example 1: North Rochelle South (56-005-0874)

When calculated in accordance with 40 CFR Part 50, Appendix K, the 2000 annual mean is 51 µg/m³, however, 40 CFR Part 50, Appendix K also states "...and a minimum of 75 percent of the scheduled PM₁₀ samples per quarter are required" [emphasis added]. There was only one valid sample in the 4th quarter. Therefore, the 2000 annual mean is not an exceedance based on WDEQ/AQD's interpretation of 40 CFR Part 50 Appendix K.

EPA Example 2: North Rochelle North (56-005-0907)

WDEQ/AQD does not agree that, when calculated in accordance with 40 CFR Part 50, Appendix K, the 2001 annual mean is 51 µg/m³. Two

different samplers were used in 2001, one was filter based (a “regular” PM₁₀ sampler) the other was not (TEOM). The annual means from both samplers (51 µg/m³ and 49 µg/m³) are averaged together resulting in a 2001 annual mean is 50.4 µg/m³, which rounds down to 50 µg/m³ and is not an exceedance.

As discussed at a meeting held on October 16, 2003 at the BLM Wyoming State Office in Cheyenne, which included representatives from EPA, WDEQ/AQD, USDA-FS, and BLM, the EIS needs to disclose that PM₁₀ concentrations have been increasing since the early 1990s and are at levels that concern the regulatory agencies. The regulatory requirements and calculations used to arrive at a conclusion as to whether there have or have not been any violation of the annual PM₁₀ standard needs to be discussed by WDEQ/AQD and EPA.

3. Current Monitoring Data Exceed Predictions of Wyoming DEQ Permit Model In evaluating the effectiveness of the current approach used by WDEQ/AQD to control PM₁₀, it is important to consider that monitoring of PM₁₀ 24-hour emissions has not corresponded to predictive models at three monitoring sites out of approximately 45 sites located in the Powder River Basin during two years out of more than 20 years of monitoring. The three monitoring sites are located within approximately two miles of one another at two coal mines. According to WDEQ/AQD, the exceedances of the 24-hour PM₁₀ standard at these two mines are compliance issues related to mining operations, which are being dealt with through enforcement actions requiring compliance plans. WDEQ/AQD believes that action levels and operational changes will bring production at the permitted level in compliance with the 24-hour PM₁₀ standard. In the event that compliance cannot be demonstrated at the current permitted level, a lower annual production rate would have to be evaluated for compliance. As discussed above (Response 2), WDEQ/AQD does not agree that there has been an exceedance of the PM₁₀ annual NAAQS.

4. Air Modeling Discrepancies The EIS presents information obtained from two air quality impact analyses prepared for different purposes using different modeling techniques and assumptions. A discussion of the differences between the models and assumptions used for the regional air quality impact analysis and the mine-specific air quality impact analyses in the Wyoming Powder River Basin has been added to the Final EIS.

a. The background concentrations used in each analysis were not selectively chosen to give predictions less than NAAQS.

The WDEQ/AQD air quality permit analyses use a background PM₁₀ concentration of 15 µg/m³, which WDEQ/AQD has chosen as representative of background ambient air quality in the area without activity (i.e., prior to the operation of the coal mine sources). In the WDEQ/AQD air quality permit analyses, potential emissions corresponding to the entire maximum production

level from the coal mine undergoing permitting and other coal mines in the area are added to this background concentration, regardless of when the coal mine was permitted or constructed.

The cumulative air quality impact analysis prepared to evaluate the impacts of proposed CBM development in Wyoming and Montana uses a background PM₁₀ concentration of 17 µg/m³, which is a recently monitored value that is used as representative of all sources operating as of a specified date (i.e., prior to the addition of more sources). The 17 µg/m³ background PM₁₀ concentration was monitored in Gillette and is used as the background for the entire PRB, including existing coal mining operations, as of the specified date. The Wyoming and Montana cumulative air quality impact analysis was based on inventorying and modeling impacts from sources permitted and constructed after the date corresponding to the monitored background concentration. Using this approach, only the projected production increases at the coal mines, not the entire permitted production, are included in the Wyoming and Montana cumulative air quality impact analysis.

b. The Wyoming and Montana cumulative air quality impact analysis, which includes a combined project area of more than 33,000,000 acres, focuses on oil and gas and coal bed methane development in northeastern Wyoming and southeastern Montana and considers other sources in the area, including surface coal mines and sources from adjacent states, on a broad cumulative basis.

The WDEQ/AQD air quality analyses, each of which may cover several thousand acres, focus on specific surface coal mining operations at individual mines, and consider potential overlapping impacts from adjacent surface coal mining operations.

The differences in the air quality analyses methodologies include, but are not limited to:

Different models

- ⊘ The ISCLT model is used for the WDEQ/AQD air quality permit analyses – annual only
- ⊘ CALPUFF is used for the Wyoming and Montana cumulative air quality impact analysis

Different emissions inventories for the coal mines

- ⊘ Total mine production is used for the WDEQ/AQD air quality permit analyses
- ⊘ Projected production increases after a specified date are used for the Wyoming and Montana cumulative air quality impact analysis

Different mine boundary representations for the coal mines

- ≠# Lands Necessary to Conduct Mining (LNCM) boundaries are used for the WDEQ/AQD air quality permit analyses
- ≠# Representative rectangular areas are used for the Wyoming and Montana cumulative air quality impact analysis

Different background PM₁₀ concentrations (see 4.a. above)

Given these substantial differences in methodology and scope, a direct comparison of the results of these two analyses is probably not meaningful. It is not unexpected that the concentrations predicted by a WDEQ/AQD air quality permit analysis, which is a near-field analysis covering a small area in detail, is higher in localized areas than those predicted by the Wyoming and Montana cumulative air quality impact analysis, which is a broad cumulative analysis covering a substantially larger area using a different methodology. The EIS includes the methodology and results of the WDEQ/AQD analyses in Section 4.1.4. This is the section of the EIS covering the direct and indirect impacts of the action being considered, which is leasing additional coal in specific tracts to existing mines in the PRB. The discussion of the WDEQ/AQD analysis process has been expanded in the Final EIS. The EIS presents the results of the cumulative air quality analysis prepared for the Wyoming *Final EIS and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project* and the Montana *Final Statewide Oil and Gas EIS and Proposed Amendment of the Powder River and Billings RMPs* in Section 4.5.4, which is the portion of the EIS covering cumulative impacts, and in the Air Quality Appendix (Appendix E). These documents will be referred to as the Wyoming Oil and Gas EIS and the Montana Oil and Gas EIS in the following discussions. The cumulative air quality impact analysis represents a much broader estimate of the potential regional air quality impacts as a result of all development in the PRB. This modeled assessment of potential air quality impacts includes a number of assumptions, which are both over- and under-conservative in nature, and it generalizes impacts due to its nature and scope, but it does represent the most comprehensive air quality analysis that has been conducted for northeast Wyoming and southeastern Montana to date.

5. Wyoming DEQ Permit Analysis The air quality results presented in the Executive Summary of the Draft South Powder River Basin Coal EIS summarize the discussion of air quality impacts presented in Section 4.1.4 of the Draft EIS, which describes the air quality impact modeling that has been and will be done for each mine, and identifies that this modeling is conducted as part of the WDEQ/AQD permitting process. This source of information was not included when the discussion in Section 4.1.4 was summarized in the Executive Summary. BLM agrees that the Executive Summary should identify the source of the data presented in Figures ES-7, ES-8, ES-9, and ES-10 as the WDEQ/AQD permit process. The Air Quality Appendix in the Draft EIS should have been labeled to reflect that it pertained to the cumulative impact analysis.

Additional discussion of the WDEQ/AQD air quality permit analysis process has been added to the Final EIS.

6. Use of High Winds as an Explanation for PM₁₀ Exceedances The occurrence of high wind speeds in December through February 2002 are disclosed in the Draft and Final EIS as a possible contributor to some of the higher PM₁₀ exceedances, not as an explanation for some or all of the exceedances. WDEQ/AQD has since advised BLM, and the Final EIS now states, that seven of the 21 exceedances of the PM₁₀ 24-hour standard that occurred in the PRB between April 19, 2001 and January 26, 2003 have been flagged in the AIRS database as having been impacted by winds in excess of 40 mph during the collection period. Of these 21 exceedances of the PM₁₀ 24-hour standard, 18 exceedances have occurred at the North Rochelle and Black Thunder Mines, which are both applicants for new leases being evaluated in the South PRB Coal EIS. Six of the occurrences at the Black Thunder and North Rochelle mines have been flagged in the AIRS database as having been impacted by winds in excess of 40 mph during the collection period. As discussed above, WDEQ/AQD considers the exceedances of the 24-hour PM₁₀ standard at these two mines to be compliance issues related to mining operations, which are being dealt with through enforcement actions requiring compliance plans. WDEQ/AQD believes that action levels and operational changes will bring production at the permitted level in compliance with the 24-hour PM₁₀ standard.

WDEQ/AQD uses site-specific meteorological input that includes both high and low wind days. As discussed previously, WDEQ/AQD does not agree that there has been an exceedance of the PM₁₀ annual NAAQS (see Responses 2 and 3 above).

7. Cumulative Impacts Above the PSD Class II Increment It is not correct to compare the concentrations predicted by the WDEQ/AQD air quality permit analyses to the PSD increments. The Draft EIS states (Section 3.5.7, page 3-31, referenced on page 4-20):

“Coal mining in the General Analysis Area is not currently affected by the PSD regulations for two reasons: surface coal mines are not on the EPA list of 28 major emitting facilities for PSD regulation, and point-source emissions from individual mines to not exceed the PSD emissions threshold of 250 tons per year.”

This discussion has been expanded in Chapters 3 and 4 of the Final EIS.

Nitrogen Dioxide

8. Nitrogen Dioxide According to information provided by WDEQ/LQD, the mines have been able to reduce the number of shots that produce nitrogen dioxide (NO₂) and the amount of NO₂ produced per shot by using different blasting agents, different additives, different initiation systems and sequencing,

bore hole liners, and smaller casts blasts, but they have not been able to eliminate NO₂ production due to the variety of factors that can contribute to incomplete combustion of the explosives. Two consecutive blasts using the same product and procedures often produce dramatically different results.

- a. The Final EIS identifies that there is no short-term exposure standard at either the state or national level for nitrogen dioxide and identifies the NIOSH, OSHA, and EPA short-term exposure criteria. Without an established short-term exposure standard which can be enforced, BLM has not identified a concentration for analyzing risk and developing mitigation that could be implemented by the appropriate regulatory agencies.
- b. The Draft EIS identified the locations of public roads in the area of each LBA tract (Figure 3-20 through 3-23) and the closest occupied residences to each tract (Section 3.16). The locations of occupied residences, bus stops, and publicly accessible facilities have been added to these figures in the Final EIS. These are the potential receptors that could be impacted by NO₂ releases related to blasting. As indicated by the limited presence of occupied dwellings, the area is very sparsely populated. Most of the roads that pass through the General Analysis Area are county roads, although portions of State Highways 59 and 450 are located in proximity to mining operations at several mines. Mineral-related traffic (related to coal or oil and gas development, including coal bed methane) is responsible for a majority of the road use in the General Analysis area.
- c. The Draft EIS discusses control measures that have been implemented on Pages 3-24 through 3-26. This discussion has been expanded Section 3.5.6.3 in the Final EIS.

9. Safe Concentration of Nitrogen Dioxide As discussed above (see Response 8.a.), the Final EIS includes the short-term exposure criteria identified by NIOSH, OSHA, and EPA, but recognizes that there is no short-term numerical exposure standard for NO₂ at either the federal or state level. According to WDEQ/LQD:

∅# In the Wyoming PRB, only the Eagle Butte Mine is required to use a set back distance that is based on a numerical exposure limit.

∅# The mitigation measures being implemented by the applicant mines included in the SPRB Coal EIS analysis are not dependent on a numerical standard, but are administrative controls designed to prevent NO₂ from reaching receptors.

10. Nitrogen Dioxide Concentrations The Wyoming Mining Association Study summarized in the Draft and Final SPRB Coal EIS was designed to monitor

NO₂ levels in publicly accessible areas and, accordingly, sites were selected for this study based on public accessibility and proximity to mining activities. The Black Thunder study was designed to collect NO₂ concentration data for a modeling study and, accordingly, the monitors were located as close to the blasts as feasible in order to collect the necessary data. These locations were in areas that are inaccessible to the public and are cleared of employees during blasting activities. The actual NO₂ measurements recorded in the Black Thunder study ranged from non-detectable to 21.4 ppm. The high value was measured 361 feet from the blast. The discussion in the Final EIS has been expanded to include more information and to clarify the differences between the two blasting studies and to discuss some of the changes in nitrogen dioxide emissions since the mines began developing new blasting methods.

11. Affected Environment for Nitrogen Dioxide Emissions The Draft EIS identifies roads and residences in the area of each tract in Sections 3.16 and 3.17. As indicated in the Draft and Final EIS, phone notification of workers and neighbors prior to blasting is both a voluntary and required measure that the mines have implemented when large blasts are planned. This includes occupants of nearby residences. The Final EIS includes additional information on occupied residences, bus stops, etc. in the vicinity of each mine. WDEQ/LQD does require mine operators to close public roads, including State Highway 450, Piney Canyon Road, Antelope Road, Reno Road, and School Creek Road, when blasting operations occur nearby, mainly for issues such as fly rock and the startle factor.

12. Mitigation for Nitrogen Dioxide Emissions The North Antelope/Rochelle Complex, North Rochelle Mine, and Antelope Mine have instituted voluntary measures to ensure that the general public is not exposed to NO₂ as a result of blasting activities. The control measures discussed on page 3-26 of the Draft EIS are permit requirements for the Black Thunder Mine. The mines that have instituted the voluntary measures can choose to discontinue them. However, exposure of the public to blasting clouds containing NO₂, with or without voluntary control measures, will trigger enforcement action, including non-voluntary permit requirements designed to control public exposure to NO₂, by the WDEQ/LQD. According to WDEQ/LQD, they have pursued voluntary measures in order to allow operators to develop new mitigation measures to address the problems.

The BLM does not authorize mining operations by issuing a lease and does not approve the mining and reclamation plan, which does regulate mining operations on the federal leases. Attaching a stipulation designed to regulate blasting operations to a lease document which does not authorize or regulate mining operations is not an effective or enforceable mechanism to address blasting concerns. Stipulations are applicable to the specific lease they are attached to, not to other leases, federal or non-federal, that comprise a particular mine.

As discussed in Section 1.2 of the EIS, the Surface Mining Control and Reclamation Act (SMCRA) delegates the authority for administering programs that regulate surface coal mining operations and surface effects of underground coal mining operations to the Office of Surface Mining and Reclamation. In Wyoming, WDEQ has entered into a cooperative agreement with the Secretary of the Interior to regulate surface coal mining operations and surface effects of underground mining on nonfederal and federal lands within the state. As discussed in Section 3.5.5 of the Draft EIS, WDEQ is requiring some mines, including the Black Thunder Mine, to monitor weather and atmospheric conditions prior to a decision to detonate a blast and to schedule blast detonations between 12:00 p.m. and 3:00 p.m. to avoid temperature inversions and minimize inconvenience to neighbors.

The mines have tried and are continuing to evaluate new technologies to reduce the potential for exposure to NO₂, with varying levels of success. Additional discussion of this topic has been included in the Final EIS. These measures are voluntary to allow flexibility to try new techniques rather than mandating techniques that may not be the most effective. The Black Thunder study has suggested set back distances; however, the permit requirements instituted by WDEQ/LQD do not rely on the suggested set back distances for mitigation. In the absence of a national short-term exposure limit, WDEQ/LQD has not calculated an appropriate set back distance.

13. Direct and Indirect Impact Analysis Vs. Cumulative Impacts BLM recognizes that the direct and indirect impacts predicted in the EIS may be altered by changes to some of the resources as a result of other activities. It is the intent of the EIS to first disclose the potential impacts of implementing the Proposed Action or Action Alternatives on other resources and then consider other actions that may result in overlapping or cumulative impacts to those resources. In the case of the SPRB Coal EIS, the action that BLM is considering approving is leasing the federal coal resource to existing mines in the Wyoming PRB. When BLM began analyzing the impacts of leasing federal coal under the regulations at 43 CFR 3425 (Leasing on Application) in the Wyoming PRB, a conscious decision was made to separate the discussion of predicted direct and indirect impacts to resources from the discussion of predicted cumulative impacts to resources in order to differentiate between the two analyses, and to ensure that we considered each in our leasing documents. Accordingly, the potential direct and indirect impacts of mining the coal, which is a logical outcome of leasing the coal to an existing mine, are described in Section 4.1 of the EIS, and the potential cumulative impacts are covered in Section 4.5 of the EIS. We agree that it could be beneficial to eliminate the duplication that results from discussing each resource separately in the Affected Environment, Direct and Indirect Impact, and Cumulative Impact sections. We will re-evaluate our approach and consider organizing future documents based on resources.

The cumulative air quality, surface water, and groundwater impact analyses prepared for the Wyoming and Montana Oil and Gas EISs were designed to consider the estimated timing of maximum overlapping impact from CBM development, which will peak during the time of maximum drilling activity with ongoing surface coal mining activities, which have been and are predicted to continue gradually increasing.

14. Groundwater Cumulative Impacts The federal action that is being analyzed in this EIS is leasing five tracts of federal coal, under the assumption that, if the coal is leased, it will be mined by existing coal mining operations. The intent of the direct and indirect impact analysis on pages 4-42 through 4-58 in the Draft EIS is to disclose the direct and indirect impacts of leasing and mining the federal coal. If that action is not approved, there may be impacts to groundwater as a result of other activities, which are addressed in the discussion on pages 4-118 through 4-129 of the Draft EIS, but they will not be a direct or indirect result of approval of the actions being considered in this EIS.

In the example you cite:

⚡ Figure 4-12 of the Draft EIS shows the estimated area of five feet of drawdown in the Canyon Coal Bed as a result of mining the West Antelope LBA Tract and the existing leases at the Antelope Mine, based on extrapolating the MODFLOW-predicted extent of water level drawdown performed for the approved Antelope Mine mining and reclamation permit.

⚡ Page 4-57 of the Draft EIS lists 78 non mine-related wells that are located within three miles of the West Antelope LBA Tract and states that six of these wells, listed in Table 4-10, are completed at depths indicating they produce water from the Anderson or Canyon Coal bed and lie within the 5 foot drawdown contour line shown in Figure 4-12. The EIS predicts that these wells could be directly impacted by mining the West Antelope LBA Tract. If the West Antelope LBA Tract is not leased and mined, these wells would not be directly or indirectly impacted by mining the West Antelope LBA Tract, although some or all of those wells could be impacted as a result of other anticipated development, specifically existing approved surface coal mining and/or coal bed methane development.

⚡ Pages 4-118 through 4-129 of the Draft EIS, including Figures 4-14 and 4-15, discuss the potential cumulative impacts to groundwater as a result of anticipated development in this area, including coal mining and coal bed methane development. Most of the anticipated development in this area would affect the coal aquifers, but not the underlying or

overlying aquifers. As a result, all of the wells listed on page 4-57 of the Draft EIS would not be impacted as a result of all anticipated development in this area because not all of these wells are completed in the coal aquifers. If the coal included in the West Antelope LBA Tract is leased and CBM development proceeds as proposed, the cumulative impact to the six wells listed in Table 4-10 would likely be an increase in the amount of drawdown, as discussed on page 4-129 of the Draft EIS. As discussed on pages 4-127 and 4-129 of the Draft EIS, the addition of CBM development would extend the area experiencing a loss in hydraulic head to the west of the mining area and the projected drawdown in the coal aquifer due to CBM production would exceed drawdown due to mining.

According to WDEQ/LQD, coal mines are required to replace water supply wells if the mine activities have impacted the well to the extent that the well no longer fulfills its intended purpose. When water wells have been impacted by both coal mining operations and coal bed methane development, WDEQ/LQD's approach is to try and determine the amount of impact caused by the mining operation. The mine's responsibility for replacement of the well depends on the amount of impact caused by the mine. There have been cases where both the mine and the CBM operator have shared in the cost of replacing a water supply well.

15. Cumulative Impacts, Reasonably Foreseeable Future Actions The purpose of an EIS is to disclose the potential impacts of a specific proposed federal action so that a decision maker can make an informed decision. That decision should consider the potential impacts of a proposed project when combined with other reasonably foreseeable development in an area. The SPRB Coal EIS cumulative impact analysis includes the projects that BLM has identified as reasonably foreseeable. The analysis assumes increases in coal production based on existing approved mining and reclamation permits, which describe and evaluate currently proposed production for the life of each mine, and proposed changes in those permits, which are described and considered in the EIS. Assumed levels of CBM production are based on the Wyoming and Montana Oil and Gas EISs, which is the best available estimate of the levels of CBM and conventional oil and gas development for the next 10 years. Other projects are included based on their likelihood of completion.

BLM does not agree that mining operations covering a continuous strip covering 1,000 square miles is a reasonably foreseeable future scenario for the following reasons:

¶# The coal deposits do not form one continuous thick mineable unit stretching from north of Gillette to south of Wright. The existing mines are located in three groups or pods. One group of mines is located north and northeast of Gillette, one group of mines is located between Gillette

and Wright, and the third group of mines is located east and south of Wright. The coal splits into thinner beds and the quality of the coal deteriorates in the areas between these groups of mines. That is why there are no existing mines in those areas and that is why the existing mines are not leasing in those areas, even though the overburden in those areas is thinner than the overburden in the tracts that have been applied for, which would make the coal much more economical to recover.

The mines were initially developed just west of the coal outcrop, where the coal is closest to the surface. The coal beds continue to the west, but the overburden thickness, or depth to the top of the mineable coal beds, increases to the west. The increasing overburden thickness makes the coal more difficult and more expensive to recover. This limits the size of the area from which coal can be economically recovered. The size of the economically recoverable coal reserve would increase if the price of PRB coal increases; however, competition from other coal-producing areas and from other energy sources, such as natural gas, would also increase as the price of the PRB coal increases. This would lead to a reduction of PRB coal's share in the energy supply market.

There are various regulatory initiatives that, if enacted, could have the effect of making PRB coal less competitive with other coal-producing areas and/or other energy sources. These potential regulatory initiatives range from national initiatives, such as EPA's December 14, 2000 determination that there is sufficient cause to require coal-fired utilities to control mercury emissions, to international initiatives, such as the Kyoto Protocol. Standards, such as the NAAQS, and the regulatory requirements that those standards be met, also serve to limit the potential for growth for surface disturbing activities such as surface coal mining. This can occur because, at some level of production, those standards technologically can no longer be met, or because the cost of meeting those standards becomes prohibitive.

BLM is currently starting work on a two-year technical study to assess current coal development, develop projections of expected future development, and develop data and modeled projections of the effects of projected surface coal mining in the Wyoming PRB on key resource and social values. Briefings on this study have been scheduled with state and federal agencies, including EPA and WDEQ.

16. Noxious Weed Control The vegetation section of the cumulative impact analysis (Section 4.5.8) has been expanded to describe measures that are being required outside of the coal mine permit areas to address noxious weeds. Plans for controlling noxious weeks are included in the mining and reclamation plan permit for each mine, as discussed in the Draft and Final EIS.

17. Wetlands Mitigation As discussed in the EIS, the U.S. Army Corps of Engineers (COE) reviews all surface coal mining and reclamation permits. COE requires mitigation of all impacted jurisdictional wetlands in accordance with Section 404 of the Clean Water Act. They approve the plans for wetland restoration and the number of acres to be restored. 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 type and function of the original wetland. The wetland mitigation plan approved by COE becomes part of the WDEQ mining permit.

18. Mitigation of Non-Jurisdictional Wetlands Restoration of non-jurisdictional wetlands is not regulated by COE under Section 404 of the Clean Water Act. Replacement of non-jurisdictional wetlands may be required by the surface management agency, if the surface estate is federally-owned, or by the surface owner, if the surface estate is not federally-owned. USDA-FS requires replacement of all wetlands on lands they administer, which would include portions of the NARO North, Little Thunder, and West Roundup LBA Tracts. BLM requires restoration of all impacts to wetlands on BLM-administered surface; however, there is no BLM-administered surface estate included in the NARO North, NARO South, Little Thunder, West Roundup, or West Antelope LBA Tracts. WDEQ/LQD requires the restoration of some non-jurisdictional wetlands, depending on the values, such as importance to wildlife, associated with the wetland. WDEQ requires restoration of playas if they have hydrologic significance. Additional discussion of non-jurisdictional wetlands mitigation has been included in the Final EIS.

The information regarding the costs of restoration of playas was initially inserted into the *Final Environmental Impact Statement for the North Jacobs Ranch Coal Lease Application* in response to a comment received from EPA suggesting the BLM discuss the method and cost of fully replacing wetland areas regardless of the Clean Water Act jurisdictional status of those areas. This discussion has been retained in subsequent EISs, including the SPRB Coal EIS.

Wildlife

19. Additional information has been added to the discussions of sage grouse and other species in the wildlife sections of the Final EIS (Sections 3.10.4, 4.1.10, and 4.5.9). Considered together, the discussions of sage grouse occurrences on the five LBA tracts in Section 4.1.10 of the Draft EIS identified the presence of one active sage grouse lek within the General Analysis Area, the Kort lek, located within the current approved North Antelope/Rochelle Complex Permit Area. The location of the Kort lek was identified incorrectly in the Draft EIS as being near the northwest corner of the current North Antelope/Rochelle Complex Permit Area. The lek is located near the eastern boundary of the

North Antelope/Rochelle Permit Area, on an existing (since 1966) federal coal lease. This information has been corrected in the Final EIS, which has also been updated to reflect more recent sage grouse surveys by the mines. Surveys conducted since the Draft EIS was prepared have identified a new sage grouse lek in the vicinity of North Antelope/Rochelle Complex's existing mining operations. Additional information on wildlife and other resources can also be found in the *Supplementary Information on the Affected Environment in the General Analysis Area for the South Powder River Basin Coal Lease Applications Draft Environmental Impact Statement*. Copies of this document were provided to the EPA when the Draft EIS was distributed as a source of more detailed information on the affected environment of the General Analysis Area.

Response to Comment Letter 12: James K Aronstein

The EIS discloses that there are currently existing private and federal oil and gas leases within the LBA tract (Section 3.11, Figures 3-15 through 3-18, Tables 3-10 through 3-13). It also identifies that CBM resources that are not recovered prior to mining would be irretrievably lost when the coal is leased, that mine-related dewatering has and is continuing to deplete hydrostatic pressures and methane resource adjacent to mining areas, that this effect will be enhanced as mining proceeds closer to the LBA tracts, regardless of whether they are leased or not, and that wells should be completed early in order to recover substantial portions of the remaining reserves (Section 4.1.2.1). If the West Roundup LBA Tract is leased, mining cannot occur until the existing mining and reclamation permit is amended to include the newly leased lands. Appendix D of the EIS lists the stipulations that are included on coal leases in the Powder River Basin, which include stipulations addressing multiple mineral development and oil and gas/coal resources.

In compiling the list of lessees with existing federal oil and gas leases that could be impacted by surface coal mining operations in the Wyoming Powder River Basin, the BLM included lessees in areas that are within applications to lease federal coal adjacent to existing mines. The letters that were sent to the lessees with oil and gas leases should have stated that portions of the referenced oil and gas leases are located in areas that would potentially be affected by coal mining operations in the next five to ten years. With respect to the oil and gas leases referenced in your comment letter (WYW 27703 and WYW042736C), it is likely that the CBM resource in these two leases will be impacted by existing approved mining operations at the North Rochelle Mine in the next five to ten years, regardless or whether the West Roundup LBA Tract is leased or not.