

APPENDIX A

WILDLIFE MONITORING AND PROTECTION PLAN

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INTRODUCTION

This Wildlife Monitoring and Protection Plan (WMPP) was prepared in conjunction with the *Statewide Oil and Gas Draft Environmental Impact Statement (DEIS) (BLM 2001 Montana DEIS) and Amendment of the Powder River and Billings Resource Management Plans (RMPs)*. The DEIS and Amendment addresses future exploration for and development of Bureau of Land Management (BLM) and state of Montana (state) managed coalbed methane gas (CBM) resources and conventional oil and gas resources. The planning area excludes those lands administered by the Forest Service, the Crow, Northern Cheyenne, and other Indian lands. The WMPP will be implemented on federal lands, including split estate, in cooperation with state agencies, federal agencies, tribal representatives, Operators, and landowners. If owners and managers of state and private mineral development are willing to incorporate this guidance into management of their CBM activities, they may become a partner by entering into a Cooperative Agreement.

A variety of planning issues related to wildlife were identified during preparation of the DEIS. The goal of the WMPP is to avoid or minimize impacts to wildlife and serve as a communication tool to foster cooperative relationships among the CBM and conventional Oil and Gas industry (i.e., Operators), resource management agencies, landowners and adjacent Tribal Governments. Because this plan addresses a large geographic area composed of diverse wildlife habitats and unique situations, it must be programmatic in nature. However, the need to provide management recommendations and guidance to conserve species and habitats remains. Regional or site specific monitoring and protection plans which follow the guidance provided in this programmatic document will be required as part of each CBM Project Plan. Implementation of this plan during the course of project development and operations should promote wildlife conservation and allow land managers and project personnel to maintain wildlife populations and productivity levels simultaneously with the development of natural oil and gas resources.

PLAN PURPOSE

Oil and gas leasing decisions and lease stipulations were previously analyzed in the Bureau of Land Management (BLM) 1992 *Final Oil and Gas RMP/EIS Amendment* (BLM 1992). Wildlife stipulations attached to leases offer protective measures: 1) for certain species, 2) during a particular time period, or 3) within a specific area. These stipulations may not address other concerns related to special status species or water/habitat related issues caused by direct and indirect impacts from CBM exploration and development. Because it is purely speculative to predict how all wildlife will react or how development will proceed, it is difficult to develop prescriptive mitigation standards across the entire planning area. Even though BLM has some adaptive management strategies in place (e.g., conditions of approval and compliance inspections), these mechanisms do not give us the information necessary to understand cause and effect relationships across a landscape. Therefore, the purpose of this Plan is to acquire baseline wildlife information, monitor populations, and assess stipulations for effectiveness. The WMPP will facilitate our ability to pinpoint problems (including the evaluation of other contributing factors), design Project Plans which include conservation for declining species, monitor the effectiveness of decisions, and make recommendations to adjust management to address specific situations.

AREA AND OBJECTIVES

The WMPP document is the framework for wildlife monitoring and protection across the Powder River and Billings Resource Management Plan areas (approximately 6.5 million acres) and provides a template for regional and/or project specific WMPP development. The BLM, Montana Fish Wildlife and Parks (MFWP), and United States Fish and Wildlife Service (FWS) will enter into a Cooperative Agreement to work cooperatively to implement portions of the WMPP over the planning area. Specific geographic areas will be delineated as Regional Monitoring Units (RMU). As energy development begins, RMU specific WMPPs, following the same template as this document, will be written in cooperation with other agencies, Operators, landowners and other interests. The objectives of the program are to:

- Establish a framework for cooperation among agencies, Operators, landowners, Tribal Governments and interest groups;
- Provide a process for data collection, data management and reporting ;
- Determine needs for inventory, monitoring and protection measures;
- Provide guidance and recommendations for the conservation of wildlife species;
- Establish protocols for biological clearances of Special Status Species;
- Meet the terms and conditions of the Biological Opinion;
- Determine if management practices to conserve wildlife species and habitat in lease stipulations and conservation measures contained in the BLM Record of Decision, CBM Project Plans or Oil and Gas APDs are meeting specified objectives;
- Develop recommendations to adjust management actions based on field observations and monitoring.

Implementation of the WMPP will begin with the issuance of the *Record of Decision* and will remain in effect for the life of the project (approximately 25 years). Guidance for the conservation of special status species will be incorporated into the “Project Plan of Development Preparation Guide.” Signatories on an Interagency Cooperative Agreement will serve as the “*Steering Committee*.” A “*Core Team*” (i.e., agency biologists) will oversee the implementation of the programmatic elements of the WMPP. As energy development is initiated in an identified RMU, Wildlife Monitoring Review Teams (i.e., RMU Team) consisting of resource specialists from the BLM, FWS, MFWP and applicable Operator funded biologists will write area-specific monitoring and protection plans. Resource specialists may serve as members on more than one RMU project area team. Individual RMU plans may be terminated at the end of any year when there is undeniable evidence illustrating that wildlife populations and productivity have been successfully maintained. The BLM Authorized Officer (AO) would base termination on recommendations from the *RMU Team*.

The programmatic template will undergo a major review for effectiveness every 5 years, or as determined by the *Core Team* and *RMU Team* members. A cooperative agreement among cooperators will be signed on an annual basis to include specific work components of the current year’s work.

IMPLEMENTATION PROTOCOL

This section provides preliminary wildlife inventory, monitoring, and protection protocol. Required actions for inventory, monitoring and protection vary by species and development intensity. In areas of development with > 4 well locations per section, additional actions in Table 3 become applicable. Standard protocol for Application for Permit to Drill (APD) and right-of-way (ROW) application field reviews are provided in Table 2. Alternative measures and protocols will be developed as determined by *Core Team* and *RMU Team* members in response to specific needs identified in annual reports. This document provides methods for a number of wildlife species/categories. Additional species/categories may be added based on needs identified in annual wildlife reports. The wildlife species/categories for which specific inventory, monitoring, and protection procedures will be applied were developed based on input provided by the public, other agencies, and the BLM during preparation of the DEIS.

Considerable efforts will be required by agency and operator personnel for plan implementation. Many of the annually proposed agency data collection activities are consistent with current agency activities. Additionally, agency cost-sharing approaches will be considered such that public demands and statutory directives are achieved.

ANNUAL REPORTS AND MEETINGS

State and federal agencies will enter into a master Cooperative Agreement to implement the programmatic elements of inventory, monitoring and protection actions associated with CBM development in the Powder River and Billings Resource Management Plan areas. A *Core Team* will oversee implementation across the planning area and summarize information from work achieved in various RMUs. Additional cooperative agreements with cooperators will be established as activity is initiated in a RMU.

During project development (i.e., 25 years), Operators will provide an updated inventory and description of all existing project features (i.e., location, size, and associated level of human activity at each feature), as well as those tentatively proposed for development during the next 12 months. Operators should submit the inventory to BLM no later than October 15 of each calendar year. These data will be coupled with annual wildlife inventory, monitoring, and protection data obtained for the previous year and included in annual reports. Annual reports will be prepared by the BLM. Annual wildlife inventory, monitoring, and protection data gathered by parties other than the BLM, (e.g., Operators, MFWP) should provide the data to the BLM by October 15 of each calendar year. Upon receipt of these data, annual reports will be completed in draft form by the BLM and submitted to the Operators, USFWS, MFWP, and other interested parties no later than November 15 of each year. A 1-day meeting of the *RMU Teams* and *Core Team* will be organized by the BLM and held in early December of each year to discuss and modify, as necessary, proposed wildlife inventory, monitoring, and protection protocol for the subsequent year. Additional meetings specific to a RMU will be scheduled as necessary.

Discussions regarding annual Operator-specific financing and personnel requirements will be made at these meetings. A formula for determining these requirements will be developed at the first year's meeting (i.e., size of development, anticipated impacts, amount of public land, etc.). A protocol regarding how to accommodate previously unidentified development sites will also be determined during the annual meeting. Final decisions will be made by the BLM based on the input of all affected parties.

A final annual report will be issued by BLM to all potentially affected individuals and groups by early February of each year. Annual reports will summarize annual wildlife inventory and monitoring results, note any trends across years, identify and assess protection measures implemented during past years, specify monitoring and protection measures proposed for the upcoming year, and recommend modifications to the existing WMPP based on the effectiveness and/or ineffectiveness of past years (i.e., identification of additional species/categories to be monitored). Where possible, data presented in reports will be used to identify potential correlations between development and wildlife productivity and/or abundance. The BLM will be the custodian of the data and stored in BLM's Geographic Information System (GIS) for retrieval, and planning. Annual GIS data updates will be conducted. Raw data collected each year will be provided to other management agencies (e.g., USFWS, MFWP) at the request of these agencies. In addition, sources of potential disturbance to wildlife will be identified, where practical (e.g., development activities, weather conditions, etc.).

Additional reports may be prepared in any year, as necessary, to comply with other relevant wildlife laws, rules, and regulations (e.g., black-footed ferret survey reports, mountain plover and bald eagle habitat loss reports).

ANNUAL INVENTORY AND MONITORING

This document outlines the inventory and monitoring protocol for a number of selected wildlife species/categories. Protocol will be unchanged except as authorized by the BLM or specified in this plan. Additional wildlife species/categories and associated surveys may be added or wildlife species/categories and surveys may be omitted in future years, depending on the results presented in the coordinated review of annual wildlife reports. The MFWP will be contacted during the coordination of survey and other data acquisition phases. Opportunistic wildlife observations may be made throughout the year by agency and Operator personnel.

The frequency of inventory and monitoring will be dependent upon the level of development. In general, inventory and monitoring frequency will increase with increased levels of development. The level of effort should also be determined by species presence and development projection. Inventory and monitoring results may lead to further currently unidentifiable studies (i.e., cause and effect). The following sections identify the level of effort required by the WMPP. Site and species-specific surveys will continue to be conducted in association with APD and ROW application or CBM project field reviews.

Raptors (Including Bald Eagle and Burrowing Owl)

Raptor inventories will be conducted over the entire CBM project area every 5 years by BLM and MFWP. In potentially affected areas, baseline inventory should be conducted prior to the commencement of development to determine the

location of raptor nests/territories and their activity status by the BLM, with Operator financial assistance. These inventories should be repeated every 5 years (in areas with < 4 well locations/section) thereafter for the Life-of-the-Project (LOP) to monitor trends in habitat use. These surveys may be implemented aerially (e.g., via helicopter) or from the ground. Operators may provide financial assistance for some work. Data collected during the surveys will be recorded on BLM approved data sheets and entered into the BLM GIS database.

Nest productivity monitoring will be conducted by the BLM or a BLM approved biologist. Active nests located within 1 mile of project-related disturbance areas will be monitored between March 1 and mid-July to determine nesting success (i.e., number of nestlings/fledglings per nest). These surveys generally will be conducted from the ground. However, some nests may be difficult to observe from the ground due to steep and rugged topography and may require aerial surveys. Operators may provide financial assistance for aircraft rental as necessary. Attempts will be made to determine the cause of any documented nest failure (e.g., abandonment, predation).

Additional raptor nest activity and productivity monitoring measures will be applied in areas with high levels of development (i.e., areas with > 4 well locations/section) on and within 1 mile of the project area. Inventory/monitoring efforts in these areas, as well as selected undeveloped reference areas will be conducted annually during April and May, followed by nest productivity monitoring. Site and species-specific nest inventories will also continue to be conducted as necessary in association with all APD and ROW application field reviews.

All raptor nest/productivity surveys will be conducted using procedures that minimize potential adverse effects to nesting raptors. Specific survey protocol for reducing detrimental effects are listed in Grier and Fyfe (1987) and Call (1978) and include the following:

- Nest visits will be delayed for as long as possible during the nesting season.
- Nests will be approached cautiously, and their status (i.e., number of nestling/fledglings) will be determined from a distance with binoculars or a spotting scope.
- Nests will be approached tangentially and in an obvious manner to avoid startling adults.
- Nests will not be visited during adverse weather conditions (e.g., extreme cold, precipitation events, windy periods, or during the hottest part of the day).
- Visits will be kept as brief as possible.
- All inventories will be coordinated by the BLM.
- The number of nest visits in any year will be kept to a minimum.

Ferruginous Hawk: Timing of surveys is very important in documenting the territory, occupancy, success and productivity of ferruginous hawk populations. The accepted survey and monitoring guidelines for ferruginous hawk are taken from the *Survey and Monitoring Guidelines for Ferruginous Hawks in Montana, 1995*.

Bald Eagle: Inventory and monitoring protocol for the bald eagle will be as described for raptors, with the following additions. Operators will indicate the presence of eagle habitat as previously defined, on their application. Prior to CBM development or construction, surveys of the wooded riparian corridors within 1.0 mile of a project area will be conducted in the winter and/or spring by biologists and/or BLM-approved biologists to determine the occurrence of winter bald eagle roosts. Surveys will be conducted from daybreak to 2 hours after sunrise and/or from 2 hours before sunset to 1 hour after sunset by fixed-wing aircraft. Follow-up ground surveys, if necessary, will be conducted during the same time frame. Surveys will be at least 7 days apart. The location, activity, number, and age class (immature, mature) of any bald eagles observed will be recorded. If a roost or suspected roost is identified, BLM, USFWS, and MFWP will be notified and a GPS record of the roost/suspected roost will be obtained and entered into the BLM GIS database. There will be No Surface Occupancy within 0.5 miles of any identified bald eagle roost sites.

Nest productivity will be conducted by the BLM or a BLM-approved biologist in areas with high levels of development (i.e., areas with greater than or equal to 4 well locations/section) on and within 1 mile of the project area. Active nests located within one mile of project-related disturbance areas will be monitored between March 1 and mid-July to determine nesting success (i.e., number of nestlings/fledglings per nest).

Burrowing owl: Operators should indicate the presence of prairie dog towns on their application. The presence of sensitive habitat does not indicate that a species may be present. It does, however, alert the company and BLM that a field review and surveys may be required to process the permit or initiate action. In association with APD and ROW application field reviews, prairie dog colonies within 0.5 miles of a proposed project area will be surveyed for western burrowing owls by BLM biologists or a BLM-approved Operator-financed biologist twice yearly from June through August to determine the presence/absence of nesting owls. Efforts will be made to determine reproductive success (no. of fledglings/nest).

Threatened, Endangered, Candidate, and Other Species of Concern

Operators should indicate the presence of cottonwood riparian, herbaceous riparian or wet meadows, permanent water or wetlands, prairie dog towns, or rock outcrops, ridges or knolls on their application. The presence of sensitive habitat may not indicate that a species may be present. It does, however, alert the company and BLM that a field review and surveys may be required to process the permit or initiate action. The level of effort associated with the inventory and monitoring required for threatened, endangered, candidate, and other species of concern (TEC&SC) will be commensurate with established protocol for the potentially affected species. Methodologies and results of these surveys will be included in annual reports or provided in separate supplemental reports. As TEC&SC species are added to or withdrawn from USFWS and/or BLM lists, appropriate modifications will be incorporated to this plan and specified in annual reports.

TEC&SC data collected during the surveys will be provided only as necessary to those requiring the data for specific management and/or project development needs. Site- and species-specific TEC&SC surveys will continue to be conducted as necessary in association with all APD and ROW application field reviews. Data will be collected on BLM approved data sheets and entered into the BLM GIS database.

Black-footed Ferret

Operators should indicate the presence of prairie dog towns on their application. The presence of sensitive habitat does not indicate that suitable black footed ferret habitat may be present. It does, however, alert the company and BLM that a field review and surveys may be required to process the permit or initiate action. BLM biologists and/or BLM-approved Operator-financed biologists will determine the presence/absence of prairie dog colonies within 0.5 miles of proposed activity during APD and ROW application field reviews. Prairie dog colonies on the area will be mapped to determine overall size following the approved methodology. Colony acreage will be determined using GIS applications. Colonies that meet USFWS size criteria as potential black-footed ferret habitat (USFWS 1989) will be surveyed to determine active burrow density using the methods described by Biggins et al. (1993) or other BLM- and USFWS-approved methodology.

Project activity will be located to avoid impacts to prairie dog colonies that meet USFWS criteria as black-footed ferret habitat (USFWS 1989). If avoidance is not possible, all colonies meeting the USFWS size criteria and any colonies for which density estimates are not obtained will be surveyed for black-footed ferrets by an operator-financed, USFWS-certified surveyor prior to but not more than 1 year in advance of disturbance to these colonies. Black-footed ferret surveys will be conducted in accordance with USFWS guidelines (USFWS 1989) and will be conducted on a site-specific basis, depending on the areas proposed for disturbance in a given year as specified in the annual report. If a black-footed ferret or its sign is found during a survey, all development activity would be subject to recommendations from the *Montana Black-footed Ferret Survey Guidelines, Draft Managing Oil and Gas Activities in Prairie Dog Ecosystems with Potential for Black-footed ferret Reintroduction* and re-initiation of Section 7 Consultation with USFWS.

Black-tailed Prairie Dog

The BLM will determine the acreage of occupied black-tailed prairie dog habitat within suitable mountain plover habitat on federally managed surface acres and federal mineral estate lands. Further, a reasonable effort should be made to estimate actual impacts, including habitat loss, CBM development will have on occupied black-tailed prairie dog acres within suitable mountain plover habitat over the entire project area.

Active prairie dog towns on BLM lands within 0.5 miles of a specific project area will be identified, mapped, and surveyed as described in the Black-footed ferret section. In addition, reference prairie dog colonies subject to development will be identified. On an annual basis, the BLM and/or a BLM-approved Operator-financed biologist will survey, at least a portion of, the prairie dog colonies, including the reference colonies. Prairie dog populations are subject to drastic population fluctuations primarily due to disease (plague). Therefore, efforts will be made to compare the data from the reference colonies with that obtained from the project areas, in order to monitor the response of prairie dog populations to CBM development.

Mountain Plover

Surface use is prohibited within 1/4 mile of active mountain plover nest sites. Disturbance to prairie dog towns will be avoided where possible. Any active prairie dog town occupied by mountain plover will have No Surface Use between April 1 and July 31 which may be reduced to No Surface Use within 1/4 mile of an active nest, once nesting has been confirmed. An exception may be granted by the authorized officer after the BLM consults with the FWS on a case-by-case basis and the operator agrees to adhere to the new operational constraints.

On federally managed surface acres, active black-tailed prairie colonies within suitable mountain plover habitat will have a No Surface Occupancy.

Prior to permit approval, habitat suitability will be determined. The BLM, FWS and MFWP will estimate potential mountain plover habitat across the CBM area using a predictive habitat model. Over the next 5 years, information will be refined by field validation using most current Service mountain plover survey guidelines (USFWS 2002c) to determine the presence/absence of potentially suitable mountain plover habitat. In areas of suitable mountain plover habitat, surveys will be conducted prior to ground disturbance activities by the BLM or a BLM-approved Operator biologist using the Service protocol at a specific project area plus a 0.5 mile buffer. Efforts will be made to identify mountain plover nesting areas that are not subject to CBM development to be used as reference sites. Comparisons will be made of the trends in mountain plover nesting occupancy between these reference areas and areas experiencing CBM development.

The BLM shall monitor all loss of mountain plover habitat associated with all portions of this action (operators will indicate the presence of prairie dog towns or other mountain plover habitat indicators on their application). Suitable mountain plover habitat has been defined under 'critical habitat' for the mountain plover in the Biological Opinion. The actual measurement of disturbed habitat can be the responsibility of the BLM, their agent (consultant, contractor, etc) with a written summary provided to the Service's Montana Field Office upon project completion, or immediately if the anticipated impact area is exceeded.

Gray Wolf

According to the *Biological Assessment for Coalbed Methane Production in Montana*, state lands and counties (Gallatin and Park Counties) bordering Yellowstone National Park would be surveyed in the spring for wolves, occupied dens, or scat prior to development. These surveys could be conducted from the air or from the ground. Areas in which wolves are observed would continue to be surveyed annually until reintroduction objectives are met. Efforts will be made to compare production and/or occupancy trends in wolf populations in these areas to a reference population in order to gain more reliable information regarding the response of wolves to CBM development.

Sage Grouse

BLM and MFWP will conduct sage grouse lek inventories over the entire CBM project area every 5 years to determine lek locations. Surveys of different areas may occur during different years with the intent that the entire CBM project area will be covered at least once every 5 years. Existing MFWP

Region 7 trend blocks will be monitored annually. There are 4 trend blocks in FWP Region 7; one located in the Decker area and 3 others across the Region. Inventories and protocol will be consistent with the *Montana Sage Grouse Conservation Plan* coordinated by the BLM and MFWP. In areas with ≥ 4 well locations per section, aerial inventories will be conducted annually on affected sections, 2 mile buffers, and selected undeveloped reference areas. Surveys may be conducted aerially or on the ground, as deemed appropriate by the BLM and MFWP. Operator may provide financial assistance.

Aerial surveys will be used for determining lek locations. BLM, MFWP or BLM-approved Operator-financed biologist will monitor sage grouse lek attendance within 2 miles of areas having < 4 locations per section such that all leks on these areas are surveyed at least once every 3 years. Data collected during these surveys will be recorded on BLM and MFWP approved data sheets and entered into the BLM GIS database. An effort should also be made to compare trends of the number of males/lek to reference leks

Sage grouse winter use surveys of suitable winter habitat within 2 miles of a project area will be coordinated by the BLM and implemented by the BLM and/or MFWP during November through February as deemed appropriate by these management agencies, and results will be provided in interim and/or annual reports. These surveys will be conducted to identify sage grouse wintering concentration areas. Historical information of winter sage grouse locations will be useful in focusing efforts in areas suspected of providing winter habitat. Sage grouse winter habitat use surveys will be conducted subsequent to snowfall events to identify crucial winter habitat.

Big Game

Elk, mule deer, white-tailed deer, and pronghorn are the common big game species that occur within parts or all of the CBM planning area. BLM and MFWP will continue to collect annual big game seasonal habitat use data and make it available to Operators and landowners. Big game use of seasonal habitats is highly dependent upon a combination of environmental factors including forage quality and snow depth. Therefore, it is very difficult to attribute changes in habitat use to a single factor. Comparisons in trends between big game seasonal habitat reference areas and seasonal habitats associated with CBM development may provide some insight into the response of big game to CBM development.

General Wildlife

Any avian mortality observed in pits will be documented, reported to the BLM and USFWS, and measures will be taken to prevent future mortality at the pit(s). Well field access roads and other roads with project-related traffic increases will be monitored for wildlife mortality so that specific mitigation can be designed and implemented as deemed necessary by BLM, in consultation with MFWP, for areas with high traffic volume and/or increased wildlife/vehicle collisions and mortality.

Aquatic Species

Baseline aquatic inventories will be conducted in potentially affected areas by BLM and MFWP with Operator financial assistance, for 1-2 years prior to development commencing, to determine occurrence, abundance, and population diversity of the aquatic community. These inventories should be repeated every year in selected intermittent/perennial streams associated with produced water discharge as well as selected intermittent/perennial streams associated with no produced water discharge (control sample site) .

Natural fluctuations in species occurrence, abundance, and population diversity will be determined by comparing changes in control sample sites to baseline inventories. Changes in occurrence, abundance, and population diversity of the aquatic community in streams associated with produced water discharge may then be possible by comparing to the natural fluctuations.

Detection of a retraction in the range of a species, a downward trend in abundance, or reduced population diversity in systems with produced water discharge shall warrant a review of Project Plans and possible recommendations for adjustment of management to address the specific problems.

Aquatic groups to be inventoried and monitored will include:

- Benthic macroinvertebrates** - Determine population diversity using Hess/kick net sampling protocol to measure species abundance and establish a diversity index.
- Amphibians and aquatic reptiles** - Determine population diversity and abundance utilizing sampling methodologies being developed for prairie species.
- Non-game fish** - Determine population diversity using electrofishing and seining.
- Algae (periphyton)** – Determine population diversity.

PROTECTION MEASURES

Wildlife protection measures have been put in place through lease stipulations or terms and conditions from a Biological Opinion from FWS. The following sections describe stipulations or mitigation that restrict activities through lease agreements or terms and conditions to reduce the likelihood of “take” of a federally listed species.

Lease stipulation

The lease stipulations were approved in the 1994 BLM Oil and Gas EIS. These are mandatory measures or actions that have been developed as a result of wildlife research and input from agencies and Operators. Avoidance of important breeding, nesting, and seasonal habitats is the primary protection measure that will reduce the possibility of CBM and Oil and Gas development having an impact on wildlife populations, productivity, or habitat use. Additional conservation measures will be incorporated through the Project Plan design or as Conditions of Approval. Data collected during monitoring efforts and properly analyzed will be used to determine the appropriateness and the effectiveness of these measures throughout the CBM project area. Based on the results of the monitoring data, these measures will be reviewed by the *Core Team* and *RMU Teams*. As monitoring data are collected over time, it is likely that some protection measures will be added, while others will be modified or removed completely with approval from the BLM in cooperation with other agencies and the *Core Team*. All changes in these protection measures will be reported, with a justification for the change, in annual reports. A RMP amendment may be required depending on the recommended change.

“Waivers” A lease stipulation may be waived by the Authorized Officer (AO) if a determination is made by the BLM, in consultation with FWS, that the proposed action will not adversely affect the species in question.

“Exceptions” to protection measure may be granted by the AO, in coordination with USFWS for T&E species and MFWP, if the Operator submits a plan that demonstrates that impacts from the proposed action will not be significant, or can be adequately mitigated.

“Modifications” may be made by the AO if it is determined that portions of the area do not include habitat protected by the stipulation.

Raptors

From March 1 – August 1, all surface disturbing activities are prohibited within ½ mile of active raptor nest sites except ferruginous hawk, bald eagle and peregrine falcon nest sites. For ferruginous hawks and bald eagles, no surface occupancy or use will be allowed within ½ mile of known active nest sites. No surface occupancy or use is allowed within 1 mile of identified peregrine falcon nests. Active raptor nests are defined as those that have been used within the last two years.

Big Game

Surface use is prohibited to avoid disturbance of white-tailed deer, mule deer, elk, pronghorn antelope, moose, and bighorn sheep during the winter use season, December 1 - March 31. This stipulation does not apply to the operation and maintenance of production facilities.

Elk Parturition Range

In order to protect elk parturition range, surface use is prohibited from April 1 to June 15 within established spring calving range. This protection measure does not apply to the operation and maintenance of production facilities.

Bighorn Sheep – Powder River Breaks

No surface occupancy or use is allowed in the designated Powder River Bighorn Sheep Range. In crucial winter range outside of the designated area, surface use is prohibited from December 1 to March 31.

Sage Grouse

Lek sites

In order to minimize impacts to sharptail and sage grouse leks, surface occupancy within ¼ mile of known leks is prohibited. The measure may be waived if the AO, in coordination with MFWP, determines that the entire leasehold can be occupied without adversely affecting grouse lek sites, or if all lek sites within ¼ mile of the leasehold have not been attended for 5 consecutive years.

Nesting area

Surface use is prohibited between March 1 – June 15 in grouse nesting habitat within 2 miles of a known lek. This measure does not apply to the operation and maintenance of production facilities. This measure will be implemented to protect sharptail and sage grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to minimize disturbance to nesting activities adjacent to nesting sites for the long-term maintenance of grouse populations in the area.

Winter range

Surface use is prohibited from December 1 through March 31 within designated crucial winter range to protect sage grouse from disturbance during winter season use.

Prairie Dog Towns and Associated Black-footed Ferret Habitat

Prior to surface-disturbing activities, prairie dog colonies and complexes 80 acres or more in size and containing 5 burrows per acre will be examined to determine the presence or absence of black-footed ferrets. The findings of this examination may result in some restrictions to the operator's plans or may even preclude use and occupancy.

The lessee or operator may, at their own option, conduct an examination on the leased lands to determine if black-footed ferrets are present, or if the proposed activity would have an adverse effect, or if the area can be cleared. This examination must be done by, or under the supervision of, a qualified resource specialist approved by the BLM. An acceptable report must be provided to documenting the presence or absence of black-footed ferrets and identifying the

anticipated effects of the proposed action on the black-footed ferret and its habitat. This stipulation does not apply to the operation and maintenance of production facilities.

Interior Least Tern

The interior least tern is listed as an endangered species under the ESA. Birds occupy sandbars and beaches in eastern Montana and along the Yellowstone and Missouri Rivers. Surface occupancy and will be prohibited within 1/4 mile of wetlands identified as interior least tern habitat.

Terms and Conditions from Section 7 Consultation

In order to be exempt from the prohibitions of section 9 of the Act, the Bureau must comply with the following terms and conditions, which implement the reasonable and prudent measures described and outlined in the Biological Opinion. **These terms and conditions are nondiscretionary.**

All Species

In the event that a bald eagle (dead or injured) or mountain plover (dead or injured) is located during construction and operation, the Service's Billings Sub-Office of the Montana Field Office (406-247-7366) and the Service's Law Enforcement Office (406-247-7355) will be notified within 24 hours. The action agency must provide for monitoring the actual number of individuals taken. Because of difficulty in identification, all small birds found dead should be stored in a freezer for the Service to identify.

- The Bureau shall monitor all loss of bald eagle (nesting, potential nesting and roost sites) and suitable mountain plover habitat associated with all actions covered under the *Montana Statewide Draft Oil and Gas EIS and Amendment of the Powder River and Billings RMPs* and ROD. Bald eagle nesting, potential nesting and roost sites, and suitable mountain plover habitat have been defined under 'habitat use' and 'critical habitat' respectively, for each species in the Biological Opinion. The actual measurement of disturbed habitat can be the responsibility of the BLM their agent (consultant, contractor, etc) with a written summary provided to the Service's Montana Field Office upon project completion. The tracking will include the location and acres of habitat loss, field survey reports, what stipulations were applied, and a record of any variance granted to timing and/or spatial buffers. The monitoring of habitat loss for these species will commence from the date the Record of Decision (ROD) is signed. The actual measurement of disturbed habitat can be the responsibility of the Bureau's agent (consultant, contractor, etc.) with a written summary provided to the Service's Montana Field Office semi-annually, or immediately if the Bureau determines that action (*i. e.* Application for Permit to Drill (APD), pipeline, compressor station) will adversely affect a listed species. However, it is the responsibility of the Bureau to ensure that the semi-annual reports are complete and filed with the Service in a timely manner. The semi-annual report will include field survey reports for endangered, threatened, proposed and candidate species for all actions covered under the *Montana Statewide Draft Oil and Gas EIS and Amendment of the Powder River and Billings RMPs* and ROD. The semi-annual reports will include all actions completed under this BO up to 30 days prior to the reporting date. The first report will be due 6 months from the signing of the ROD and on the anniversary date of the signing of the ROD. Reporting will continue for the life of the project.
- As outlined in the guidance and conservation measures in the *CBM Programmatic Wildlife Monitoring and Protection Plan for the Statewide Oil and Gas Environmental Impact Statement and Amendment of the Powder River and Billings Resource Management Plans* that "All new roads required for the proposed project will be appropriately constructed, improved, maintained, and signed to minimize potential wildlife/vehicle collisions... Appropriate speed limits will be adhered to on all project area roads, and Operators will advise employees and contractors regarding these speed limits."

Bald Eagle

- The Bureau shall require implementation of all conservation measures/mitigation measures identified in the Biological Assessment prepared for the project and dated April 10, 2002, and wildlife inventory, monitoring, and protection protocol provided by the WMPP. The Bureau shall monitor for compliance with the measures and protocol. These are as follows:
- The appropriate standard seasonal or year-long stipulations for raptors or no surface occupancy for bald eagles as identified in the Billings Resource Management Plan (U.S. Bureau of Land Management 1983), Powder River Resource Management Plan (BLM 1984), and Oil and Gas Resource Management Plan/ EIS Amendment (BLM 1992) will be applied. This includes No Surface Occupancy within ½ mile of nests active in the last 7 years and ½ mile of roost sites.
- Inventory and monitoring protocol for the bald eagle will be as described for raptors, with the following additions. Operators will indicate the presence of eagle habitat as previously defined, on their application. Prior to CBM development or construction, surveys of the wooded riparian corridors within 1.0 mile of a project area will be conducted in the winter and/or spring by biologists and/or BLM-approved biologists to determine the occurrence of winter bald eagle roosts. Surveys will be conducted from daybreak to 2 hours after sunrise and/or from 2 hours before sunset to 1 hour after sunset by fixed-wing aircraft. Follow-up ground surveys, if necessary, will be conducted during the same time frame. Surveys will be at least 7 days apart. The location, activity, number, and age class (immature, mature) of any bald eagles observed will be recorded and if a roost or suspected roost is identified, BLM, USFWS, and MFWP will be notified and a GPS record of the roost/suspected roost will be obtained and entered into the BLM GIS database. There will be No Surface Occupancy within 0.5 miles of any identified bald eagle roost sites.
- Nest productivity will be conducted by the BLM or a BLM approved biologist in areas with high levels of development (i.e., areas with greater than or equal to 4 well locations/section) on and within 1 mile of the project area. Active nests located within one mile of project-related disturbance areas will be monitored between March 1 and mid-July to determine nesting success (i.e., number of nestlings/fledglings per nest).
- No new above-ground power line should be constructed within the Primary Use Area or ½ mile from an active eagle nest or nest that has been occupied within the recent past. No surface occupancy or use is allowed within 0.5 miles of known bald eagle nest sites which have been active within the past 7 years. All other actions will be consistent with the *Montana Bald Eagle Management Plan - July 1994*.
- Power lines will be built to standards identified by the Avian Power Line Interaction Committee (1996) to minimize electrocution potential. The Service has more specific recommendations that reaffirm and compliment those presented in *Suggested Practices*. It should be noted that these measures vary in their effectiveness to minimize mortality, and may be modified as they are tested in the field and laboratory. Local habitat conditions should be considered in their use. The Service does not endorse any specific product that can be used to prevent and/or minimize mortality, however, we are providing a list of *Major Manufacturers of Products to Reduce Animal Interactions on Electrical Utility Facilities*.

New Distribution Lines and Facilities

The following represents areas where the raptor protection measures will be applied when designing new distribution line construction:

- 1.1 Bury distribution lines where feasible.
- 1.2 Raptor-safe structures (e.g., with increased conductor-conductor spacing) are to be used that address adequate spacing for each problematic species (i.e., minimum 60" for bald eagles would cover all species).

- 1.3 Equipment installations (overhead service transformers, capacitors, reclosers, etc.) are to be made raptor safe (e.g., by insulating the bushing conductor terminations and by using covered jumper conductors).
- 1.4 Jumper conductor installations (e.g., corner, tap structures, etc) are to be made raptor safe by using covered jumpers or providing adequate separation.
- 1.5 Employ covers for arrestors and cutouts.
- 1.6 Lines should avoid high avian use areas such as wetlands, prairie dog towns, and grouse leks. If not avoidable, use anti-perching devices to discourage perching in sensitive habitats such as grouse leks, prairie dog towns and wetlands to decrease predation and decrease loss of avian predators to electrocution.

Modification of Existing Facilities

Raptor protection measures to be applied when retrofitting existing distribution lines. Problem structures may include dead ends, tap or junction poles, transformers, reclosers and capacitor banks or other structures with less than 60" between conductors or a conductor and ground. The following modifications will be made:

- 2.1 Cover exposed jumpers.
- 2.3 Gap any pole top ground wires.
- 2.4 Isolate grounded guy wires by installing insulating link.
- 2.5 On transformers, install insulated bushing covers, covered jumpers, cutout covers and arrestor covers.
- 2.6 When mortalities occur on existing lines and structures, raptor protection measures are to be applied (e.g., modify for raptor-safe construction, install perches, perching deterrents, nesting platforms, nest deterrent devices, etc).
- 2.7 Use anti-perching devices to discourage perching in sensitive habitats such as grouse leks, prairie dog towns and wetlands to decrease predation, and decrease loss of avian predators to electrocution.
- 2.8 In areas where midspan collisions are a problem, install line-marking devices that have been proven effective. All transmission lines that span streams and rivers, should maintain proper spacing and have markers installed.

These additional standards to minimize migratory bird mortalities associated with utility transmission lines, will be incorporated into the Terms and Conditions for all APD's and stipulations for Right-Of-Way applications.

Mountain Plover

- The Bureau shall require implementation of the conservation measures for mountain plover as identified in the Biological Assessment prepared for the project and dated April 10, 2002, and wildlife inventory, monitoring, and protection protocol provided by the *WMPP*. The Bureau shall monitor for compliance with the measures and protocol. These are as follows:
- Surface use is prohibited within 1/4 mile of active mountain plover nest sites. Disturbance to prairie dog towns will be avoided where possible. Any active prairie dog town occupied by mountain plover will have No Surface Use between April 1 and July 31. This area may be reduced to No Surface Use within 1/4 mile of an active nest, once nesting has been confirmed. An exception may be granted by the authorized officer after the

BLM consults with the FWS on a case by case basis and the operator agrees to adhere to the new operational constraints.

- Due to the declining status of mountain plover in the analysis area and the need to retain this most important and limited nesting habitat, all active prairie dog colonies within suitable mountain plover habitat will have No Surface Occupancy (NSO). This NSO will be applied only to federally managed surface acres. This NSO may be modified in an amendment to this biological opinion after analysis of impacts to this preferred nesting habitat is completed.
- The BLM will determine the acreage of occupied black-tailed prairie dog habitat within the suitable mountain plover habitat of federally managed surface acres and on federal mineral estate lands. Further, a reasonable effort should be made to estimate the actual impacts, including habitat loss, CBM development will have on occupied black-tailed prairie dog acres within suitable mountain plover habitat over the entire project area. The project area is large and certain areas will likely be developed for coal bed methane before others. The BLM, Service, and cooperators will develop a survey protocol that may include prioritization of subsets of the project area to be analyzed. Based on the results of such analysis, the NSO on active prairie dog within suitable mountain plover habitat may be modified in an amendment to the biological opinion.
- Prior to permit approval, habitat suitability will be determined. The BLM, FWS and MFWP will estimate potential mountain plover habitat across the CBM area using a predictive habitat model. Over the next 5 years, information will be refined by field validation using most current Service mountain plover survey guidelines (USFWS 2002c) to determine the presence/absence of potentially suitable mountain plover habitat. In areas of suitable mountain plover habitat, surveys will be conducted prior to ground disturbance activities by the BLM or a BLM-approved Operator biologist using the Service protocol at a specific project area plus a 0.5 mile buffer. Efforts will be made to identify mountain plover nesting areas that are not subject to CBM development to be used as reference sites. Comparisons will be made of the trends in mountain plover nesting occupancy between these reference areas and areas experiencing CBM development.
- The BLM shall monitor all loss of mountain plover habitat associated with all portions of this action (operators will indicate the presence of prairie dog towns or other mountain plover habitat indicators on their application). Suitable mountain plover habitat has been defined under 'critical habitat' for the mountain plover in the Biological Opinion. The actual measurement of disturbed habitat can be the responsibility of the BLM, their agent (consultant, contractor, etc) with a written summary provided to the Service's Montana Field Office upon project completion, or immediately if the anticipated impact area is exceeded.
- If suitable mountain plover habitat is present, surveys for nesting mountain plovers will be conducted prior to ground disturbance activities, if ground disturbing activities are anticipated to occur between April 10 and July 10. Disturbance occurring outside this period is permitted, but any loss of mountain plover suitable habitat must be documented. Sites must be surveyed 3 times between the April 10 and July 10 period, with each survey separated by at least 14 days. The earlier date will facilitate detection of early-breeding plovers. A disturbance-free buffer zone of 1/4 mile will be established around all mountain plover nesting locations between April 1 and July 31. If an active nest is found in the survey area, the planned activity should be delayed 37 days, or seven days post-hatching. If a brood of flightless chicks is observed, activities should be delayed at least seven days (USFWS 2002). Exceptions and/or waiver to stipulations can be made through consultation with FWS on a case by case basis.
- Roads will be located outside of nesting plover habitat wherever possible. Apply mitigation measures to reduce mountain plover mortality caused by increased vehicle traffic. Construct speed bumps, use signing or post speed limits as necessary to reduce vehicle speeds near mountain plover.
- Creation of hunting perches will be minimized within 1/2 mile of occupied nesting areas. Utilize perch inhibitors (perch guards) to deter predator use.
- Native seed mixes will be used to re-establish short grass prairie vegetation during reclamation.

- There will be No Surface Occupancy of ancillary facilities (e.g., compressor stations, processing plants) within ½ mile of known nesting areas. Variance may be granted after consultation with the Service.
- In habitat known to be occupied by mountain plover, no dogs will be permitted at work sites to reduce the potential for harassment of plovers.
- Operators and the Bureau shall be provided by the Service with educational material illustrating and describing the mountain plover, its habitat needs, life history, threats, and gas development activities that may lead to incidental take of eggs, chicks, or adults with requirements that these material be posted in common areas and circulated in a memorandum among all employees and service providers.

Programmatic Guidance for the Development of Project Plans

Guidance for developing Project Plans and/or conservation measures applied as Conditions of Approval provide a full range of practicable means to avoid or minimize harm to wildlife species or their habitats. Operators will minimize impacts to wildlife by incorporating applicable WMPP programmatic guidance into Project Plans. Not all measures may apply to each site-specific development area and means to reduce harm are not limited to those identified in the WMPP. This guidance may change over time if new Conservation Strategies become available for Special Status Species or monitoring indicates the measure is not effective or unnecessary.

BLM and MFWP will work together through a Cooperative Agreement to collect baseline information about wildlife and sensitive habitats possibly containing special status species. During the project development phase, Operators will identify potentially sensitive habitats and coordinate with BLM to determine which species or habitats are of concern within or adjacent to the project area. In areas where required site-specific wildlife inventory has not been completed, Operators and BLM will work cooperatively to achieve it. BLM's responsibilities under NEPA, ESA, and NHPA essentially are the same on split estate (i.e., federal minerals/private surface) as they are with federal surface. BLM and Operators will seek input from the private surface owner to include conservation measures in split estate situations.

The following guidance and conservation measures are considered "features" or project "design criteria" to be used during Project Plan preparation. The design of projects can incorporate conservation needs for wildlife species or measures can be added as "Conditions of Approval." These types of conservation actions offer flexibility for local situations and help minimize or eliminate impacts to the species of interest.

1. Use the best available information for siting structures (e.g., storage facilities, generators and holding tanks) outside of the applicable zone of impact in important wildlife breeding, brood-rearing and winter habitat based on the following considerations.
 - a. size of the structure(s),
 - b. level/type of anticipated disturbance
 - c. life of the operation, and
 - d. extent to which impacts would be minimized by topography.
2. Concentrate energy-related facilities when practicable.
3. Develop a comprehensive Project Plan prior to POD or full field development activities to minimize road densities.
4. To reduce additional surface disturbance, existing roads and two-tracks on and adjacent to the CBM project area will be used to the extent possible and will be upgraded as necessary.
5. Minimize stream channel disturbances and related sediment problems during construction of road and installation of stream crossing structures. Do not place erodible material into stream channels. Remove

- stockpiled material from high water zones. Locate temporary construction bypass roads in locations where the stream course will have minimal disturbance. Time construction activities to protect fisheries and water quality.
6. Design stream-crossings for adequate passage of fish (if present), minimum impact on water quality, and at a minimum, the 25-year frequency runoff. Consider oversized pipe when debris loading may pose problems. Ensure sizing provides adequate length to allow for depth of road fill.
 7. Use corridors to the maximum extent possible: roads, power, gas and water lines should use the same corridor whenever possible.
 8. Avoid, where possible, locating roads in crucial sage grouse breeding, nesting and wintering areas and mountain plover habitats. Develop a route utilizing topography, vegetative cover, site distance, etc. to effectively protect identified wildlife habitats in a cost efficient manner.
 9. Conduct all road and stream crossing construction and maintenance activities in accordance with Agency approved mitigation measures and BMPs.
 10. Utilize remote monitoring technologies whenever possible to reduce site visits thereby reducing wildlife disturbance and mortalities.
 11. All new roads required for the proposed project will be appropriately constructed, improved, maintained, and signed to minimize potential wildlife/vehicle collisions and facilitate wildlife movement through the project area. Appropriate speed limits will be adhered to on all project area roads, and Operators will advise employees and contractors regarding these speed limits.
 12. Apply mitigation measures to reduce mountain plover, swift fox or sage grouse mortality caused by increased vehicle traffic. Construct speed bumps, use signing or post speed limits as necessary to reduce vehicle speeds near sage grouse leks, mountain plover habitat, or other important wildlife habitats
 13. Road closures may be implemented during crucial periods (e.g., extreme winter conditions, and calving/fawning seasons). Personnel will be advised to minimize stopping and exiting their vehicles in big game winter range while there is snow on the ground.
 14. Roads no longer required for operations or other uses will be reclaimed if required by the surface owner or surface management agency. Reclamation will be conducted as soon as practical.
 15. Operator personnel and contractors will use existing state and county roads and approved access routes, unless an exception is authorized by the surface management agency.
 16. Use minimal surface disturbance to install roads and pipelines and reclaim sites of abandoned wells to restore natural plant communities.
 17. Reclamation of disturbed areas will be initiated as soon as practical. Native species will be used in the reclamation of important wildlife habitat. Livestock palatability and wildlife habitat needs will be considered during seed mix formulation.
 18. Site new power lines and pipelines in existing disturbed areas wherever possible.
 19. Minimize the number of new power lines in sage grouse or mountain plover habitat. Bury lines near sage grouse leks and mountain plover nesting habitat when feasible.

20. Encourage monitoring of avian mortalities by entering into a Memorandum of Understanding (MOU) with FWS and the state agencies. The purpose of the MOU is to establish procedures and policies to be employed by the parties to lessen industry's liability concerns about the "take" of migratory birds.
21. Remove unneeded structures and associated infrastructure when project is completed.
22. If possible, minimize maintenance and related activities in sage grouse breeding/nesting complexes; 15 March - 15 June, between the hours of 4:00-8:00 am and 7:00-10:00 pm.
23. Protect, to the extent possible, natural springs from disturbance or degradation.
24. Design and manage produced water storage impoundments so as not to degrade or inundate sage grouse leks, nesting sites and wintering sites, prairie dog towns or other Special Status Species habitats.
25. CBM produced water should not be stored in shallow, closed impoundments or playas. Impoundments designed as flow through systems will lessen the likelihood that selenium will bioaccumulate to levels that will adversely affect other wildlife.
26. Develop offsite mitigation strategies in situations where fragmentation or degradation of Special Status Species habitat is unavoidable.
27. Protected reserve, workover, and production pits potentially hazardous to wildlife by netting and/or fencing as directed by the BLM to prevent wildlife access and minimize the potential for migratory bird mortality.
28. Reduce potential increases in poaching through employee and contractor education regarding wildlife laws. Operator should report violations to BLM and MFWP.
29. Operator employees and their contractors will be discouraged from possessing firearms during working hours.

Table 1. Summary of General Wildlife Reporting, Inventory, and Monitoring, CBM Development; Powder River and Billings Resource Management Plans, CBM Amendment (2002)

Action	Dates	Responsible Entity ^a
Plans of development for outcoming years, showing general location of proposed development	Annually	Team (BLM, USFWS, MFWP, Operators)
Annual reports summarizing findings and presenting necessary protection actions	Annually	BLM with reviews MFWP, USFWS, Operators, and other interested parties
Meeting to finalize future year's inventory, monitoring, and protection measures	Annually	BLM with participation by USFWS, MFWP, Operators, and other interested parties
Inventory and Monitoring		
Big game crucial winter range use monitoring (crucial winter range on the RMU plus 1-mile buffer)	When Applicable	MFWP with BLM assistance
Determine mountain plover habitat suitability	Prior to permit approval	BLM & operator assistance
In areas of suitable mountain plover habitat, conduct nest surveys in project area plus a .5 mile buffer	Prior to ground disturbing activities	BLM & operator assistance
In areas of suitable mountain plover habitat, map active black-tailed prairie dog colonies on federal surface and federal mineral estate.	Over the next couple years to provide data for an analysis required in the biological opinion.	BLM & operator assistance
Active prairie dog colonies within .5 mile of a specific project area will be identified, mapped and surveyed	Prior to permit approval	BLM with MFWP & operator assistance
Raptor nest inventories (RMU plus 1 mile buffer; burrowing owls excluded)	Every 5 years during April and May	BLM with MFWP & operator assistance
In areas with potential bald eagle winter roost sites, conduct surveys within 1 mile buffer	Prior to ground disturbing activities	BLM & operator assistance

Conduct bald eagle nest inventories within .5 miles buffer of project area	Between March 1 and mid July	BLM & operator assistance
Monitor productivity at active bald eagle nests within 1 mile of project-related disturbance	Between March 1 and mid July	BLM & operator assistance
Raptor nest productivity monitoring at active nests within 1 mile of project disturbance area	Every 5 years during March to mid-July	BLM with MFWP & operator assistance
Aerial sage grouse lek inventories (RMU plus 2 mile buffer)	Every 5 years	BLM with MFWP & operator assistance
Sage grouse lek attendance monitoring on and within 2 miles of the RMU	Annually	BLM with MFWP & operator assistance will visit selected leks each year so that all leks will be visited at least once over a 3 year period
Threatened, Endangered & Sensitive species inventory/monitoring within selected CBM development areas and selected undeveloped comparison areas	When Applicable	BLM with MFWP & operator assistance
Native American culturally significant species	When Applicable	BLM, MFWP, Tribal Representatives & Operator Assistance
Other wildlife species inventory/monitoring within selected CBM development areas and selected undeveloped comparison areas	When Applicable	BLM with MFWP & operator assistance

Table 2. Summary of APD/ROW Survey and Protection Measures, CBM Development within the Powder River and Billings Resource Management Plans

Protection Measure	Dates
Bald eagle nest surveys within 0.5 mile of project area	Yearlong
Bald eagle nest avoidance within 0.5 mile of active nests	No Surface Use or Occupancy
Bald Eagle Winter Roost surveys within 1 mile of project area	December 1 to April 1
Bald Eagle Winter Roost avoidance within 0.5 miles of roost site	No surface Use or Occupancy
Black-footed ferret surveys	Prairie dog colonies > 80 acres
Mountain plover surveys within 0.5 miles of project area	May 1 to June 15
Active prairie dog colonies on federal surface in mountain plover habitat	BLM & operator assistance
Mountain plover nest/brood avoidance within .25 miles of project area	April 1 to July 31
Peregrine falcon nest avoidance within 1 mile of active nest	BLM & operator assistance
Ferruginous nest avoidance within .5 miles of an active nest	No surface use or occupancy
Threatened, Endangered & Sensitive species surveys	As necessary
Threatened, Endangered & Sensitive species avoidance	As necessary
Big game crucial winter range avoidance	December 1 - March 31
Elk Parturition Range avoidance	April 1 - June 15
Big Horn Sheep – Powder River Breaks	No surface use or occupancy
Prairie dog colony mapping and burrow density determinations	Yearlong

Protection Measure	Dates
Raptor nest survey/inventory within 0.5 miles of project area	Yearlong
Raptor nest avoidance within 0.5 miles of active nests	March 1 – August 1
Sage grouse nesting habitat avoidance on areas within 2.0 miles of a lek	March 1 - June 15
Sage grouse and sharptail lek avoidance within 0.25 miles of a lek	No Surface Use or Occupancy
Sharp-tailed grouse nesting habitat avoidance on areas within 0.5 mi. of a lek	March 1 – June 15
Western burrowing owl surveys (prairie dog colonies within 0.5 miles of disturbance)	June – August
General wildlife avoidance/protection	As necessary

Table 3. Additional Wildlife Inventory and Monitoring Measures On and Adjacent to Areas with High Levels of Development (4 Locations/Section), Powder River and Billings Resource Management Plans, CBM Amendment (2001)

Action	Dates	Responsible Entity ^b
Raptor nest inventory/monitoring on areas with >.4 locations/section plus a 1-mile buffer and selected undeveloped comparison areas	Annually during April and May	BLM surveyor with Operator-provided financial assistance
Raptor productivity monitoring on areas with >.4 locations/section plus a 1-mile buffer and selected undeveloped comparison areas	Annually during March-July	BLM surveyor with Operator-provided financial assistance for BLM volunteer support
Selected TEC&SC inventory/monitoring on suitable habitats in areas with >.4 locations/section plus a 1-mile buffer and selected undeveloped comparison areas	Annually during spring and summer	BLM or Operator-financed BLM-approved biologist

Action	Dates	Responsible Entity ^b
Collect baseline information for benthic macroinvertebrates, amphibians and aquatic reptiles, algae and non-game fish. Monitor changes on selected streams	Baseline 1 – 2 years prior and annually over the life of the project	BLM surveyor with Operator-provided financial assistance
Aerial sage grouse lek inventory on areas with 4 locations/section plus a 2-mile buffer and selected undeveloped comparison areas	Annually during March to mid-May	BLM surveyor with Operator-provided financial assistance
Sage grouse lek attendance monitoring on areas with 4 locations/section plus a 2-mile buffer and selected undeveloped comparison areas	Year-long and in any year as deemed necessary by BLM and/or USFWS	Each known lek will be visited at least once annually by the BLM and/or an Operator-financed BLM-approved biologist; subsequent visits will occur at BLM-selected leks by the BLM, and/or Operator-financed BLM-approved biologist
Others studies on areas with 4 locations/section and selected undeveloped comparison areas		USFWS and/or BLM with Operator- and other party-provided financial assistance

REFERENCES:

- Atkinson, E. C. 1995. Survey and monitoring guidelines for ferruginous hawks in Montana. USDI, Bureau of Land Management and Montana Fish Wildlife and Parks. 42pp.
- Avian Power Line Interaction Committee. 1994. Mitigating bird collisions with power lines” The state of the art in 1994. Edison Electric Institute, Washington, D.C. 78pp. +append
- Avian Power Line Interaction Committee. 1996 Suggested practices for raptor protection on power lines: The state of the art in 1996. . Edison Electric Institute, Washington, D.C. 125pp. +append
- Biggins, D.E., B.J. Miller, L.R. Hanebury, B. Oakleaf, A.H. Farmer. 1993. A technique for evaluating black-footed ferret habitat. Pp 73-87 *In* Proceedings of the Symposium on the Management of Prairie Dog Complexes for the Reintroduction of the Black-footed Ferret. U.S. Department of the Interior, Fish and Wildlife Service.
- Call, M. W. 1978. Nesting habitats and surveying techniques for common western raptors. U.S. Department of the Interior, Bureau of Land Management, Technical Note No. 316. 115pp.
- Grier, J.W., and R.W. Fyfe. 1987. Preventing research and management disturbance. Pages 173-182 *In* B.A.G. Pendleton, B.A. Milsap, K.W. Kline, and D.M. Bird editors. Raptor management techniques. Institute of Wildlife Research, National Wildlife Federation, Scientific and Technical Series No. 10 420 pp.
- U.S. Fish and Wildlife Service. 1989. Black-footed ferret survey guidelines for compliance with the *Endangered Species Act*. U.S. Fish and Wildlife Service, Denver Colorado, and Albuquerque, New Mexico (April 1989). 10pp. +append
- U.S. Fish and Wildlife Service. 2002c. Mountain Plover survey guideline. U.S. Fish and Wildlife Service, Denver, Colorado. 7pp.