United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
5353 Yellowstone Road, Suite 308A
Cheyenne, Wyoming 82009

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In Reply Refer To:
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Memorandum

To: Chuck Otto, Field Manager, Bureau of Land Management, Pinedale Field Office, Pinedale, Wyoming

From: Brian T. Kelly, Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Field Office, Cheyenne, Wyoming

Subject: Comments on the Revised Draft Supplemental Environmental Impact Statement for the Pinedale Anticline Oil and Gas Exploration and Development Project

Thank you for the opportunity to comment on the Revised Draft Supplemental Environmental Impact Statement (RDSEIS) for the proposed Pinedale Anticline Oil and Gas Exploration and Development Project located in Sublette County, Wyoming. The Bureau of Land Management's (Bureau) preferred alternative (Alternative D) includes year-round drilling, completion and production of up to 4,399 wells and associated facilities. This proposal is in addition to the existing development of 642 producing wells, approved under the 2000 Record of Decision for the Pinedale Anticline Oil and Gas Exploration and Development Project. Alternative D also includes an expanded core development area (Core), potential development area (PDA), phased development and other Operator committed measures within the Pinedale Anticline Project Area (PAPA). The PAPA encompasses 198,034 acres of combined Federal, State of Wyoming, and private surface ownership. The proposed alternative would result in 12,885 acres of new disturbance in addition to the existing disturbance. The U.S. Fish and Wildlife Service (Service) has previously provided comments to the Bureau regarding the first DSEIS in our letter of April 6, 2007 (WY07FA0129). Please consider the following comments in addition to our April 2007 comments in your final SEIS.

General Comments

The Service has responsibility, under a number of Federal laws, treaties, Executive Orders, and memoranda of agreement, for the conservation and management of fish and wildlife resources. Some of these same authorities also require other Federal agencies, such as the Bureau, to consider, avoid, or prevent adverse impacts to fish, wildlife, and wetland resources. We provide comments on (1) threatened, endangered and candidate species, (2) migratory birds, (3) wetlands and riparian areas, and (4) sensitive species. The Service provides recommendations for protective measures for threatened and endangered species in accordance with the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Protective measures for migratory birds are provided in accordance with the Migratory Bird Treaty Act (MBTA), 16

U.S.C. 703, the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668, and the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186. Wetlands are afforded protection under Executive Orders 11990 (wetland protection) and 11988 (floodplain management), as well as section 404 of the Clean Water Act. Other fish and wildlife resources are considered under the Fish and Wildlife Coordination Act, 48 Stat. 401, as amended, 16 U.S.C. 661 *et seq*, and the Fish and Wildlife Act of 1956, as amended, 70 Stat. 1119, 16 U.S.C. 742a-742j.

The RDSEIS indicates that removal of existing native vegetation would be considerable throughout the project area affecting shrub-dominated habitats significantly through conversion to herbaceous vegetation. The RDSEIS states that the PAPA is comprised of 147,166 acres of sagebrush steppe. It also states that under all alternatives invasion of noxious weeds and the long term loss of shrub-type vegetation, especially sage brush, could have significant effects on sagebrush obligate migratory birds species such as Baird's sparrow (*Ammodramus bairdii*), sage thrasher (*Oreoscoptes montanus*), Brewer's sparrow (*Spizella breweri*), and sage sparrow (*Amphispiza belli*). Additionally, of significant concern to the Service, are the anticipated significant effects described in the RDSEIS to greater sage-grouse (*Centrocercus urophasianus*) and pygmy rabbit (*Brachylagus idahoensis*), both of which are currently being considered for listing under the Act. The Service recommends that the Bureau consider these potentially irreversible and immitigable impacts, which may exacerbate the decline of some species.

Specific Comments

1. Page viii, Listed and Special Status Species: The RDSEIS states that effects to Colorado River fish species are not anticipated. However, page 4-105, section 4.14 and Table 4.14-1, indicate that under all alternatives there will be surface water withdrawals for hydrostatic testing and dust control ranging from 37.63 to 83.14 acre-feet. Also, page 4-134, Table 4.19-1 states that surface and groundwater withdrawals for hydrostatic testing and dust control will range from 327.63 to 467.53 acre-feet under all alternatives. The document suggests that produced water may be returned, or added, to the system; therefore, these amounts do not include produced water.

TE-1

FA-2-1

For clarification, formal consultation under the Act is required for projects that may lead to a depletion of water to the Colorado River system. Federal agency actions in Wyoming, resulting in water depletions to the Colorado River system, may affect the endangered Bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), Humpback chub (*Gila cypha*), and Razorback sucker (*Xyrauchen texanus*) downstream in the Green and Colorado river systems. In addition, depletions may contribute to the destruction or adverse modification of designated critical habitat for these four species.

In general, depletions include evaporative losses and/or consumptive use of surface or groundwater within the affected basin, often characterized as diversions less return flows. Project elements that could be associated with depletions include, but are not limited to, ponds (detention/stock watering), reservoirs (irrigation storage/generation), hydrostatic testing of pipelines, wells, dust abatement, diversion structures, and water treatment facilities. Any actions that may result in a water depletion should be identified. The document should include (1) an estimate of the amount and timing of average annual water use (both historic and new uses) and methods of arriving at such estimates, (2) location of

where water use or diversion occurs as specifically as possible, (3) if and when the water will be returned to the system, and (4) what the water is being used for. If the project has peculiarities or oddities, the Service may have more specific questions regarding the potential consumptive use of water.

Regarding produced water, the Service would like to work with the Bureau to review the characteristics of this proposal in terms of the water usage and assist in determining whether a depletion would occur. Although some water use plans may meet certain parameters that may no longer meet the definition of a depletion, the Bureau must be prepared to demonstrate the timeframe, discharge point, and methods to clearly show that there is no effect on Colorado River fishes from produced water. As with any no effect determination, the Bureau is not required to consult with the Service under the Act, but in the case of possible depletions, we recommend that the Bureau provide the water withdrawal plan to the Service for review before authorizing the action.

2. Page viii, Listed Species and Special Status Species: The RDSEIS indicates that effects to bald eagles are expected to be substantial within one mile of the New Fork River riparian zone. Page 3-111(Bald Eagle), states that as of November 2006 there has been 716 acres of disturbance related to oil and gas development within one mile of the New Fork River riparian zone and 10.7 acres of disturbance has occurred directly to the forest-dominated portion of the zone, mostly on Federal lands. Additionally, page 4-139 (Special Status Wildlife Species) states that under the preferred alternative, an additional 830 acres of disturbance is expected within the one mile protective buffer of a known occupied bald eagle nest and approximately 2,000 acres of disturbance is expected to occur within the riparian zone of the New Fork River. " Lastly, page 4-140 of the RDSEIS states that "such levels of effect…to sensitive species' habitats may adversely impact the Bureau's (2002) management of the PAPA as a functional ecosystem…within the framework of their *Sensitive Species Policy and List.*

FA-2-2

W-1

The Service is very concerned that impacts to the water and riparian resources within the PAPA may result in permanent negative impacts to the fish and wildlife resources. Riparian habitats constitute a relatively small, but extremely important part of the landscape in the western United States. They provide habitat to a variety of plant and resident wildlife species as well as essential habitat for many migratory wildlife species. Because of their limited extant in the landscape and disproportionately high biological value, we encourage the Bureau to ensure they are adequately protected. Although we understand that valuable natural gas resources are available below the riparian area, we strongly encourage the Bureau and Operators to pursue new technologies that will allow directional drilling to reach the gas resources without disturbing the surface area in these key habitats. We recommend that the Bureau implement a one-mile protective buffer around the New Fork River riparian corridor where disturbance is prohibited.

W-2
FA-2-3

3. Page 1-12, Table 1.11-1: The table indicates that the Service's authority includes the Endangered Species Act. For clarification, the Service also has authority under the MBTA and BGEPA.

W-3 FA-2-4

4. Page 3-113, Yellow-billed Cuckoo: The RDSEIS identifies the yellow-billed cuckoo as a candidate species for listing under the Act. It also states that none of the surveys conducted in the PAPA have observed yellow-billed cuckoos and breeding bird routes in 2002 on Bureau lands also did not detect the species. The information presented in the RDSEIS does not clearly indicate whether the surveys were specifically designed to detect yellow-billed cuckoos (*Coccyzus americanus*). Yellow-billed cuckoos have been observed at the nearby Seedskadee National Wildlife Refuge and generally require species-specific survey techniques to document presence or absence of the species. If they have not previously been conducted, the Service recommends that the Bureau conduct surveys targeted for this species. Additionally, we recommend that the Bureau prohibit disturbance within riparian areas to protect yellow-billed cuckoos and their nesting habitat.

5. Page 3-129, section 3.22.1.2, Upland Game Birds: The RDSEIS states the following:

The PAPA is within two Wyoming Game and Fish Department (WGFD) Small and Upland Game Management Areas (SUGMA). In 2007 eight active leks, within the two combined SUGMAs, demonstrated significant declines since 1998; Seventeen inactive leks had significant declining trends during the ten years prior to becoming inactive. Together the 25 declining or now inactive leks had significantly more producing oil and gas wells within two miles of the lek. Only two leks in the PAPA, where there are few or no producing wells within two miles, have been increasing in peak male attendance from 1998 through 2007. Also page 4-130, section 4.19.2 states that the Bureau will consider impacts to be significant if development actions contribute to the need to list a species under the Act.

The population of greater sage-grouse in the Green River Basin, which includes the PAPA, is one of the five largest extant greater sage-grouse populations within the species' entire range (Connelly et. al., 2004). As stated previously, the Service is currently reviewing the status of the greater sage-grouse for consideration for listing under the Act; therefore, we are concerned that existing and continued oil and gas development within the PAPA at the current rate will contribute to the need to list the species. Holloran (2005) suggests that current stipulations are inadequate to protect greater sage-grouse, and his data are supported by similar research also on the PAPA (Lyon and Anderson 2003) as well as on gas field developments in the Powder River Basin (Naugle *et al.* 2006) and Alberta, Canada (Aldridge and Brigham 2003). Holloran goes on to state that mean extirpation time for the population of birds in his 2005 study that was present before gas field development was estimated at 19 years.

To protect and maintain greater sage-grouse populations, Anderson and Holloran (2005) recommend that managers minimize or halt actions that reduce suitability of nesting habitat within 5 kilometers (3.1 mile) of a lek and protect all potential nesting habitat regardless of proximity to lek locations. The Service understands that the data presented by Holloran (2005) and others were unavailable when the Bureau approved the initial Pinedale Anticline project. However, we are concerned that the Bureau is not incorporating this new information into the PAPA SEIS plan of development when the potential outcome could have significant effects on the viability of the Green River Basin sage-grouse population.

The Bureau had signed the 2000 Memorandum of Understanding (MOU) with the Western Association of Fish and Wildlife Agencies (WAFWA) to conserve the greater sage-grouse and its habitat. This MOU outlined the participation of Federal and State wildlife agencies, including the Wyoming Game and Fish Department, in greater sage-grouse conservation. The MOU is currently being revised with the intent that the same agencies as well as others will sign an updated MOU in early 2008.

W-4 FA-2-5 Until the new MOU is in place, we recommend that the objectives of the 2000 MOU be considered in project implementation in sage-grouse habitat. Additionally, unless site-specific information is available, greater sage-grouse habitat should be managed following the guidelines by Connelly et al. 2000 (also known as the WAFWA guidelines). We strongly encourage the Bureau to ensure that actions authorized do not exacerbate greater sage-grouse declines on either a local or range-wide level.

WT-1 FA-2-6 6. Page 4-127, sections 4.18 and 4.18.5, Wetlands, Riparian Resources and Flood Plains: The RDSEIS indicates that under the preferred alternative nearly 670 acres of disturbance would occur within the 100 year floodplain of the New Fork River yet no additional mitigation for these resources has been identified. Please see comment #2 above.

TE-2 FA-2-7 7. Page 4-130, section 4.19, Listed and Special Status Species: The RDSEIS states that no comments were received during project scoping related these species. Although the Service did not provide comments specific to this project during the scoping period, we do provide the Bureau with an annual list of species protected under the Act as well as information on candidate species and species of concern. In addition, we provide information regarding Federal agency responsibilities pursuant to the MBTA, BGEPA and other laws and policies for which the Service has authority. We recommend you refer to our letter of August 10, 2007 (WY07SL0419), to ensure your analysis includes those species identified on the most current list of species protected under the Act in and near the project area as well as migratory birds and other trust resources. If the proposed project may affect listed species, consultation with the Service pursuant to section 7(a)(2) of the Act will be required. Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities in furtherance of the purposes of the Act by carrying out programs for the conservation and recovery of listed species. Therefore we encourage you to incorporate measures into the project design for the conservation of listed species.

TE-3 FA-2-8 8. Page 4-131, section 4.19.3.1, Summary of Impacts: The RDSEIS lists the species that are federally protected under the Act that may occur within the PAPA and includes the grizzly bear (*Ursus arctos horribilis*). As an update, on March 29, 2007, the Service published a final rule (72 FR 14865) announcing that the Yellowstone Distinct Population Segment (DPS) of grizzly bears is a recovered population that no longer meets the definition of threatened or endangered under the Endangered Species Act of 1973, as amended (16 U.S.C 1531 *et seq.*). The delisting of the Yellowstone DPS does not change the threatened status of the remaining grizzly bears in the lower 48 States. The map of the DPS can be viewed at *http://www.fws.gov/mountain-prairie/species/mammals/grizzly/GYA_DPS_color_map.jpg*). Also included in the list is the black-footed ferret for which the RDSEIS indicates there will be no adverse effect. We recommend that the RDSEIS clearly state whether or not white-tailed prairie dog towns will be disturbed. Black-footed ferrets (*Mustela nigripes*)

TE-4 FA-2-8 may be affected if prairie dog towns are impacted. Please be aware that black-footed ferret surveys may only be warranted in white-tailed prairie dog towns as noted in our February 2, 2004, letter, previously sent to your office. We continue to encourage Federal agencies to protect all prairie dog towns for their value to the prairie ecosystem and the myriad of species that rely on them. We recommend that you analyze potentially disturbed prairie dog towns for their value to future black-footed ferret reintroduction. If a field check indicates that prairie dog towns may be affected, you should contact our office for guidance on ferret surveys.

TE-5 FA-2-9 9. Page 4-132, Ute ladies'-tresses: The RDSEIS states that Ute ladies'-tresses has not been detected in the PAPA and there are no known occurrences in southwest Wyoming. Because there are known occurrences in northeast Utah as well as eastern Wyoming the Service recommends that the Bureau evaluate suitable habitat (*i.e.*, seasonally moist soils and wet meadows of drainages below 7,000 feet elevation) for possible occurrence of the orchid.

W-5 FA-2-10 10. Page 4-134, Paragraph 1: The RDSEIS states that Ultra, Shell, Questar and JGGC have worked with the Service to develop and implement Best Management Practices (BMP) to minimize impacts to bald eagles and other raptors along the New Fork River. The BMPs were developed and agreed to by industry in 2006. However, the Service is concerned that these voluntary BMPs are not being implemented to the level for which the agreement was intended. Only once, by Shell in October 2006, has the Service been contacted by industry concerning the activities being conducted and what BMPs would be implemented. The Service would like to work with the Operators and the Bureau to ensure that these BMPs are being implemented. We recommend that the Final SEIS include a list of activities conducted along the New Fork River where BMPs were implemented pursuant to the agreement.

W-7 W-6 FA-2-11 11. Page 4-135, Paragraph 5: The RDSEIS states that under all alternatives surface disturbance in areas of native vegetation is expected to directly and indirectly impact sensitive species such as ferruginous hawks (*Buteo regalis*), mountain plovers (*Charadrius montanus*), burrowing owls (*Athene cunicularia*), sage thrashers, Brewer's sparrows, pygmy rabbits, white-tailed prairie dogs and other species. We recommend that the Bureau carefully consider its obligations under the MBTA and Executive Order 13186 to protect the many species of migratory birds, including eagles and other raptors and to promote the conservation of migratory bird populations and their habitats. Additionally, the Service is currently conducting a status review for the pygmy rabbit (73 FR 1312). Therefore, we encourage Federal agencies to analyze project areas for potential effects to pygmy rabbits and their habitats. Pygmy rabbits are sagebrush obligate species, primarily found in dense western big sagebrush (*Artemisia tridentate ssp.*) communities typically where at least two other species of sagebrush and forbs occur as well. Conversion of sagebrush grasslands, habitat fragmentation and overgrazing are considered potential threats to pygmy rabbits.

W-8 FA-2-12 12. Page 4-136: The RDSEIS states that there are 11,622 acres of prairie dog towns within the Pinedale Anticline Work Study Area. The Service recommends that the Bureau strive to

W-8 FA-2-12 protect the contiguous nature of these towns for the conservation of white-tailed prairie dogs. Please see our previous comments concerning prairie dogs related to Page 4-131, section 4.19.3.1, "Summary of Impacts."

TE-6 FA-2-13 13. Page 4-137, Black-footed Ferret: The RDSEIS states that if ferrets are discovered within 0.5-mile of proposed activities, the Bureau will consult with the Service to determine necessary conservation measures. In the event a ferret is observed within any portion of a prairie dog town, where an activity is proposed, regardless of the distance from the activity, the Service recommends that the Bureau first contact the Service as soon as possible. Second, we recommend that the proposed activity be modified to completely avoid the town and possibly even the entire complex to ensure that the habitat remains large and contiguous to meets with the needs of the ferrets that occur there.

14. Page 4-138, Ute Ladies tresses Orchid: The RDSEIS states that this species has not been detected and impacts to wetlands would be "mostly" avoided. However, as indicated above nearly 670 acres of disturbance would occur within the 100 year floodplain of the New Fork River. Please see comment #9.

15. Page 4-138, Colorado River Fish: Please see comment #1.

TE-7 FA-2-14 16. Page 4-140, Section 4.19.4, Cumulative Impacts: The RDSEIS states that no listed species are likely to be affected by any of the alternatives. The Service recommends that this section clarify whether or not the Bureau anticipates effects to listed species such as black-footed ferrets and/or Colorado River fishes from this proposal. See comment #1.

W-9 FA-2-15 17. Page 4-143, Section 4.19.5, Listed and Special Status Species Mitigation Opportunities: The RDSEIS describes several mitigation opportunities that the Bureau "could" require the Operators to implement. The Service recommends that the Bureau commit to (1) requiring the Operators to restore and maintain functional riparian habitat; (2) prohibiting motorized vehicle use in white-tailed prairie dogs towns; and (3) requiring the Operators to inventory all habitats, where disturbance may occur, for potential occurrence and/or use by listed species and sensitive species prior to the disturbance in order to determine what areas should be avoided due to their irreplaceable value and what areas should be mitigated for and to what level.

FA-2-16 18. Page 4-160, Section 4.20.3.5, Alternative D: The RDSEIS describes the preferred alternative in detail for which the Service is providing the following comments on each aspect of the alternative.

a) *Year-round development in the designated Core area and possibly in the designated PDA if approved by the Bureau.* The Service is concerned with year-round development within the entire Core and PDA because of the potential to exacerbate the already documented declines in greater sage-grouse within the PAPA. Please see our comment #5 above. Furthermore, many other species of wildlife, including some migratory birds, do not occur within the PAPA year-round. Therefore, these species may not be able to adapt to a landscape in continuous flux through human disturbance. More importantly, many migratory birds only arrive on the PAPA during the breeding season, an extremely important part of their life cycle, and when they may be the most

W-10 FA-2-16

sensitive to human disturbance. We believe that year-round drilling may be a feasible approach at some specific locations within the Core or PDA; however, we encourage the Bureau to carefully consider appropriate measures and stipulations to protect wildlife resources.

MF-1 FA-2-17

b) *Wildlife monitoring and mitigation fund of an "expected" $36 million that is intended to provide the means for monitoring and mitigation when the monitored parameter meets some specified level of change. The fund is targeted toward big game, sage-grouse, and sensitive species including sagebrush obligate birds.* The RDSEIS is not clear how the amount of the mitigation fund was derived. Therefore, one cannot assess whether this amount is sufficient to actually mitigate for losses of wildlife and their habitats within the 45,415-acre Core area and the 24,875-acre PDA. Appendix 9 (page 9C7) states that the Operators will provide 4.2 million when the Record of Decision is signed and an estimated 1.8 million annually "based on the pace of development." The Service supports the acquisition of conservation easements to assure continued or enhanced habitat function. However, we caution the Bureau in their decision to assume that $36 million will be adequate to acquire the conservation easements and other mitigation measures equal to or greater than the numbers of individual wildlife species and their habitats that will be lost to this proposal. This is particularly a concern as the fund may only be paid in full when the project is complete. The Service encourages the Bureau to consider mitigation needs and actions in the context of the Wyoming Landscape Conservation Initiative and the landscape scale long-term science plan WLCI is in the process of finalizing. WLCI is a multi agency science -based adaptive approach to ensuring the long term health of the south west Wyoming landscape.

LS-1 LS-2 FA-2-18

c) *Federal Suspended and Term No Surface Occupancy leases in the flank areas outside of the Core and PDA.* The Service is concerned that the proposed 5-year suspension of leases in the flanks, totaling 49,903 acres, is not sufficient to provide an adequate refuge for wildlife displaced from the Core and/or PDA. Since it is well known that vegetation communities, comprised of sage brush species, may take decades to return to pre-disturbance levels, we recommend that leases in the flanks be considered for [illegible] hin the Core/PDA are reclaimed to a level so as to [illegible] of the species that normally inhabit it. Additionally, [illegible] s 1-3 and 2-51 it seems that several of the Operator's [illegible] luded in the Federal Suspension and Term No Surface [illegible] effective to mitigate for disturbance in the Core/PDA, we recommend that all of the leases in the flanks be suspended until after the habitats within the Core/PDA are reclaimed to a level that meets all of the life cycle functions of the species that normally inhabit it.

Are these comments LS-1 and LS-2 or AD-1 and AD-2?

M-1 FA-2-19

19. Page 4-166, Section 4.20.5, Additional Mitigation Opportunities: The RDSEIS lists several measures that may reduce impacts within the Core and for which the Bureau "could" implement. The Service recommends that (1) the liquids gathering system be installed to reduce truck traffic; (2) traffic be reduced especially in areas of wildlife use; (3) computer-assisted monitoring be required at all producing sites to reduce human presence; (4) the best available science be used regarding mitigation decisions; (5) Operators enhance or rehabilitate wildlife habitat degraded in the process of development; and (6) the Bureau

M-1 FA-2-19 require that Operators inventory habitat for sage-grouse, migratory birds, and pygmy rabbits to determine the appropriate mitigation. The Service recommends that the final SEIS clarify whether these measures will or will not be implemented.

WT-2 FA-2-20 20. Appendix 4, Page 4-13: The RDSEIS states that surface disturbance would remain a minimum of 500 feet from surface waters, riparian areas, wetlands and 100-year floodplains unless the Bureau approves otherwise. With ever-improving directional drilling technologies it may be possible to implement avoidance of these important resources in every case.

W-11 FA-2-21 21. Appendix 4, Page 4-18: The RDSEIS states that bald eagle nests will be considered active if occupied within the last three years. Additionally, the RDSEIS states that permanent, high profile structures will not be constructed within specified distances (in feet) of active raptor nests: 1,000 (ferruginous hawks), 2,600 (bald eagles), and 825 (all other raptors). The Service generally recommends that bald eagle and ferruginous hawk nests be protected during the nesting season by a 1-mile disturbance-free buffer while all other raptor nests be protected by a 0.5-mile disturbance-free buffer. Although our recommended disturbance-free buffers are specific to the time nesting activity is likely to occur, we are concerned with impacts within the disturbance-free buffers outside of the nesting periods. For example, we are aware of cases where above-ground structures are being constructed within these Service recommended protective buffers (e.g. 1000 feet of ferruginous hawk nests), outside of the nesting season. We are also aware that the preliminary data indicate that these long-used nest sites may be abandoned by the raptor species possibly due to the encroachment of development in close proximity resulting in year-round human disturbance through maintenance activities and traffic. We recommend that the Bureau analyze the impacts of above-ground development, within Service recommended protective buffers, on the viability of raptor nests and territories. If the analysis shows a negative impact, we recommend that the Bureau consider modifying their current raptor protection stipulations. The National Bald Eagle Guidelines recommends that bald eagle nests be protected if they have been active within the last five years. We also recommend that the Bureau consider the protection of alternate nests of bald eagles as well as the alternate nests of other raptor species.

W-12 FA-2-22 22. Appendix 4, Page 4-19: The RDSEIS states activity will be restricted within 0.5-mile of all active raptor nests except ferruginous hawk for which the buffer shall be 1.0 mile. The Service recommends that this measure clarify that for bald eagles, the Service also recommends a 1.0 mile protective buffer year round and that bald eagle nests should be considered active if occupied within the last 5 years.

W-13 FA-2-23 23. Appendix 4, Page 4-21: The RDSEIS states that if breeding birds are observed, surveys will be conducted to search for active nests. We recommend that the final SEIS clarify what actions will be taken if an active nest is observed. Additionally, since the nests of some species are difficult to observe; we recommend that, if adult birds are observed in active courtship or nesting, the Bureau contact the Service to discuss protective measures. Additionally, we would appreciate working with the Bureau to develop a conservation agreement for the protection of migratory birds.

W-14 FA-2-24

24. Appendix 7, Page 7-4, paragraph 5: The RDSEIS states that if oil enters the reserve pits, the oil would be removed and the pit would be flagged overhead or covered with netting to prevent waterfowl use. Flagging is not an effective deterrent. A study of bird mortality in oil pits in Wyoming conducted by Brent J. Esmoil for the University of Wyoming (Esmoil 1995) demonstrated that deterrents such as flagging, strobe lights, metal reflectors and noise makers were **not** effective at preventing bird mortalities from occurring in these pits. Service personnel have also documented bird mortalities in oil pits with flagging. Esmoil (1995) did not find any mortality in pits completely covered with netting. We recommend that the Bureau require that if oil or sheens are present in reserve pits, the oil sheen will be immediately removed pursuant to applicable regulations or covered with netting to exclude birds and other wildlife from entry.

25. Appendix 7, Pages 7-5 and 7-6, Liquids Gathering System: The RDSEIS describes a liquids gathering system to collect condensate and produced water from existing and future well pads. It is not clear if the liquids gathering systems will include evaporation ponds, open topped tanks or open pits for storing oil, condensate, or produced water. If evaporation ponds will be used for storing produced water, they must not contain oil or have visible sheens, which can cause mortality of migratory birds and other wildlife. Oily sludges remaining at the bottom of the impoundments as well as oil in the bank soil can seep onto the pond surface, especially during the summer when warm temperatures can mobilize the oil. Although the operators have made efforts to prevent oil from entering the evaporation ponds, oily bottom sludges and oil-soaked soils along the banks of the ponds contribute sheens and oil onto the pond surfaces, especially during hot summer days. Additionally, rainfall events or snowmelt will wash oil from the banks back into the pond. The chronic oiling can only be prevented by cleaning the banks, removing the oil-soaked soils and the bottom sludge.

High concentrations of salts can also pose a risk to migratory birds. Birds entering evaporation ponds with hypersaline water can ingest the brine and die from sodium toxicity. Salt toxicosis has been reported in ponds with sodium concentrations over 17,000 milligrams per liter (parts per million) (Windingstad et. al. 1987). Ingestion of water containing high sodium levels can also pose chronic effects to aquatic birds, especially if a source of freshwater is not available nearby. Aquatic birds ingesting hypersaline water can be more susceptible to avian botulism (Cooch 1964). During cooler temperatures, sodium in the hypersaline water can crystallize on the feathers of birds landing in these waterbodies. The sodium crystals destroy the feathers' thermoregulatory and buoyancy functions causing the bird to die of hypothermia or drowning. Birds preening the salt crystals off their feathers can ingest the salt. Ingestion of as little as 4 g of salt crystals (NaCl) could be lethal for waterfowl (Meteyer et al. 1997). Sodium intoxication can cause neurological impairment resulting in the bird's inability to hold its head upright (Meteyer et al. 1997). The bird's head will droop into the water and cause it to drown.

FA-2-25

If the evaporation pond is receiving produced water from oil or natural gas wells, oil and gas production chemicals, such as corrosion inhibitors and surfactants, could be present in the produced water and could pose a risk to migratory birds. When a bird comes into contact with water containing surfactants, the surfactant will reduce the surface tension of the water; thus, allowing water to penetrate through the feathers and onto the skin. This

W-15 FA-2-25

compromises the insulative properties of the feathers and subjects the bird to hypothermia (Stephenson 1997). The loss of water repellency by the feathers due to reductions in surface tension will cause the bird to become water logged and the loss of buoyancy will cause the bird to drown. The SEIS should specify if the liquids gathering systems will use open topped tanks and or evaporation ponds and measures to prevent migratory bird mortality. Additionally, it is not clear if the liquids gathering systems will serve as the final disposal facilities for produced water. If the produced water will be disposed of elsewhere, the SEIS should specify where the disposal facilities will be located and assess the potential environmental impacts of these disposal facilities.

W-16 FA-2-26

To avoid wildlife mortality at oil pits and evaporation ponds, the Service recommends the following measures: (1) Use closed containment systems to store oil. Closed containment systems require little or no maintenance, they can be moved to a new site when the facility is closed, and they eliminate soil contamination and remediation expenses; (2) Eliminate pits or keep pits and ponds free of oil. If evaporation ponds for water disposal will be part of the proposed facility, the facility should be designed to prevent oil from entering the pond. A contingency plan should be developed to ensure immediate clean up if oil is accidentally discharged into the evaporation pond; (3) Use effective and proven wildlife deterrents or exclusionary devices on open-topped tanks or pits to prevent wildlife mortality. Netting appears to be the most effective method of preventing birds from entering wastewater evaporation ponds and oil production skim pits. Flagging is not effective; (4) If evaporation ponds for water disposal will be part of the proposed facility, implement engineering controls to prevent the discharge of wastewater containing oil and surfactants into the evaporation pond; and (5) Deep well injection of oil field wastewater is recommended to eliminate the need for evaporation ponds and the risk to migratory birds and other wildlife from exposed oil, surfactants and hypersaline conditions.

W-17 FA-2-27

26. Page 9C-2, Appendix 9, Alternative D Mitigation Plan: The plan indicates that this alternative will leave 92 percent of the PAPA undisturbed with "large, contiguous blocks" of land without development as habitat for wildlife. Since the individual size of the contiguous undisturbed blocks is not specified, we recommend that the mitigation plan also include a map showing the undisturbed lands in relation to the existing development. The Service is concerned that the 92 percent figure may include any land area between disturbed well sites, roads and other facilities, and not large contiguous blocks without any surface disturbance. Fragmentation plays a critically important role in how wildlife will use the landscape and should be carefully considered in the SEIS. A more thorough analysis should determine how much land valuable to wildlife is available and to what degree does the land meet the needs of the species impacted by activities on the PAPA. Please see comment #18b above regarding the science-based Wyoming Landscape Conservation Initiative.

27. Page 9C-2, Appendix 9, Alternative D Mitigation Plan: The plan states that the Operators will utilize the BMPs as voluntary measures and will seek technical assistance from the Bureau and Service. Please see comment #10.

28. Page 9C-7, Appendix 9, Compensation for Impacts: Please see comment #18(b).

MO-1 FA-2-28

29. Page 9C-8, Appendix 9, Compensation for Impacts: The plan states that the Operators will monitor mitigation measures to determine their effectiveness. The Service recommends that the Bureau retain authority in determining the effectiveness of the mitigation in coordination with the WGFD and other experts.

W-18 FA-2-29

30. Page 10-1, Appendix 10, Monitoring and Mitigation Matrix: We have reviewed the matrix and offer the following comments:
    a) Greater sage-grouse: The matrix indicates that in order for mitigation to occur there will need to be specific percentage of change in total number of active leks or leks in a single complex or numbers of males in attendance over 2 years, or change in nesting success and so on. It is uncertain if these changes take into account baseline information collected prior to the 1999 PAPA Record of Decision or from this point on. The Service is concerned that sage-grouse population levels, lek attendance and nesting success may already exceed these thresholds and if so, the Bureau should consider this in their decision to consider this alternative.

    b) Sensitive Species: The matrix identifies sensitive species as bald eagles, burrowing owls, ferruginous hawks, pygmy rabbits and white-tailed prairie dogs. It also identifies sensitive sagebrush bird species as Brewer's sparrow, sage sparrow and others. It is not clear upon what information the change thresholds are based or the scientific information used to support the establishment of such thresholds. Several of the species above are protected under Federal laws such as the MBTA and BGEPA; however, the Service did not have the opportunity to provide input regarding the development of this matrix. The matrix states that mitigation will be implemented when there is a change in numbers of individuals over a 3-year period equaling 15 percent or more. The Service is concerned that this may result in a violation of the MBTA or BGEPA.

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The Bureau is obligated to protect all species of migratory birds under the MBTA and provide the additional protections afforded eagles under the BGEPA. The MBTA prohibits the taking of any migratory birds, their parts, nests, or eggs except as permitted by regulations and does not require intent to be proven. Section 703 of the MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to ... take, capture, kill, attempt to take, capture, or kill, or possess ... any migratory bird, any part, nest, or eggs of any such bird..." The BGEPA, prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing. The Service recommends the Bureau implement those strategies outlined within the Memorandum of Understanding directed by the President of the U.S. under the Executive Order 13186 in order to promote the conservation of migratory bird populations and their habitats. Also, the Bureau has recently issued Migratory Bird Treaty Act-Interim Management Guidance which specifies several BMPs. We recommend you reference this document in your final SEIS.

31. Page 10-5, Mitigation Responses: Mitigation responses 1-3 include protection of flank areas from disturbance, habitat enhancements and acquisition of conservation easements.

MF-2 FA-2-31 These responses will be implemented before consequences become "severe or irreversible" through monitoring. If the mitigation does not result in the desired effects for wildlife the process will be repeated (responses 1-3) until results are achieved or feasible responses are exhausted. The Service is concerned that the subjective nature of the mitigation responses may result in negative effects to wildlife becoming severe or irreversible. The fourth mitigation response will only be implemented when responses 1-3 have been exhausted. Implementation, monitoring and the subjective determination of effectiveness of each response may take several years to demonstrate the desire result. Please see comment #18 (c) regarding protection in the flank areas. Additionally, it is unclear if mitigation responses will consider the baseline information, especially for greater sage-grouse, collected before the 1999 PAPA decision and since development has begun.

Summary

W-20 FA-2-32 In summary, the Service is very concerned that implementation of Alternative D could substantially contribute to the extirpation of one of the largest populations of greater sage-grouse in the species entire range. We are not convinced by the information provided in the RDSEIS that proposed protective measures for greater sage-grouse and other wildlife will ensure their continued survival in the PAPA. Additionally, we are concerned that encroachment of development within the Service's recommended protective buffers for raptors, even if outside of the nesting season, is not adequate to maintain occupancy of nests and territories within the PAPA. Migratory sagebrush obligate songbirds are also impacted from development. Therefore, we recommend that the Bureau and Operators work with the Service to develop and implement a migratory bird protection and conservation plan to avoid and reduce impacts to migratory birds within and near development.

W-21 FA-2-33 The Service is also concerned with the quantity of produced water generated by the proposed action that will be disposed of into large evaporation ponds which could pose a risk to migratory birds and other wildlife. This increase in produced water generation could lead to the construction of additional oilfield wastewater disposal facilities with large evaporation ponds, which would increase the risk to migratory birds and other wildlife if not designed and managed properly. The Service is also concerned with the potential for migratory bird and other wildlife mortality in reserve pits with oil or sheens after drilling operations cease. Pitless or closed loop systems should be used when drilling with oil-based muds.

We look forward to working with you throughout the planning process for this project. If you have further questions regarding our comments or your responsibilities under the Act or other Federal laws and policies, please contact Kathleen Erwin of my staff at the letterhead address or phone (307) 367-5304.

cc: FWS, National Environmental Policy Coordinator, Denver, CO (Dave Carlson)
BLM, Statewide Listed Species Coordinator, Cheyenne, WY (J. Carroll)
WGFD, Statewide Habitat Protection Coordinator, Cheyenne, WY (V. Stelter)
WGFD, Non-Game Coordinator, Lander, WY (B. Oakleaf)

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