



United States Department of the Interior

FISH AND WILDLIFE SERVICE

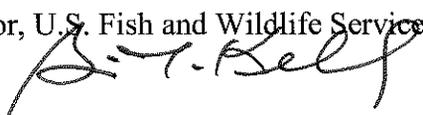
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Memorandum

To: Michelle Easley, Project Lead, Bureau of Land Management, Kemmerer Field Office, Kemmerer, Wyoming

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

Subject: Comments on the Draft Environmental Impact Statement for the Proposed Moxa Arch Infill Gas Development Project

Thank you for providing the U.S. Fish and Wildlife Service's (Service), Wyoming Field Office, with a copy of the Draft Environmental Impact Statement (DEIS) for the proposed Moxa Arch Infill Gas Development (Moxa Arch) project, received in our office on October 15, 2007. The DEIS analyzes the potential impacts of drilling and production operations of natural gas wells and the associated access, roads, pipelines, and infrastructure proposed by EOG Resources and approximately 30 other operators in the project area. The operators propose infill drilling of approximately 1,861 new wells in the project area where approximately 1,400 wells have been previously authorized by the Bureau of Land Management (BLM). The project area encompasses approximately 744 square miles of mixed ownership of Federal, State, and private lands in T 15-23N, R 111-113W in Lincoln, Uinta, and Sweetwater counties, Wyoming. Seedskaadee National Wildlife Refuge is located on the northeastern edge of the Moxa Arch project area. Please note that comments in this letter pertain to general Service trust resources in the project area. For issues specific to Seedskaadee National Wildlife Refuge, please follow the refuge's guidance.

General Comments

Threatened and Endangered Species

The federally listed and candidate species that may occur in the Moxa Arch Project area and may be impacted by project actions, are the endangered black-footed ferret (*Mustela nigripes*), and the threatened Ute ladies'-tresses (*Spiranthes diluvialis*). Additionally, four endangered Colorado River fish species, the bonytail (*Gila elegans*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), and razorback sucker (*Xyrauchen texanus*), occur downstream of the Moxa Arch project area and will be affected by water use that results in depletions to the Colorado River system.

Black-footed Ferret: As documented in the DEIS, sixty-three percent of the Moxa Arch project area has been identified as suitable habitat for black-footed ferrets. This determination was based on the number and densities of prairie dog colonies. The BLM has documented that surveys for black-footed ferrets will be conducted in prairie dog colonies that have not been block-cleared, by the Service and the Wyoming Game and Fish Department, if ground disturbing activities are proposed in the area. If black-footed ferrets are found, no project related disturbances would be permitted within the prairie dog complex and all project related activities would be suspended. The Service agrees with this guidance. However, please also refer to the BLM's statewide programmatic consultation regarding black-footed ferrets for further analysis and documentation of BLM's binding conservation measures.

Ute Ladies'-tresses: As documented in the DEIS 11,333 acres of "low potential" habitat for Ute ladies'-tresses have been identified in the Moxa Arch project area. We recommend that the final EIS clarify the term "low potential," and whether all 11,333 acres are considered to be "low potential" habitat. Please also refer to the BLM statewide programmatic consultation regarding Ute ladies'-tresses for further analysis and documentation of the BLM's binding conservation measures.

Colorado River Fish: As documented in the DEIS, tributaries of the Green River in the Moxa Arch project area flow into the Colorado River. Water used for drilling wells will be taken from the Blacks Fork, Hams Fork, Green River, and commercial or privately owned water source wells. Produced water may be confined to storage tanks prior to transport by water hauling trucks to disposal facilities. Produced water will be disposed of via subsurface injection, surface evaporative pits, or will be used in subsequent drilling operations. Please be advised that water depletions from the Colorado River system will affect the endangered bonytail, Colorado pikeminnow, humpback chub, and razorback sucker, and may contribute to the destruction or adverse modification of designated critical habitat, thus prompting formal consultation with the Service pursuant to the Endangered Species Act (Act) of 1973, as amended (50 CFR §402.13).

Candidate Species

Yellow-billed Cuckoo: As documented in the DEIS, the yellow-billed cuckoo (*Coccyzus americanus*) is a candidate species that may occur in the Moxa Arch project area. The population of the yellow-billed cuckoos west of the Continental Divide has been identified as a distinct population segment (DPS) that is unique and important to the species as a whole. In Wyoming, the cuckoo is dependent on large woody, riparian areas that combine both a dense shrubby understory for nesting and a cottonwood overstory for foraging. All sightings of yellow-billed cuckoos in the DPS, west of the Continental Divide, in Wyoming should be reported to the Service's Wyoming Field Office.

Migratory Birds

Under the Migratory Bird Treaty Act (MBTA), 16 U.S.C. 703 and the Bald and Golden Eagle Protection Act (BGEPA), 16 U.S.C. 668, the BLM has a mandatory obligation to protect migratory birds, including eagles and other raptors which may occur on lands under their jurisdiction. The BLM should notify all operators of their responsibilities to comply with the MBTA and BGEPA. Additionally, the Service recommends that BLM implement the strategies

outlined in the Memorandum of Understanding under the Executive Order 13186 to promote the conservation of migratory bird populations and their habitats.

Environmental Contaminants

The DEIS documents that produced water will be generated by the proposed action. Please estimate the amount of produced-water generated and the amount that would be disposed of in evaporation ponds. Please also assess the indirect effects of disposing water in evaporation ponds, and if additional commercial or centralized oilfield wastewater disposal facilities will need to be constructed to handle the volume of wastewater.

Sensitive Species

Greater Sage-grouse: As documented in the DEIS, suitable habitat for breeding, brood-rearing and winter-feeding occurs throughout the Moxa Arch project area. Approximately 6,200 acres of greater sage-grouse (*Centrocercus urophasianus*) habitat is already disturbed by oil and gas development activities. As of spring, 2006, forty-one active leks occur in the Moxa Arch project area. The Service recommends that no project activities that exacerbate habitat loss or degradation be permitted in important greater sage-grouse habitats. In 2000, the U.S. Forest Service, the BLM, and the Service signed a 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 sage-grouse conservation, and these commitments should be considered in project planning. Unless site-specific information is available, greater sage-grouse habitat should be managed following the WAFWA guidelines.

Specific Comments

DEIS, Volume 1, Chapter 2, Page 3, Section 2.3.1, Paragraph 4, Sentence 3: It is stated that “Produced water will be transported by truck to water disposal wells or evaporation ponds,” and, in Chapter 3, Page 31, Section 3.4.2.1, Paragraph 2, that “Produced water from oil and gas wells is often confined to a storage tank prior to transport by water hauling trucks to disposal facilities. It is typically disposed of via subsurface injection or surface evaporative pits, or it may be used in subsequent drilling operations. Disposal facilities, including injection wells, currently occur in the MAA.” *Service Comment:* Please specify the number of existing disposal facilities, injection wells and evaporation ponds in the project area and whether new facilities will be constructed to handle the volume of water generated by the proposed action.

DEIS, Volume 1, Chapter 2, Page 1, Section 2.1, Paragraph 3, Sentence 1: It is stated that “Total existing disturbance in the MAA was estimated to be approximately 13,149 acres. This includes the 8,073 acres estimated for oil and gas drilling and exploration activities added to the 5,076 acres of other disturbance...” Furthermore, on Page 8, Section 2.3.2, Paragraph 2, Sentences 6 and 7, it is stated that “The operators previously committed to extensive reclamation and revegetation that has not been successful for a variety of reasons including poor practices, low reclamation success, drought, etc.” Additionally, it is reported that the disturbance per well pad was underestimated in the 1997 Record of Decision. *Service Comment:* The Service encourages the BLM to establish an enforceable protocol to ensure that operators effectively restore wildlife habitats disturbed by the Moxa Arch Infill. Areas of disturbance should be revegetated as

quickly and as thoroughly as possible to inhibit infestations of invasive weeds, loss of topsoil and to restore habitat for wildlife. It is important for operators to determine requirements to ensure successful revegetation at a site prior to implementation. Soil properties may provide a good indication of the likelihood for revegetation success. Problematic sites may require more intense site preparation, maintenance, and soil amendments.

DEIS, Volume 1, Chapter 3, Page 40, Section 3.6.4, Paragraph 4: It is stated that “Some of the invasive, non-native, and noxious plant species require disturbance to become established and some do not. What appears to be more critical is the transportation of seeds along roads via vehicles and construction equipment.” Mitigation for noxious weed issues is discussed I Chapter 4, Page 36, Section 4.7.1.4, where it is stated “Increasing the amount of field automation ... would reduce traffic and ... would likely reduce the spread of noxious weeds.” *Service Comment:* The Service recommends that the BLM educate transport drivers and equipment operators about invasive weed concerns. Methods to control the spread of weeds may include: (1) thoroughly cleaning transport vehicles and construction equipment via high pressure washing prior to the initial movement of those units to the general construction site; (2) removing or treating seed sources and other viable reproducing plant parts that could be spread by construction disturbance or by passing vehicles; (3) using gravel and fill from inspected, weed-free sources; (4) identifying and controlling noxious weeds along access roads before construction equipment moves into a relatively weed-free areas; (5) minimizing roadside vegetation removal during construction, maintenance and other ground-disturbing activities; (6) using certified weed-free straw and mulch, or weed-free fiber roll barriers, for erosion control; (7) closing active road construction sites that are in relatively weed-free areas to vehicles not involved with construction; (8) monitoring and treatment of areas of noxious weeds; and (9) training management and workers to identify noxious weeds and to understand the importance of noxious weed control and measures to minimize their spread.

DEIS, Volume 1, Chapter 4, Page 40, Section 4.8.2.1, Paragraph 2: It is stated that the Wyoming Game and Fish Department “has determined that noise levels greater than 49 dBA within breeding habitat from April 1 through June 30 negatively impacts non-game birds, especially at night.” *Service Comment:* The Service recommends that noise not exceed 49 dBA in important nesting habitat during the nesting season. For example, if compressor stations are to be built, the Service recommends that they should be situated or buffered such that noise levels are less than 49 dBA in nesting habitat.

DEIS, Volume 1, Chapter 4, Page 42, Section 4.8.2.3.5: It is stated that “Short-term impacts would be significant for raptors under Alternative C.” *Service Comment:* Under the MBTA and the BGEPA, the BLM has a mandatory obligation to protect migratory birds, including eagles and other raptors, on lands under their jurisdiction, and both acts prohibit take without a permit.

DEIS, Volume 1, Chapter 4, Page 42, Section 4.8.2.4: The BLM documents that project-related activity will be restricted within 0.5 miles of active raptor nests, except for ferruginous hawk and bald eagle nests which will have a 1 mile buffer, between February 1 and August 15. The BLM considers a nest to be active if it has been used in the past 3 years. *Service Comment:* The Service supports these guidelines, except that as per the draft National Bald Eagle Management Guidelines, the Service recommends continued protection of inactive bald eagle nests for 5 years,

excluding nests where special circumstances make their reuse unlikely. Additionally, in the second paragraph of this section the BLM states that “Seasonal restrictions would be evaluated on a case-by-case basis, and may be relaxed or waived at the discretion of the BLM.” Please elaborate on what is meant by the statement “Seasonal restrictions would be evaluated on a case-by-case basis, and may be relaxed or waived at the discretion of the BLM.” The Service recommends that the BLM collect site-specific information to help document what spatial and seasonal buffers will be necessary to protect nests.

DEIS, Volume 1, Chapter 4, Page 42, Section 4.8.2.4: It is stated that a density of more than 4.7 well pads within 2 miles of a lek resulted in a decrease use of the lek and decreased overall nesting success. *Service Comment:* Of the 41 leks in the Moxa Arch project area, all but 8 have more than 5 wells within 2 miles. Based on this information, the Service recommends that the BLM limit well pad development within 2 miles of these remaining 8 leks to less than 4.7 well pads or to densities that are supported by peer-reviewed research on sage-grouse. In general, the BLM should ensure that permitted actions do not intensify greater sage-grouse declines on either a local or range-wide level.

DEIS, Volume 1, Chapter 4, Page 55, Section 4.9.2.1, Paragraph 2, Sentence 5: It is stated that “Long-eared myotis mortality could also occur from accidental poisoning at open produced-water pits and tanks.” *Service Comment:* Please clarify how bats would be poisoned at water pits and tanks. Bats, as well as birds and mammals may approach the water to drink and then fall into the pits if the banks of the pits are oiled. Insects entrapped in the oil may also attract bats, songbirds, and small mammals. Wildlife entrapped in the pits die from exposure and exhaustion. Animals that escape can die from starvation or the toxic effects of oil they have ingested.

DEIS, Volume 1, Chapter 4, Page 29, Section 4.5.2.3, Paragraph 2: It is stated that “Leakage of fluids from reserve pits and related impacts would be minimal from lined pits. Potential for impacts would be greater for unlined pits; however, impacts from leakage from unlined pits would be unlikely given restrictions regarding design and location of such pits. Potential impacts of pit leakage would be minimal and the same for all alternatives.” *Service Comment:* Synthetically-lined pits would prevent the contamination of groundwater and soils and, therefore, the Service recommends that they be used.

DEIS, Volume 1, Chapter 4, Page 55, Section 4.9.2.1.6, Sentences 4 and 5: It is stated that “Amphibians may attempt to use open produced-water pits for breeding, which could lead to accidental poisoning. Installation of silt fences around pits may reduce this potential impact.” *Service Comment:* Please explain how amphibians would be poisoned at water pits and tanks. Additionally, specify the toxicant issues and how silt fences will reduce impacts to amphibians.

DEIS, Volume 2, Appendix B, Page 6, Section 3.7, Paragraph 4, Sentences 3-7: It is stated that “No hazardous substances will be placed in the reserve pit. Reserve pits will be constructed so as not to leak, break, or allow discharge, and in accordance with APD COAs. The reserve pit will be fenced on three sides during drilling operations, and on the fourth side when the rig moves off site. Fences will be constructed according to BLM requirements and as described in Onshore Order No.7.” *Service Comment:* The Service recommends that any oil or visible sheens in reserve pits be removed immediately to prevent wildlife mortality. If the oil or sheens cannot be

removed, then the pit should be netted to exclude wildlife.

DEIS, Volume 2, Appendix B, Page 7, Section 4.0, Paragraph 3, Sentences 2 and 3: It is stated that “Hydraulic fracture stimulation is required on the majority of wells in the Project Area in order to enhance productivity. Stimulation fluids recovered during flow back and subsequent production operations are temporarily contained in the reserve pit or in tanks on location.”

Service Comment: Please specify if hydraulic fracturing fluids will contain surfactants. If hydraulic fracturing fluids are flushed into reserve pits, surfactants in the fluids could pose a risk to birds. Surfactants reduce the surface tension of water and allow water to penetrate through feathers, subjecting birds to hypothermia (Stephenson 1997). The loss of water repellency of feathers causes birds to become water logged, and the loss of buoyancy may result in drowning.

DEIS, Volume 2, Appendix B, Page 8, Section 4.0, Paragraph 4, Sentence 9: It is stated that “Fluids (primarily water) recovered during flow back operations are contained in the reserve pit or in tanks on location until they are disposed of at evaporation pits or disposal wells.”

Service Comment: Please specify if the hydraulic fracturing fluids will contain surfactants. If the hydraulic fracturing fluids contain surfactants and are disposed of into evaporation ponds, surfactants in the fluids could impact birds. Please see the previous comment. Fracturing fluids disposed of into commercial or centralized oilfield wastewater disposal facilities may cause bird mortality at facilities receiving these fluids. We recommend the BLM consider options for the disposal of hydraulic fracturing fluids containing surfactants that will avoid bird mortality.

DEIS, Volume 2, Appendix B, Page 9-10, Section 9.0, Paragraph 1, Sentence 9: It is stated that “Produced water may be confined to a storage tank prior to transport by water hauling trucks to disposal facilities. Produced water will be disposed of via subsurface injection, surface evaporative pits, or will be used in subsequent drilling operations. Disposal facilities, including injection wells and evaporative ponds, requiring new construction are anticipated to be built outside of the Project Area.”

Service Comment: Please estimate the number of new commercial or centralized oilfield wastewater disposal facilities that will be constructed. Evaporation ponds, like oil field production pits, pose a risk to wildlife if they contain oil, sheens or paraffin on the surface. The following conditions make oil field wastewater disposal evaporation ponds a risk to wildlife: (1) accumulation of oil on the surface and berms of ponds; (2) visible sheens on the surface of the ponds; (3) oil and water separation on the main evaporation pond; (4) lack of structures to prevent entry of birds and other wildlife; and (5) concentrations of salts that may result in hypersaline conditions. High concentrations of salts can pose a risk to birds. Birds on ponds with hypersaline water can ingest brine and die from sodium toxicity. During cooler temperatures, sodium in the hypersaline water can crystallize on the feathers of birds. Sodium crystals destroy the thermoregulatory and buoyancy functions of feathers resulting in death from hypothermia or drowning. Birds preening the salt crystals off their feathers can ingest salt. Ingestion of as little as 4 g of salt crystals (NaCl) may 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, resulting in drowning as the bird's head droops into the water.

DEIS, Volume 2, Appendix D, Page 20, Section 4.1.1.3, Sentences 1-4: It is stated that “construction will be restricted within 500 feet of streams and in wet meadows, springs and seeps.” However, it further stated that “Potential stream crossings could not be estimated at this

time, but they would be analyzed on a project-specific basis...” *Service Comment:* Please clarify how development activities may or may not impact streams, wet meadows, springs or seeps and what protective measures will be implemented.

DEIS, Volume 2, Appendix D, Page 20, Section 4.1.1.3, Sentence 6: It is stated that “If pipelines are proposed to cross Ute ladies’-tresses habitat, surveys would be required prior to crossings.” *Service Comment:* The Service recommends that the BLM also document project actions that may impact potential downstream habitat, e.g., activities that result in increased sedimentation or altered stream flow, and survey those downstream reaches. Please note that Ute ladies’-tresses are difficult to survey for due to their unpredictability in flowering and subsequent rapid desiccation. Additionally, during unfavorable conditions Ute ladies-tresses may not flower or even emerge above ground, potentially making the results of one-year surveys inconclusive.

DEIS, Volume 2, Appendix D, Page 20, Section 4.1.1.2, Sentence 4: It is stated that “... if water depletions over 100 acre-feet annually occur, consultation with the USFWS would need to occur and appropriate mitigation decided by that agency.” *Service Comment:* Please be advised that formal consultation with the Service is required for all projects that may lead to depletions of water, in any amount, to the Colorado River system. Any actions that may result in water depletions should be identified. The document should include: an estimate of the amount and timing of average annual water use (both historic and new uses) and methods of arriving at such estimates; location of where water use or diversion occurs as specifically as possible; if and when the water will be returned to the system; and what the water is being used for. Note that if the project has peculiarities or oddities, the Service may have more specific questions regarding the potential consumptive use of water.

DEIS, Volume 2, Appendix D, Page 20, Section 4.1.1.4, Sentences 1-3: It is stated that “construction will be restricted within 500 feet of streams and in wet meadows, springs and seeps, and therefore there will be no effects to the yellow billed cuckoo.” However, the third sentence addresses the possibility of project disturbance at stream crossings. *Service Comment:* To avoid impacts to the yellow-billed cuckoo, the Service recommends that project-related activities do not occur during the nesting season in riparian woodlands that have a dense shrub understory and a cottonwood overstory.

DEIS, Volume 2, Appendix D, Page 20, Section 4.1.1.4, Sentence 4: It is stated that “If pipelines are proposed to cross yellow-billed cuckoo habitat adjacent to streams, surveys would be required...” *Service Comment:* Please note that surveys for yellow-billed cuckoos are difficult due to the secretive nature of the species and its short and variable nesting period. Call-back surveys are the only effective survey method and these may need to be repeated during the nesting season, possibly stressing nesting birds. Therefore, the Service recommends that project actions be avoided in yellow-billed cuckoo habitat during the nesting season.

DEIS, Volume 2, Appendix D, Pages 21-22, Section 5.0: Recommended conservation measures for threatened and endangered species are listed here. These measures include: (1) black-footed ferret surveys of prairie dog complexes as per Service guidelines, (2) placement of construction outside of prairie dog colonies when possible and, when not possible, a commitment to minimize the number of burrows disturbed, (3) immediate suspension of project activities if black-footed

ferrets are documented in the project area, (4) operator led education of employees about distemper and the need to prohibit pets from work sites, (5) reporting of observations of black-footed ferrets and carcasses to the Service or BLM within 24 hours, (6) driver training and reduced speed limits to minimize collisions with wildlife (7) utilization of remote monitoring at project facilities to reduce the amount of human activities (8) use of best management practices to avoid changes in water quality and quantity in project area waterways, and (9) notification of any Federally-listed species observed and immediate discontinuation of project activities until the Service is consulted. *Service Comment:* The Service agrees with these measures, and recommends that BLM not only reduce impacts to prairie dog habitat by locating project actions outside of prairie dog colonies but also consider locating project actions so that the connectivity of prairie dog habitat is maintained.

DEIS, Volume 2, Appendix D, Page 23, Section 7.24.1.1.2, Sentence 4: It is stated that "...project-related water depletions resulting from implementation of the alternatives may affect but are not likely to adversely affect the Colorado River fishes." *Service Comment:* Federal project actions that lead to depletions to the Colorado River system are considered adverse effects and require initiation of formal consultation with the Service. However, only those projects that result in an average annual depletion of 100-acre-feet, or greater, are subject to a fee, as described in the Service's 1994 biological opinion regarding the Recovery Implementation Program Recovery Action Plan for the Colorado River. Records should include the average annual depletions for the entire project. Record keeping can be facilitated by oil and gas operators in the Moxa Arch project area tracking their own company's water use.

Thank you for the opportunity to comment on the Moxa Arch Infill Gas Development Project Draft Environmental Impact Statement. If you have further questions regarding our comments, please contact Trish Sweanor at the letterhead address or phone (307)772-2374, extension 239.

Literature Cited

Meteyer C., Dubielzig R., Dein F., Baeten L., Moore M., Jehl J. Jr and K. Wesenberg. 1997. Sodium toxicity and pathology associated with exposure of waterfowl to hypersaline playa lakes of southeast New Mexico. *Journal of Veterinary. Diagnostic Investigations.* 9: 269-280

Stephenson, R. 1997. Effects of oil and other surface-active organic pollutants on aquatic birds. *Environmental Conservation* 24(2):121-129.

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