

**DECISION RECORD  
FOR  
XTO Energy, INC.  
H.D.U. Federal Oil POD Addition  
ENVIRONMENTAL ASSESSMENT- WY-070-10-046**

**DECISION:** Is to approve Alternative C as described in the attached Environmental Assessment (EA) and to authorize the following Application for Permit to Drill (APD) for XTO Energy, INC.:

	Well name	Well #	TWP	RNG	Section	QTR	Lease #
1	HDU OIL ADD HDU	0441*	44N	75W	4	NESW	WYW48001
2	HDU OIL ADD HDU	0442	44N	75W	4	SENE	WYW48001
3	HDU OIL ADD HDU	0443	44N	75W	4	SENE	WYW56952
4	HDU OIL ADD HDU	943	44N	75W	9	NESE	WYW39178
5	HDU OIL ADD HDU	1042	44N	75W	10	SWNW	WYW42607
6	HDU OIL ADD HDU	1043	44N	75W	10	NESW	WYW48000
7	HDU OIL ADD HDU	1044	44N	75W	10	SWNW	WYW42607
8	HDU OIL ADD HDU	3351	45N	75W	33	SWSE	WYW42094
9	HDU OIL ADD HDU	3352	45N	75W	33	SWNW	WYW43685
10	HDU OIL ADD HDU	3451	45N	75W	34	SWSW	WYW0314786

The following well and associated flow line, power, and access road listed below is deferred until the operator can demonstrate to the BLM Authorized Officer that a surface use agreement is still in effect with the surface owner L.D. Gilbertz. Upon demonstrating that a surface use agreement is still in effect the well and associated infrastructure will be approved accordingly:

**H.D.U. Federal Oil POD Addition**

	Well name	Well #	TWP	RNG	Section	QTR	Lease #
1	HDU OIL ADD HDU	1442	44N	75W	14	NENW	WYW42608

**Operator Committed Measures:**

As a result of the onsite, several mitigation measures proposed by the BLM were incorporated by the operator into the H.D.U. Federal Oil POD Addition plan. These changes were submitted on January 6, 2010, in an attachment to the MSUP labeled “Reclamation Plan” (4.10 Reclamation) and “Best Management Practices” (Appendix 4.7). The Reclamation Plan and Management Practices include specific details on locating wells and infrastructure to reduce impacts to soils and wildlife.

**Site-Specific Mitigation Measures:**

Conditions of Approval have been applied to this project to mitigate resources impacts. For a complete description of all COA’s associated with this approval, see section 2.4 in the attached EA. COA’s for the H.D.U. Federal Oil POD Addition have been applied to reduce or mitigate impacts to the following resources:

- Erosive soils
- Wildlife, including burrowing owls, mountain plover, raptors, sage-grouse, and sharp-tailed grouse

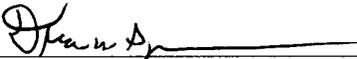
This approval is subject to adherence with operating plans and mitigation measures contained in the Surface Use Plan of Operations and Drilling Plans in the APD. This approval is also subject to operator compliance with all mitigation and monitoring requirements contained within the Powder River Oil and Gas Project Final Environmental Impact Statement and Resource Management Plan Amendment (PRB EIS) approved April 30, 2003 and adherence with the attached Conditions of Approval.

**RATIONALE:** The decision to authorize the proposed action will not result in any undue or unnecessary environmental degradation. The lessee has the right to develop their existing lease provided no significant adverse or irreversible impacts occur to critical resources. Mitigation measures from the range of alternatives were selected to best meet the purpose and need, and will be applied by the BLM to alleviate environmental impacts.

The proposed action is in conformance with the Powder River Oil and Gas Project EIS and Resource Management Plan Amendment (PRB FEIS) approved April 30, 2003 and the Approved Resource Management Plan for the Public Lands Administered by the Bureau of Land Management (BLM), Buffalo Field Office, April 2001.

**ADMINISTRATIVE REVIEW AND APPEAL:** Under BLM regulations, this decision is subject to administrative review in accordance with 43 CFR 3165. Any request for administrative review of this decision must include information required under 43 CFR 3165.3(b) (State Director Review), including all supporting documentation. Such a request must be filed in writing with the State Director, Bureau of Land Management, P.O. Box 1828, Cheyenne, Wyoming 82003, no later than 20 business days after this Decision Record is received or considered to have been received.

Any party who is adversely affected by the State Director's decision may appeal that decision to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

  
\_\_\_\_\_  
Field Manager

6/3/10  
\_\_\_\_\_  
Date

**FINDING OF NO SIGNIFICANT IMPACT  
FOR  
XTO Energy, INC.  
H.D.U. Federal Oil POD Addition  
ENVIRONMENTAL ASSESSMENT- WY-070-10-046**

**FINDING OF NO SIGNIFICANT IMPACT:**

On the basis of the information contained in the EA, and all other information available to me, it is my determination that: (1) the implementation of Alternative C will not have significant environmental impacts beyond those already addressed in PRB EIS to which the EA is tiered; (2) Alternative C is in conformance with the Buffalo Field Office Resource Management Plan (1985, 2001); and (3) Alternative C does not constitute a major federal action having a significant effect on the human environment. Therefore, an environmental impact statement or a supplement to the existing environmental impact statement is not necessary and will not be prepared.

This finding is based on my consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR '1508.27), both with regard to the context and to the intensity of the impacts described in the EA.

**CONTEXT:**

Mineral development (coal, oil and gas, bentonite, and uranium) is a long-standing and common land use within the Powder River Basin. More than one fourth of the nation's coal production comes from the Powder River Basin. The PRB FEIS reasonably foreseeable development predicted and analyzed the development of 51,000 CBNG wells and 3,200 oil wells. The additional Oil/Gas development described in Alternative C is insignificant within the national, regional, and local context.

**INTENSITY:**

The implementation of Alternative C will result in beneficial effects in the forms of energy and revenue production however; there will also be adverse effects to the environment. Design features and mitigation measures have been included within Alternative C to prevent significant adverse environmental effects.

The preferred alternative does not pose a significant risk to public health and safety. The geographic area of the POD does not contain unique characteristics identified within the 1985 RMP, 2003 PRB FEIS, or other legislative or regulatory processes.

Relevant scientific literature and professional expertise were used in preparing the EA. The scientific community is reasonably consistent with their conclusions on environmental effects relative to oil and gas development. Research findings on the nature of the environmental effects are not highly controversial, highly uncertain, or involve unique or unknown risks.

CBNG development of the nature proposed with this POD and similar PODs was predicted and analyzed in the PRB FEIS; the selected alternative does not establish a precedent for future actions with significant effects.

There are no cultural or historical resources present that will be adversely affected by the selected alternative. No species listed under the Endangered Species Act or their designated critical habitat will be adversely affected. The selected alternative will not have any anticipated effects that would threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

  
Field Manager

6/3/10  
Date

**BUREAU OF LAND MANAGEMENT  
 BUFFALO FIELD OFFICE  
 ENVIRONMENTAL ASSESSMENT  
 XTO Energy, INC.  
 H.D.U. Federal Oil POD Addition  
 EA# - WY-070-10-046**

**INTRODUCTION**

This site-specific analysis tiers into and incorporates by reference the information and analysis contained in the *Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project* (PRB FEIS), #WY-070-02-065 (approved April 30, 2003), and the PRB FEIS Record of Decision (ROD) pursuant to 40 CFR 1508.28 and 1502.21. This document is available for review at the BLM Buffalo Field Office (BFO). This project environmental assessment (EA) addresses site-specific resources and impacts that were not covered within the PRB FEIS.

**1. PURPOSE AND NEED**

The purpose of the proposed action is to explore, develop and produce oil and gas reserves conducted under the rights granted by a Federal oil and gas lease, as required in 43 CFR 3160, all Onshore Orders, and The Mineral Leasing Act, as amended and supplemented, (30 U.S.C. 181 *et seq.*).

The need for the action is the requirement to obtain approval for the development of an Oil and Gas Lease through an Application for Permit to Drill (APD) on public lands managed by the Bureau of Land Management under Onshore Order No. 1, pursuant to the authority of the Mineral Leasing Act, as amended and supplemented, (30 U.S.C. 181 *et seq.*) and prescribed in 43 CFR Part 3160.

Decision to be Made: The BLM will decide whether or not to approve the proposed development of oil and gas resources on the federal leasehold, and if so, under what terms and conditions.

**1.1. Conformance with Applicable Land Use Plan and Other Environmental Assessments:**

The proposed action conforms to the terms and the conditions of the 1985 Buffalo RMP, the 2001 Approved RMP, the 2003 PRB FEIS, and the PRB FEIS ROD as required by 43 CFR 1610.5. The BFO RMP is currently under revision.

**2. ALTERNATIVES INCLUDING THE PROPOSED ACTION**

**2.1. Alternative A - No Action**

This alternative would consist of no new federal wells. The Department of Interior’s authority to implement a “no action” alternative that precludes development is limited. An oil and gas lease grants the lessee the “right and privilege to drill for, mine, extract, remove, and dispose of all oil and gas deposits” in the lease lands, “subject to the terms and conditions incorporated in the lease.” The No Action Alternative is further described in the PRB FEIS, Volume 1, pages 2-54 through 2-62.

**2.2. Alternative B Proposed Action**

**PROJECT NAME:** H.D.U. Federal Oil POD Addition

**WELL NAME/#/LEASE/LOCATION:**

	Well name	Well #	TWP	RNG	Section	QTR	Lease #
1	HDU OIL ADD HDU	0441*	44N	75W	4	NESW	WYW48001

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11	HDU OIL ADD HDU	1442	44N	75W	14	NENW	WYW42608

**OPERATOR/APPLICANT:** XTO Energy, INC.

**AFFECTED SURFACE OWNERS:** Ron Schlautmann, L.D. Gilbetz, and John O. Christensen

**COUNTY:** Campbell

The proposed action is to drill and develop oil/gas wells. The action would be subject to the attached Conditions-of-Approval, for drilling of an oil/gas well on (private surface/federal mineral lands) within the Buffalo Field Office jurisdiction.

For a detailed description of design features and construction practices associated with the proposed action, refer to the Surface Use Plan (SUP) and Drilling Plan included with the APD. Also see the subject APD for maps showing the proposed well location and associated facilities described above.

Implementation of committed mitigation measures contained in the SUP and Drilling Plan, in addition to the Standard Conditions of Approval (COAs) contained in the PRB FEIS Record of Decision Appendix A, are incorporated and analyzed in this alternative.

Additionally, the Operator, in their APD, has committed to:

1. Comply with all applicable Federal, State and Local laws and regulations.
2. Obtain the necessary permits from other agencies for the drilling, completion and production of these wells including water rights appropriations, and relevant air quality permits.
3. The Operator has certified that a Surface Use Agreement has been reached with the Landowner(s).
4. The Operator has certified that a copy of the SUP has been provided to the relevant Landowner(s).

### **2.3. Alternative C – Environmentally Preferred**

Alternative C represents a modification of Alternative B based on the operator and BLM working cooperatively to reduce environmental impacts. The description of Alternative C is the same as Alternative B with the addition of the project modifications identified by BLM and the operator at on-site visits, following the initial project proposal. Alternative C represents BFO's efforts to maintain proposed spacing and infrastructure requirements consistent with the purpose and need. It incorporates sage-grouse habitat mapping, site verification of habitat suitability, and includes mitigation to reduce environmental effects to multiple resources. The specific changes identified for the H.D.U. Federal Oil POD Addition are listed below under 2.3.1:

The following well and associated flow line, power, and access road listed below is deferred until the operator can demonstrate to the BLM Authorized Officer that a surface use agreement is still in effect with the surface owner L.D. Gilbertz. Upon demonstrating that a surface use agreement is still in effect the well and associated infrastructure will be approved accordingly:

**H.D.U. Federal Oil POD Addition**

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1	HDU OIL ADD HDU	1442	44N	75W	14	NENW	WYW42608

**Operator Committed Measures:**

As a result of the onsite, several mitigation measures proposed by the BLM were incorporated by the operator into the H.D.U. Federal Oil POD Addition plan. These changes were submitted on January 6, 2010, in an attachment to the MSUP labeled “Reclamation Plan” (4.10 Reclamation) and “Best Management Practices” (Appendix 4.7). The Reclamation Plan and Management Practices include specific details on locating wells and infrastructure to reduce impacts to soils and wildlife.

**2.3.1. Changes as a result of the on-sites**

Well Name/#	Aliquot	Sec.	Well Notes
HDU 0442	SENW	4	The well will utilize the adjacent existing Over Head Power (OHP) and an existing pipeline corridor for the access and utilities to the west of the location.
HDU 0443	SENE	4	Moved the well approximately 100 feet NE to avoid the drainage to the south. Changed the well pad orientation to best fit the surrounding topography by turning the location counter clockwise to the north. The new location will fit between the adjacent existing utility corridor to the east and the OHP to the west. The flow line will corridor with the access road. The OHP will tie into the existing adjacent OHP to the west.
HDU 943	NESE	9	The operator will utilize the existing infrastructure for the utility corridor, access, and power; everything will go to the north.
HDU 1042	SWNW	10	The OHP will consist of approximately two new poles off of the existing. The access was changed to use the existing pipeline corridor. There is an adjacent well approximately 600 feet NE of the proposed location where the flow line will be routed to.
HDU 1043	NWSW	10	The flow line will corridor along the main corridor. The power will be brought in from the NW off the existing OHP and will only require one new pole.
HDU 3351	SWSE	33	The operator will utilize the reclaimed corridor and location. The flow line is already in place and will be utilized.
HDU 3352	SWNW	33	The landowner expressed his concerns regarding reclamation and topsoil depth. The power will come in from the east, and the flow line will go SE of the location.
HDU 3451	SWSW	34	The power will be brought in from the east from approximately 3/4 of a mile. The flow line will corridor along the main road.

**DESCRIPTION OF PROPOSED MITIGATION MEASURES:**

Implementation of committed mitigation measures contained in the Surface Use Plan of Operations and Drilling Plan, in addition to the following Conditions-of-Approval, would ensure that no adverse

environmental impacts would result from approval of the proposed action:

### **Conditions of Approval**

#### **2.4. Programmatic and Site specific mitigation measures, Alternative C**

##### **2.4.1. Programmatic mitigation measures identified in the PRB FEIS ROD**

Programmatic mitigation measures are those, determined through analysis, which may be appropriate to apply at the time of APD approval if site specific conditions warrant. These mitigation measures can be applied by BLM, as determined necessary at the site-specific NEPA APD stage, as COAs and will be in addition to stipulations applied at the time of lease issuance and any standard COA.

##### **2.4.2. Wildlife**

1. For any surface-disturbing activities proposed in sagebrush shrublands, the Companies will conduct clearance surveys for sage grouse breeding activity during the sage grouse's breeding season before initiating the activities. The surveys must encompass all sagebrush shrublands within 0.5 mile of the proposed activities.
2. The Companies will locate facilities so that noise from the facilities at any nearby sage grouse or sharp-tailed grouse display grounds does not exceed 49 decibels (10 dBA above background noise) at the display ground.

##### **2.4.3. Air Quality**

1. During construction, emissions of particulate matter from well pad and resource road construction will be minimized by application of water, or other dust suppressants, with at least 50 percent control efficiency. Roads and well locations constructed on soils susceptible to wind erosion could be appropriately surfaced or otherwise stabilized to reduce the amount of fugitive dust generated by traffic or other activities, and dust inhibitors (surfacing materials, non-saline dust suppressants, and water) could be used as necessary on unpaved collector, local and resource roads that present a fugitive dust problem. The use of chemical dust suppressants on BLM surface will require prior approval from the BLM authorized officer.

##### **2.4.4. Site specific mitigation measures**

All changes made at the onsite will be followed. They have all been incorporated into the operator's POD.

### **Surface Use**

1. Upon completion of the wells; the operator will be required to stabilize and bring the location into the production size of 150x150 feet (per the submitted design Appendix 4.5 Well Pad Cut and Fill) within 180 days. *\*The disturbance areas identified have poor reclamation suitability that shall be stabilized in a manner which eliminates accelerated erosion until a self-perpetuating native plant community has stabilized the site in accordance with the Wyoming Reclamation Policy. Stabilization efforts include mulching, matting, soil amendments, etc. (For further detail reference the Reclamation Management Plan April 30, 2010).*
2. A 20' foot vegetated buffer must be maintained on the location for the following well due to slope and the proximity to adjacent drainages: HDU 1044.
3. HDU 3351: A cattle guard/gate will need to be put in place to cross the fence south of the location.
4. HDU 1042: The operator will utilize the same existing power as the 1043 well.

5. HDU 1043: The operator will avoid the rancher's fence to the NW side of the location per landowner request.
6. HDU 1044: The fill slope of the pad on the south side will be silt fenced and stabilized upon being constructed.

**Wildlife**

The following conditions will minimize impacts to raptors:

- No surface disturbing activity will be allowed within ½ mile of the documented nest sites from February 1 through July 31, annually, prior to a raptor nest occupancy survey for the current breeding season. The timing restriction may be removed from inactive nests upon consultation with BLM. This timing restriction affects the following wells as well as nearby reservoirs and infrastructure: See table and map below.
- Surveys to document nest occupancy shall be conducted by a biologist following BLM protocol, between April 15 and June 30. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities. Surveys outside this window may not depict nesting activity. If a survey identifies active raptor nests, a 0.5 mile timing buffer will be implemented. The timing buffer restricts surface disturbing activities within 0.5 mile of occupied raptor nests from February 1 to July 31.

<b>BLM ID#</b>	<b>INFRASTRUCTURE</b>
10749,668,3123,671	Well #3352
3369	Well #3351
10748	Well #0443

The following conditions will minimize impacts to sage-grouse:

1. No surface disturbing activities are permitted between March 1-June 15 for the following well locations and their associated infrastructure located in sage-grouse nesting habitat: **1043, 1042, 1044, 0441, 0442, 0443, and 0943**. This condition will be implemented on an annual basis for the duration of surface disturbing activities.
2. A sage-grouse survey will be conducted for all known leks within 2 miles of the POD by a biologist following the most current WGFD protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist no later than July 31 of the current year.

**3. AFFECTED ENVIRONMENT**

The APD was received on June 13, 2008. A field inspection of the proposed well was conducted on November 5, 2009 by the following personnel.

<b>DATE</b>	<b>NAME</b>	<b>Agency</b>	<b>Title</b>
11/5/2009	Andy Perez	BLM	NRS
11/5/2009	Ted Hamersma	BLM	Civil/Road Tech
11/5/2009	Bill Ostheimer	BLM	Wildlife Biologist
11/5/2009	Ardeth Hahn	BLM	Archaeologist
11/5/2009	Jolene Schleicher	BLM	Archaeologist
11/5/2009	Vic Xuan	BLM	Petroleum Engineer
11/5/2009	Shirley Green	BLM	Energy Program Assistant
11/5/2009	L.D. Gilbertz	Landowner	

DATE	NAME	Agency	Title
11/5/2009	Ronald A. Schlants	Landowner	
11/5/2009	John Christensen	Landowner	
11/5/2009	Margo Ball	Pearl	Permitting
11/5/2009	Christi Haswell	Pearl	Permitting Manager
11/5/2009	Jim Bob Myers	Pearl	Engineer
11/5/2009	Wayne Stilwell	XTO	Production Foreman
11/5/2009	Chris Kosmicki	XTO	Regulatory Agent

This section describes the environment that would be affected by implementation of the Alternatives described in Section 2. Aspects of the affected environment described in this section focus on the relevant major issues.

### 3.1. Topographic Characteristics

H.D.U. Federal Oil POD Addition is located in eastern Campbell County, approximately 34 miles south of Gillette, Wyoming on US Highway 50. The POD lies approximately 10 miles southwest of Savageton, WY, on the Black and Yellow Road. The topography consists of moderately rough terrain with many ridges and deep draws. The elevation within the project area ranges from approximately 4700 to 5240 feet above sea level. Livestock grazing has been the primary historic land use within the project area. Oil development, existing fee developments, and ranching operations are the current land uses.

### 3.2. Vegetation & Soils

Species typical of short grass prairie comprise the project area flora. Two major vegetation and habitat types occur within the project area including Mixed-grass prairie, and Sagebrush grassland. Differences in dominant species within the project area vary with soil type, aspect and topography. The dominate species include Wyoming big sagebrush (*Artemisia tridentate* var. *wyomingensis*), big sagebrush (*Artemisia tridentate*), and silver sagebrush (*Artemisia cana*) mixed with various types of grasses. Plains cottonwoods (*Populus deltoids*) are also evident in some of the draw bottoms throughout the project area.

#### 3.2.1. Soils

Soils within the project area were identified from the *South Campbell county Survey Areas, Wyoming (WY 705)*. The soil survey was performed by the Natural Resource Conservation Service according to National Cooperative Soil Survey standards. The BLM uses county soil survey information to predict soil behavior, limitations, or suitability for a given activity or action. The agencies long term goal for soil resource management is to maintain, improve, or restore soil health and productivity, and to prevent or minimize soil erosion and compaction. Soil management objectives are to ensure that adequate soil protection is consistent with the resource capabilities. Many of the soils and landforms of this area present distinct challenges for development, and /or eventual site reclamation. Areas within the pod boundary is comprised of soils having poor reclamation suitability, the proponent planned their project and the BLM made further recommendations on the onsite to avoid those areas where possible, but disturbances within these areas will require the programmatic/standard COA's be complimented with a site specific performance based stabilization/reclamation COA. Overcoming the unfavorable properties or limitations requires special design, extra maintenance, and costly alteration.

**Table 3.1 Summary of Ecological Sites**

Ecological Site	Acres	Percent
Shallow Clayey (10-14 NP)	136.8	5%
LOAMY (15-17 NP)	26.4	1%
LOWLAND (10-14 NP)	150.0	5%

<b>Ecological Site</b>	<b>Acres</b>	<b>Percent</b>
Loamy (10-14) Northern Plains	1812.4	65%
SANDY (10-14 NP)	668.8	24%

### **3.2.2. Invasive Species**

State-listed noxious weeds and invasive/exotic plant infestations were discovered by a search of inventory maps and/or databases or during subsequent field investigation by the proposed project proponent and the BLM.

Specific species of concern include:

- Canada thistle is found throughout the POD.
- Scotch thistle was identified and found near existing roads and oil infrastructure throughout the POD area.
- Cheat grass has invaded the state of Wyoming, and has been identified occurring throughout the project area.

The operator has developed an Integrated Weed and Pest Management Plan.

The state-listed noxious weeds are listed in PRB FEIS Table 3-21 (p. 3-104) and the Weed Species of Concern are listed in Table 3-22 (p. 3-105).

### **3.3. Wildlife**

Wildlife species that occur in the Powder River Basin were identified in the PRB FEIS (pp. 3-113 to 3-206). A habitat assessment and wildlife inventory surveys of the project area were performed by WEST, Inc. in 2008. Surveys were for bald eagle and raptor nesting, greater sage-grouse and sharp-tailed grouse, black-tailed prairie dog colonies, mountain plover breeding and nesting habitat and activity, and habitat for federally listed species. Follow-up surveys for grouse and raptors were conducted in 2009 by Big Horn Environmental and Wildlife Resources. All surveys were conducted according to the Powder River Basin Interagency Working Group's protocols (available on the BFO internet website at [http://www.blm.gov/wy/st/en/field\\_offices/Bufalo/wildlife.html](http://www.blm.gov/wy/st/en/field_offices/Bufalo/wildlife.html)).

A BLM biologist conducted field visits on November 5, 2009. During that time, the biologist verified the wildlife survey information, evaluated impacts to wildlife resources, and recommended project modifications where wildlife issues arose.

In addition to the surveys and the onsite evaluation, the wildlife biologist also consulted databases compiled and managed by BLM BFO wildlife staff, the PRB FEIS, Wyoming Game and Fish Department datasets, and the Wyoming Natural Diversity Database (WYNDD) to evaluate the affected environment for wildlife species that may occur in the project area.

#### **3.3.1. Big Game**

Big game species expected to occur within the project area include pronghorn and mule deer. The affected environment for pronghorn is discussed in the PRB FEIS on pp. 3-117 to 3-122 and for mule deer on pp. 3-127 to 3-132.

WGFD data indicate that the project area contains winter yearlong range for pronghorn and yearlong range for mule deer. Populations of pronghorn and mule deer within their respective hunt areas are above WGFD objectives. The most current big game range maps are available from WGFD.

### 3.3.2. Aquatics

The northern quarter of the project area is drained to the north by ephemeral tributaries of Pumpkin Creek, an ephemeral tributary to the Powder River. The majority of the project area is drained by Mud Springs Creek, an ephemeral tributary to the Belle Fourche River. No springs were identified within the project area. Fish that have been identified in the Belle Fourche River watershed are listed in the PRB FEIS (3-156-159).

### 3.3.3. Migratory Birds

Migratory birds are those that migrate for the purpose of breeding and foraging at some point in the year. According to WO Instruction Memorandum No. 2008-050, BLM must include migratory birds in every NEPA analysis of actions that have the potential to affect migratory bird species of concern in order to fulfill its obligations under the Migratory Bird Treaty Act.

The WGFD Wyoming Bird Conservation Plan (Nicholoff 2003) identified three groups of high-priority bird species in Wyoming: Level I – those that clearly need conservation action, Level II – species where the focus should be on monitoring, rather than active conservation, and Level III – species that are not otherwise of high priority but are of local interest. Vegetation types that occur in the project area include shortgrass prairie and shrub-steppe. Many species that are of high management concern use these areas for their primary breeding habitats (Saab and Rich 1997). Nationally, grassland and shrubland birds have declined more consistently in the last 30 years than any other ecological association of birds (WGFD 2009). Species that may occur in these vegetation types in northeast Wyoming, according to the Wyoming Bird Conservation Plan, are listed in Table 3.2 and are grouped by Level as identified in the Plan.

**Table 3.2 Migratory bird species that occur in shortgrass prairie and shrub-steppe habitats in northeast Wyoming (Nicholoff 2003)**

Level	Species	Wyoming BLM Sensitive
Level I	Brewer's sparrow	Yes
	Ferruginous hawk	Yes
	Greater sage-grouse	Yes
	Long-billed curlew	Yes
	McCown's longspur	No
	Mountain plover	Yes
	Sage sparrow	Yes
	Short-eared owl	No
	Upland sandpiper	No
	Western burrowing owl	Yes
Level II	Black-chinned hummingbird	No
	Bobolink	No
	Chestnut-collared longspur	No
	Dickcissel	No
	Grasshopper sparrow	No
	Lark bunting	No
	Lark sparrow	No
	Loggerhead shrike	Yes
	Sage thrasher	Yes
	Vesper sparrow	No
Level III	Common poorwill	No
	Say's phoebe	No

The affected environment for migratory birds is discussed in the PRB FEIS (pp. 3-150 to 3-153). The discussion includes a list of habitat requirements and foraging patterns for the species listed above, with the exception of upland sandpipers, common poorwills, and Say's phoebes, which are discussed here.

Upland sandpipers prefer Great Plains grasslands, dryland grass pastures, hayfields, and alfalfa fields. They nest in grass-lined depressions in the ground and feed on insects and seeds on the ground where grasses are low and open. Common poorwills inhabit sparse, rocky sagebrush; open prairies; mountain-foothills shrublands; juniper woodlands; brushy, rocky canyons; and ponderosa pine woodlands. They prefer clearings, such as grassy meadows, riparian zones, and forest edges for foraging. They lay eggs directly on gravelly ground, flat rock, or litter of woodland floor. Nests are often placed near logs, rocks, shrubs, or grass for some shade. They feed exclusively on insects, catching them by leaping from the ground or a perch, or picking them up from the ground. Say's phoebes inhabit arid, open country with sparse vegetation, including shrub-steppe, grasslands, shrublands, and juniper woodlands. They nest on a variety of substrates such as cliff ledges, banks, bridges, eaves, and road culverts and often reuse nests in successive years. They eat mostly insects and berries.

### 3.3.4. Raptors

The affected environment for raptors is discussed in the PRB FEIS on pp. 3-141 to 3-148.

Four nests representing two raptor species are known within 0.5 miles of the project area: red-tailed hawks and ferruginous hawks. The affected environment for red-tailed hawks is discussed in the PRB FEIS on page 3-146. Ferruginous hawks are Wyoming BLM sensitive species and are discussed in the PRB FEIS on page 3-183.

Raptor nests within 0.5 miles of proposed project activities are listed in below. The clustered pattern of ferruginous hawk nests that includes nests 1074, 3369, and 668 suggest that these nest may be within a breeding territory (a group of nests that is defended by a single breeding pair). Surveys were not completed for all nests in 2009. Survey results for 2010 have not yet been received.

BLM ID	UTMs	Legal	Substrate	Year	Condition	Status	Species
643	423150E 4861079N	S2 T45N R76W	CTL	2009	Nest Gone	INAC	n/a
				1997	Unknown	ACTI	RETA
644	423273E 4862925N	S35 T46N R76W	CTL	2009	Good	ACTI	RETA
				2009	Good	INAC	n/a
				2009	Unknown	ACTI	RETA
				2008	Good	ACTI	GRHO
				2007	Good	ACTI	RETA
647	424118E 4855569N	S25 T45N R76W	CTL	2009	Good	ACTI	RETA
				2009	Nest Gone	INAC	n/a
				2009	Excellent	ACTI	RETA
				2006	Nest Gone	INAC	n/a
666	428236E 4851713N	S5 T44N R75W	GHS	2009	Good	INAC	n/a
				2006	Nest Gone	INAC	n/a
668	428392E 4853023N	S32 T45N R75W	ROC	2006	Nest Gone	INAC	n/a
				2004	Unknown	UNK	n/a
671	429022E 4854349N	S28 T45N R75W	MMS	2006	Nest Gone	INAC	n/a

BLM ID	UTMs	Legal	Substrate	Year	Condition	Status	Species
2239	431351E 4847778N	S22 T44N R75W	CTL	2009	Poor	INAC	n/a
				2009	Nest Gone	INAC	n/a
				2008	Nest Gone	INAC	n/a
				2007	Remnants	INAC	n/a
				2006	Good	ACTI	SWHA
				2005	Good	ACTI	SWHA
				2004	Good	ACTI	SWHA
3123	428331E 4853242N	S32 T45N R75W	ROC	2006	Nest Gone	INAC	n/a
				2004	Good	INAC	n/a
3137	424056E 4855790N	S25 T45N R76W	CTL	2009	Good	ACTF	RETA
				2009	Unknown	DNLO	n/a
				2009	Substrate Gone	DNLO	n/a
				2008	Good	INAC	n/a
				2006	Unknown	ACTI	RETA
				2004	Good	INAC	n/a
3367	423832E 4859359N	S12 T45N R76W	CTL	2009	Good	INAC	n/a
				2006	Good	ACTI	RETA
				2005	Good	ACTI	RETA
				2004	Nest Gone	INAC	n/a
3368	423168E 4861159N	S2 T45N R76W	CTL	2009	Good	ACTI	GRHO
				2006	Good	ACTI	RETA
				2005	Fair	ACTI	RETA
3369	428930E 4853031N	S33 T45N R75W	ROC	2009	Fair	INAC	n/a
				2005	Fair	INAC	n/a
					Fair	INAC	n/a
3371	426578E 4859415N	S7 T45N R75W	GHS	2009	Good	INAC	n/a
				2006	Good	INAC	n/a
				2005	Good	INAC	n/a
4014	431344E 4854772N	S27 T45N R75W	ELM	2009	Good	ACTI	SWHA
				2006	Unknown	ACTI	SWHA
				2005	Good	ACTI	UNRA
4381	423357E 4862794N	S35 T46N R76W	CTL	2009	Good	ACTI	GRHO
				2009	Good	ACTI	RETA
				2008	Good	ACTI	RETA
4383	424614E 4861004N	S1 T45N R76W	GHS	2009	Fair	INAC	n/a
				2006	Unknown	ACTI	FEHA
4384	425496E 4862011N	S6 T45N R75W	CTL	2009	Good	ACTF	RETA
				2009	Good	INAC	n/a
				2009	Unknown	ACTF	RETA
				2008	Good	ACTI	RETA

BLM ID	UTMs	Legal	Substrate	Year	Condition	Status	Species
10609	421055E 4860542N	S10 T45N R76W		2009	Good	ACTI	RETA
10610	421547E 4860973N	S3 T45N R76W		2009	Good	ACTI	SWHA
10611	422262E 4859544N	S11 T45N R76W		2009	Good	ACTI	RETA
10612	422270E 4859582N	S11 T45N R76W		2009	Poor	INAC	n/a
10613	423825E 4857426N	S24 T45N R76W		2009	Good	INAC	n/a
10614	424884E 4862159N	S1 T45N R76W		2009	Poor	INAC	n/a
10616	425020E 4861923N	S1 T45N R76W		2009	Fair	INAC	n/a
10617	425373E 4856813N	S19 T45N R75W		2009	Nest Gone	INAC	n/a
10618	431661E 4854548N	S27 T45N R75W		2009	Poor	INAC	n/a
10744	431359E 4849353N	S15 T44N R75W	ROK	2009	Excellent	ACTI	FEHA
10745	431532E 4851297N	S3 T44N R75W	GHS	2008	Excellent	ACTI	FEHA
10746	431604E 4849190N	S15 T44N R75W	GHS	2008	Unknown	INAC	n/a
10747	432467E 4850946N	S11 T44N R75W	GHS	2008	Unknown	INAC	n/a
10748	430653E 4851766N	S3 T44N R75W	POL	2009		ACTI	RETA
10749	428823E 4853516N	S33 T45N R75W	GHS	2008		INAC	n/a
10750	429511E 4855209N	S28 T45N R75W	GHS	2008	Unknown	INAC	n/a
10751	429439E 4855462N	S28 T45N R75W	GHS	2008	Unknown	ACTI	FEHA
Notes							
<ol style="list-style-type: none"> <li>1. ROC = Rock; MMS = man-made structure (powerline); GHS = Ground/Hillside</li> <li>2. ACTI = Active; DNLO = Did not locate; INAC = Inactive; OCCU = Occupied; UNK = Unknown;</li> <li>3. FEHA = Ferruginous hawk; UNK = unknown; RTHA = red-tailed hawk</li> </ol>							

### 3.3.5. Plains Sharp-tailed Grouse

Plains sharp-tailed grouse are discussed in this document because specific concerns for this species were identified during the scoping process for the PRB FEIS. The affected environment for plains sharp-tailed grouse is discussed in the PRB FEIS on pp. 3-148 to 3-150.

Habitats within the project area have limited potential to support sharp-tailed grouse. The mosaic of grasslands and sagebrush-grasslands that may provide nesting habitat, but the lack of wooded draws, shrubby riparian areas, and wet meadows limit the likelihood of plains sharp-tailed grouse occurrence. The nearest known plains sharp-tailed grouse lek is approximately 20 miles to the northwest of the project area. No plains sharp-tailed grouse were noted in the project area by consultants or the BLM biologist, and the species will not be discussed further.

### 3.3.6. Sagebrush Obligates

Sagebrush ecosystems support a variety of species, including migratory birds, raptors, big game, reptiles, and small mammals. Several Wyoming BLM sensitive species are associated with sagebrush ecosystems. These include ferruginous hawk, loggerhead shrike, Townsend's big-eared bat, and western burrowing owl.

Sagebrush obligates are species that require sagebrush for some part of their life cycle and cannot survive without it. Sagebrush obligate species within the Powder River Basin that are listed as sensitive species by Wyoming BLM include Brewer's sparrow, sage thrasher, sage sparrow, and greater sage-grouse. All of these bird species require sagebrush for nesting, with nests typically located within or under the sagebrush canopy.

### **3.3.7. Threatened and Endangered Species and Sensitive Species**

#### **3.3.7.1. Threatened and Endangered Species**

Within the BLM Buffalo Field Office there are three species that are Threatened or Endangered under the Endangered Species Act: black-footed ferret, blowout penstemon, and Ute ladies'-tresses.

##### **3.3.7.1.1. Black-footed ferret**

The black-footed ferret is listed as Endangered under the ESA. The affected environment for black-footed ferrets is discussed in the PRB FEIS on pg. 3-175.

A black-footed ferret population requires at least 1,000 acres of prairie dog colonies, separated by no more than 1.5 km, for survival (USFWS 1989). No black-tailed prairie dog colonies were identified within 0.75 miles of the project boundary, the minimum distance required to affect habitat, according to the above criterion. Black-footed ferret habitat is not present within the project area and the species will not be discussed further.

##### **3.3.7.1.2. Blowout Penstemon**

Blowout penstemon is a regional endemic species of the Sand Hills of ~~western Nebraska~~ **central Nebraska** and the northeastern Great Divide Basin in Carbon County, Wyoming. The plant is listed as Endangered under the ESA. Suitable blowout penstemon habitat consists of sparsely vegetated, early successional, shifting sand dunes and blowout depressions created by wind (BLM 2005). In Wyoming, the habitat is typically found on sandy aprons or the lower half of steep sandy slopes deposited at the base of granitic or sedimentary mountains or ridges. The project area does not contain areas with these characteristics, and blowout penstemon is not expected to occur; therefore, the species will not be discussed further.

##### **3.3.7.1.3. Ute Ladies'-Tresses Orchid**

The Ute ladies'-tresses orchid (ULT) is listed as Threatened under the ESA. The affected environment for ULT is discussed in the PRB FEIS on pg. 3-175.

The PRB FEIS reported that only four orchid populations had been documented within Wyoming, but since the writing of that document, five additional sites were located in 2005 and one in 2006 (Heidel pers. comm.). The new locations were in the same drainages as the original populations, with two on the same tributary and within a few miles of an original location. Drainages with documented orchid populations include Wind Creek and Antelope Creek in northern Converse County, Bear Creek in northern Laramie and southern Goshen Counties, Horse Creek in Laramie County, and Niobrara River in Niobrara County. A WYNDD model predicts undocumented populations may be present particularly within southern Campbell and northern Converse Counties.

The project area has limited potential to support the species. No potential habitat (wet meadows, perennial streams), was identified by the BLM biologist at the onsite.

##### **3.3.7.1.4. Greater Sage-Grouse**

The affected environment for greater sage-grouse (herein referred to as sage-grouse) is discussed in the PRB FEIS (pg. 3-194 to 3-199). On March 23, 2010, the United States Fish & Wildlife Service (hereafter, USFWS) issued a proposed rule, finding that listing the greater sage-grouse as Threatened was warranted, but precluded by other listing priorities (USFWS 2010), and is considered a Candidate species. In addition, the sage-grouse is listed as a BLM sensitive species, and a Wyoming Game and Fish Department Species of Greatest Conservation Need, with a rating of Native Sensitive Species 2. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action.

The best available science describing both the range-wide and Powder River Basin current status, habitat

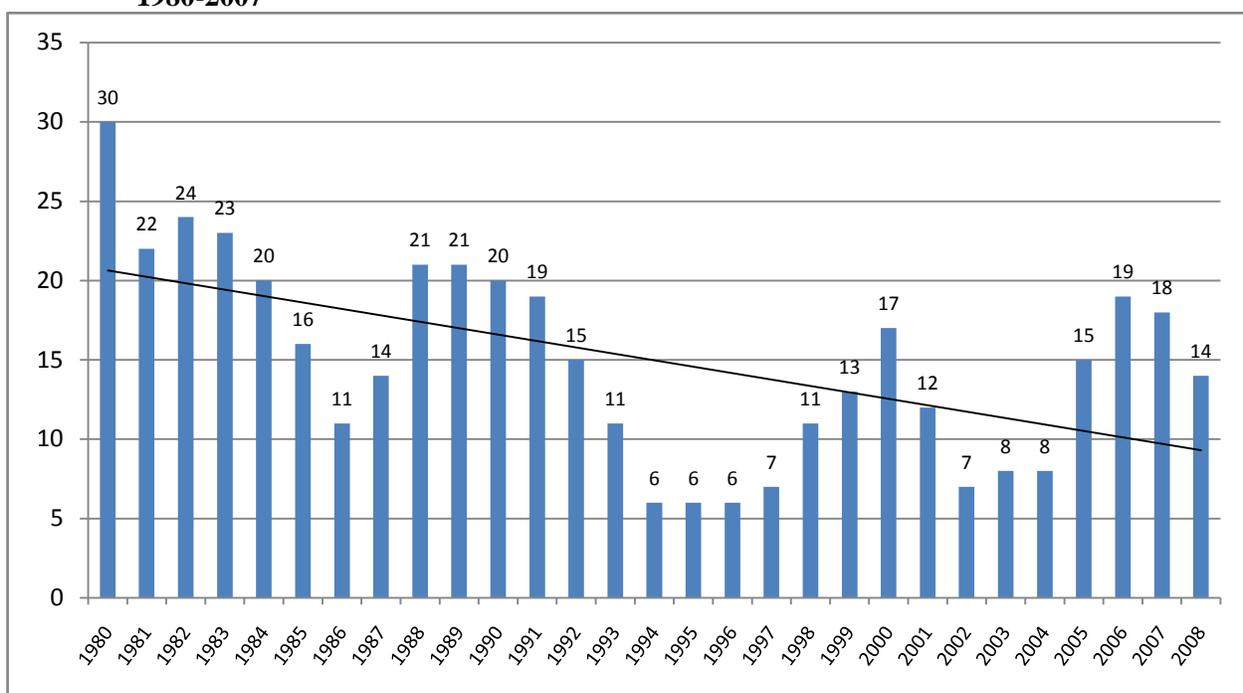
needs, threats, and projections for the species can be found in the recent USFWS Proposed Rule (USFWS 2010). Of particular interest for the current status of greater sage-grouse as related to the project area are those sections of the Proposed Rule that address habitat characteristics (p.13917), connectivity (p.13923-41392), energy development (p. 13942-13949), and projections of future populations (p. 13958-13961).

**Powder River Basin:**

The Powder River Basin serves as a link between the Wyoming Basin and central Montana grouse populations. The Powder River Basin is in sage-grouse Management Zone 1, this management zone is predominantly grasslands and represents the periphery of sage-grouse distribution. In the Powder River Basin sagebrush is more heterogeneously distributed, and where found is at lower densities (less canopy cover), than it is in other management zones. In the context of habitat structural quality within the Powder River Basin, the project area contains quality habitat. The extent of oil well development in the project area has compromised habitat effectiveness.

The sage-grouse population within northeast Wyoming has been exhibiting a steady long term downward trend, as measured by lek attendance (WGFD 2008b). The following figure illustrates a ten-year cycle of periodic highs and lows. Each subsequent population peak is lower than the previous peak. Research suggests that these declines may be a result, in part, of CBNG development in this region of Wyoming and that the leks within the project area are experiencing similar declines (USFWS 2010).

**Figure 1 Average number of male sage-grouse per active lek within the WGFD Sheridan region, 1980-2007**



Research has shown that declines in lek attendance are correlated with oil and gas development. In a typical landscape in the Powder River Basin, energy development within two miles of leks is projected to reduce the average probability of lek persistence from 87% to 5% percent (Walker et al. 2007). Several studies have shown that well density can be used as a metric for evaluating impacts to sage-grouse, as measured by declines in lek attendance (Braun et al. 2002, Holloran et al. 2005, and Walker et al. 2007). These studies indicated that oil or gas development exceeding approximately one well pad per square mile, resulted in calculable impacts on breeding populations, as measured by the number of male sage-

grouse attending leks (State Wildlife Agencies' Ad Hoc Committee for Sage-Grouse and Oil and Gas Development 2008).

In its Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (2009), WGFD categorized levels of oil and gas development into thresholds that correspond to moderate, high, and extreme impacts to habitat effectiveness for various species of wildlife, based on well pad densities and acreages of disturbance. All three levels of impact result in a loss of habitat function by directly eliminating habitat; disrupting wildlife access to, or use of habitat; or causing avoidance and stress to wildlife. Impacts to sage-grouse are categorized by number of well pad locations per square mile within two miles of a lek and within identified nesting/brood-rearing habitats greater than two miles from a lek. Moderate impacts occur when well density is between one and two well pad locations per square mile or where there is less than 20 acres of disturbance per square mile. High impacts occur when well density is between two and three well pad locations per square mile or when there are between 20 and 60 acres of disturbance per square mile. Extreme impacts occur when well density exceeds three well pad locations per square mile or when there are greater than 60 acres of disturbance per square mile. Extreme impacts mean those where the function of an important wildlife habitat is substantially impaired or lost.

All the leks within two miles of the proposed action are already at an extreme level of impact. Declines in lek attendance associated with oil and gas development may be a result of a suite of factors; however, fragmentation of habitat is the predominant issue (USFWS 2010). The State of Wyoming has adopted a Core Area concept that protects the largest populations of sage-grouse. The BLM has adopted this concept and added Focus areas in the Buffalo Field Office Area to supplement the Core concept. Sage-grouse Core/Focus Areas assume those sufficient amounts of good quality sage-grouse habitat remains un-fragmented by energy or other man-made infrastructure. These basic concepts for management are based on the assumptions that sufficient "islands" of undisturbed (by human infrastructure) sage-grouse habitat would remain to sustain a large enough sage-grouse population for the long-term.

State-wide, Core Population areas are probably sufficient since they encompass approximately 70 percent of sage-grouse; however, in the Buffalo Field Office the Core Population/ Focus Areas capture approximately 25 percent of sage-grouse. To address this inadequacy of Core/Focus areas in the Powder River Basin, the BLM, in coordination with the State of Wyoming have identified an area (roughly between Crazy Woman Creek and the Powder River then trending north to the Montana) as connectivity habitat. We believe the combination of Core/Focus areas and connectivity habitat can maintain a viable greater sage-grouse population in the Powder River.

Project area:

Suitable (as defined in Soehn et al. 2001) sage-grouse habitat is present in the project area. Continuous stands of sparsely to moderately dense sagebrush are present in patches throughout. According to a statewide population density model that was developed based on lek attendance (Doherty 2008), the entire project is contained in an area, that when combined with other similar areas, represents good to moderate population densities. Due to the extent of oil and gas development in the project area, habitat is assumed to be not currently functional.

The State Wildlife Agencies' Ad Hoc Committee for Consideration of Oil and Gas Development Effects to Nesting Habitat (2008) recommends that impacts be considered for leks within four miles of oil and gas developments. WGFD records indicate that five sage-grouse leks occur within four miles of the project area. All five leks are in the "extreme" category of impact, as described previously. These five lek sites are identified in Table 3.3.

**Table 3.3 Sage-grouse leks within 4 miles of the project area**

Lek Name	Legal Location	Distance from Project Area (mi)	Occupied?
Gilbertz I	SESW Sec. 11 44N, 75W	Inside POD	no
Gilbertz II	SWNE Sec 13 44N, 75W	.06 miles	yes
Gilbertz III	SESE Sec. 21 44N, 75W	2.5 miles	yes
Mud Spring Creek	NENE Sec. 33 44N, 75W	3 miles	yes
North Butte	NWNE Sec. 18 44N, 75W	2.5 miles	yes

**3.3.7.2. Sensitive Species**

Wyoming BLM has prepared a 2010 list of sensitive species on which management efforts should be focused towards maintaining habitats under a multiple use mandate. The goals of the policy are to:

- Maintain vulnerable species and habitat components in functional BLM ecosystems
- Ensure sensitive species are considered in land management decisions
- Prevent a need for species listing under the ESA
- Prioritize needed conservation work with an emphasis on habitat

This section lists those species on the Wyoming BLM sensitive species list that, according to the PRB FEIS, may occur in the Powder River Basin Oil and Gas Project Area, which includes the project area. The following discussion for each of those sensitive species includes an analysis of whether the species is likely to occur in or be affected by the proposed project. According to the PRB FEIS, spotted bats were not likely to be affected by the Powder River Basin Oil and Gas Project, and are therefore not discussed in this section. The authority for the sensitive species policy and guidance comes from the Endangered Species Act of 1973, as amended; Title II of the Sikes Act, as amended; the Federal Land Policy and Management Act (FLPMA) of 1976; and the Department Manual 235.1.1A.

Common Name (scientific name)	Habitat	Presence	Rationale
<i>Amphibians</i>			
Northern leopard frog ( <i>Rana pipiens</i> )	Perennial water.	NP	No habitat for the species.
Columbia spotted frog ( <i>Ranus pretiosa</i> )	Perennial water in foothills and montane zones. Confined to headwaters of the S Tongue R drainage and tributaries.	NP	Outside the species' range
<i>Fish</i>			
Yellowstone cutthroat trout ( <i>Oncoryhynchus clarki bouvieri</i> )	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	Outside the species' range

Common Name (scientific name)	Habitat	Presence	Rationale
Birds			
Baird's sparrow ( <i>Ammodramus bairdii</i> )	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground.	S	Habitat present.
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Mature forest cover often within one mile of large water body with reliable prey source nearby.	K	Foraging habitat present. Roost known 4 miles to west.
Brewer's sparrow ( <i>Spizella breweri</i> )	Sagebrush shrubland	S	Sagebrush/sage-steppe/grassland present.
Ferruginous hawk ( <i>Buteo regalis</i> )	Basin-prairie shrub, grasslands, rock outcrops	K	Sagebrush/sage-steppe/grassland present. Known nests.
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Basin-prairie shrub, mountain-foothill shrub	S	Sagebrush/sage-steppe/grassland present.
Long-billed curlew ( <i>Numenius americanus</i> )	Grasslands, plains, foothills, wet meadows	S	Sagebrush/sage-steppe/grassland present.
Mountain plover ( <i>Charadrius montanus</i> )	Short-grass prairie with slopes < 5%	NS	Little suitable habitat. Negative surveys (3 years)
Northern goshawk ( <i>Accipiter gentilis</i> )	Conifer and deciduous forests	NP	No suitable habitat.
Peregrine falcon ( <i>Falco peregrinus</i> )	Cliffs	NP	No suitable habitat.
Sage sparrow ( <i>Amphispiza billneata</i> )	Basin-prairie shrub, mountain-foothill shrub	NS	Edge of range.
Sage thrasher ( <i>Oreoscoptes montanus</i> )	Basin-prairie shrub, mountain-foothill shrub	S	Sagebrush/sage-steppe/grassland present.
Trumpeter swan ( <i>Cygnus buccinator</i> )	Lakes, ponds, rivers	NP	No suitable habitat.
Western Burrowing owl ( <i>Athene cunicularia</i> )	Grasslands, basin-prairie shrub	NS	Marginal habitat.
White-faced ibis ( <i>Plegadis chihi</i> )	Marshes, wet meadows	NP	No suitable habitat.
Yellow-billed cuckoo ( <i>Coccyzus americanus</i> )	Open woodlands, streamside willow and alder groves	NP	No suitable habitat.

Common Name (scientific name)	Habitat	Presence	Rationale
<i>Mammals</i>			
Black-tailed prairie dog ( <i>Cynomys ludovicianus</i> )	Prairie habitats with deep, firm soils and slopes less than 10 degrees.	NP	No known colonies present.
Fringed myotis ( <i>Myotis thysanodes</i> )	Conifer forests, woodland chaparral, caves and mines	S	Sagebrush/sage-steppe/grassland present. Suitable foraging habitat.
Long-eared myotis ( <i>Myotis evotis</i> )	Conifer and deciduous forest, caves and mines	S	Sagebrush/sage-steppe/grassland present. Suitable foraging habitat.
Swift fox ( <i>Vulpes velox</i> )	Grasslands	S	Sagebrush/sage-steppe/grassland present.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	Caves and mines.	S	Sagebrush/sage-steppe/grassland present. Suitable foraging habitat.
<i>Plants</i>			
Porter's sagebrush ( <i>Artemisia porteri</i> )	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft.	NP	Habitat not present.
William's wafer parsnip ( <i>Cymopterus williamsii</i> )	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	Project area outside of species' range.
Limber Pine ( <i>Pinus flexilis</i> )	Montane	NP	Inappropriate elevation
<b>Presence</b> <b>K</b> - Known, documented observation within project area. <b>S</b> - Habitat suitable and species suspected, to occur within the project area. <b>NS</b> - Habitat suitable but species is not suspected to occur within the project area. <b>NP</b> - Habitat not present and species unlikely to occur within the project area.			

### 3.3.7.2.1. Baird's Sparrow

The affected environment for Baird's sparrow is discussed in the PRB FEIS on pg. 3-188. In addition to being listed as a Wyoming BLM sensitive species, Baird's sparrows are listed by USFWS as a BCC for Region 17. This species may occur in the project area, although it has not been reported and is on the edge of the species range. The project area contains suitable grasslands.

#### **3.3.7.2.2. Bald Eagle**

The affected environment for bald eagles is described in the PRB FEIS on pg. 3-175. At the time the PRB FEIS was written, the bald eagle was listed as a threatened species under the ESA. Due to successful recovery efforts, it was removed from the ESA on 8 August 2007. The bald eagle remains under the protection of the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In order to avoid violation of these laws and uphold the BLM's commitment to avoid any future listing of this species, the BLM shall continue to comply with all conservation measures and terms and conditions identified in the Powder River Basin Oil and Gas Project Biological Opinion (PRB Oil & Gas Project BO).

In addition to being listed as a Wyoming BLM sensitive species, bald eagles are a WGFD SGCN with a NSS2 rating, due to populations being restricted in numbers and distribution, ongoing significant loss of habitat, and sensitivity to human disturbance. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action. They are also listed by USFWS as a BCC for Region 17.

Bald eagle nesting and roosting habitat is not present within one mile of the project area. The project area does however provide foraging habitat, particularly with winter concentrations of pronghorn. At the onsite two vehicle killed antelope were seen in the project area.

#### **3.3.7.2.3. Brewer's Sparrow**

The affected environment for Brewer's sparrow is discussed in the PRB FEIS on pg. 3-200. In addition to being listed as a BLM Wyoming sensitive species, Brewer's sparrows are a WGFD SGCN, with a rating of NSS4 because populations are declining, habitat is vulnerable with no ongoing loss, and the species is not sensitive to human disturbance. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action. They are also listed by USFWS as a BCC for Region 17.

Brewer's sparrow habitat is present throughout the project area, and this species is suspected to occur.

#### **3.3.7.2.4. Ferruginous Hawk**

The affected environment for ferruginous hawk is discussed in the PRB FEIS on pg. 3-183. In addition to being listed as a Wyoming BLM sensitive species, ferruginous hawks are a WGFD SGCN, with a rating of NSS3 because the species is widely distributed, population status and trends are unknown but are suspected to be stable, they are experiencing ongoing loss of habitat, and they are sensitive to human disturbance. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action. They are also listed by USFWS as a BCC for Region 17.

Territory and nest site reoccupancy is common for ferruginous hawks, and one of several nests within a territory may be used in alternate years (Dechant et al. 2003). In Utah, as many as 15 nests have been found in a territory (an area defended by a mated pair during a breeding season (Hawkwatch 2009). The clustered pattern of ferruginous hawk nests that includes nests 1074, 3369, and 668 suggest that these nest may be within a breeding territory (a group of nests that is defended by a single breeding pair).

At least five ferruginous hawk nests are present within 0.5 miles of the project area, one of which was used most recently in 2008. Foraging habitat and prey are available throughout the project area.

#### **3.3.7.2.1. Loggerhead Shrike**

The affected environment for loggerhead shrike is discussed in the PRB FEIS on pg. 3-187. In addition to being listed as a Wyoming BLM sensitive species, loggerhead shrikes are listed by USFWS as a BCC for

Region 17. The Wyoming Bird Conservation Plan rates them as a Level II species, indicating they are in need of monitoring. Loggerhead shrike habitat is present throughout the project area, and the species is suspected to occur.

#### **3.3.7.2.2. Sage Thrasher**

The affected environment for sage thrasher is discussed in the PRB FEIS on pg. 3-199 to 3-200. In addition to being listed as a Wyoming BLM sensitive species, sage thrashers are a WGFD SGCN, with a rating of NSS4, because populations are declining, habitat is vulnerable but not undergoing loss, and the species is not sensitive to human disturbance. The Wyoming Bird Conservation Plan rates them as a Level II species, indicating the action and focus should be on monitoring and because Wyoming has a high percentage of and responsibility for the breeding population. They are also listed by USFWS as a BCC for Region 17. Suitable sage thrasher habitat occurs throughout the project area, and the species may occur.

#### **3.3.7.2.3. Fringed Myotis**

The affected environment for fringed myotis is discussed in the PRB FEIS on pg. 3-188 to 3-189. In addition to being listed as a BLM WY sensitive species, the fringed myotis is a WGFD SGCN, with a rating of NSS2, because populations are restricted in distribution, they are experiencing ongoing significant loss of habitat, and they are sensitive to human disturbance. The fringed myotis occupies a variety of habitats, including grasslands and basin-prairie shrublands, usually in proximity of drinking water (Hester and Grenier 2005). After feeding, it uses night roosts, which may include buildings, rock crevices, and bridges (Hester and Grenier 2005), all of which occur in the vicinity of the project area.

Although the project area contains grassland and shrublands in proximity of drinking water, suitable roost habitat is limited. Fringed myotis may occur in the project area, but they are likely to roost outside of areas impacted by proposed infrastructure.

#### **3.3.7.2.4. Long-eared Myotis**

The affected environment for long-eared myotis is discussed in the PRB FEIS on pg. 3-201. In addition to being listed as a BLM WY sensitive species, the long-eared myotis is a WGFD SGCN, with a rating of NSS2, because populations are restricted in distribution, they are experiencing ongoing significant loss of habitat, and they are sensitive to human disturbance. Although long-eared myotis primarily inhabit coniferous forest and woodland, they are occasionally found in cottonwood riparian areas and sagebrush grasslands where roost sites are available (Hester and Grenier 2005). Roosts include cavities in snags, under loose bark, stumps, buildings, and rock crevices (Hester and Grenier 2005), all of which may occur in the vicinity of the project area. Because long-eared myotis may occur in sagebrush grasslands, their occurrence in the project area is most likely limited by availability of roost sites. Long-eared myotis may occur in the project area, but they are not likely to roost in areas impacted by proposed infrastructure.

#### **3.3.7.2.5. Swift Fox**

The affected environment for swift fox is discussed in the PRB FEIS on pg. 3-189. In addition to being listed as a BLM WY sensitive species, swift fox is also listed as a WGFD SGCN, with a rating of NSS4, because population status and trends are unknown but are suspected to be stable, and habitat is vulnerable but is not undergoing significant loss.

The project area does not contain suitable swift fox habitat. Patches of grassland are available, but they are smaller in size and do not dominate the landscape. The overall rolling terrain precludes the availability of den sites that would provide good views of the surrounding area. Swift fox are expected to occur in the project area.

#### **3.3.7.2.6. Townsend's Big-eared Bat**

The affected environment for Townsend's big-eared bat is discussed in the PRB FEIS on pg. 3-189. In addition to being listed as a BLM WY sensitive species, Townsend's big-eared bat is listed as a WGFD SGCN, with a rating of NSS2, because populations are restricted in distribution, they are experiencing ongoing significant loss of habitat, and they are sensitive to human disturbance. Townsend's big-eared bats occur in sagebrush and other shrublands, and roosts include rock outcrops and buildings, which occur in the vicinity of the project area. It may be limited to areas with reliable, accessible sources of drinking water (Hester and Grenier 2005), such as the Powder River. Foraging areas include riparian corridors (Hester and Grenier 2005).

Townsend's big-eared bat may occur in the project area at times of the year when drinking water is available. Their occurrence is likely limited by availability of roost sites.

#### **3.4. West Nile Virus**

West Nile virus (WNV) is a mosquito-borne disease that can cause encephalitis or brain infection. Mosquitoes spread this virus after they feed on infected birds and then bite people, other birds, and animals. WNV is not spread by person-to-person contact, and there is no evidence that people can get the virus by handling infected animals.

Since its discovery in 1999 in New York, WNV has become firmly established and spread across the United States. Birds are the natural vector host and serve not only to amplify the virus, but to spread it. Though less than 1% of mosquitoes are infected with WNV, they still are very effective in transmitting the

virus to humans, horses, and wildlife. *Culex tarsalis* appears to be the most common mosquito to vector, WNV.

Although most of the attention has been focused on human health issues, WNV has had an impact on vertebrate wildlife populations. At a recent conference at the Smithsonian Environmental Research Center, scientists disclosed WNV had been detected in 157 bird species, horses, 16 other mammals, and alligators (Marra et al 2003). In the eastern US, avian populations have incurred very high mortality, particularly crows, jays and related species. The Wyoming State Vet Lab determined 22 sage-grouse in one study project (90% of the study birds), succumbed to WNV in the PRB in 2003. While birds infected with WNV have many of the same symptoms as infected humans, they appear to be more sensitive to the virus (Rinkes 2003).

Preliminary research conducted in the Powder River Basin indicates WNV mosquito vectors were notably more abundant on a developed CBNG site than two similar undeveloped sites (Walker et al. 2003). Reducing the population of mosquitoes, especially species that are apparently involved with bird-to-bird transmission of WNV, such as *Culex tarsalis*, can help to reduce or eliminate the presence of virus in a given geographical area (APHIS 2002). The most important step any property owner can take to control such mosquito populations is to remove all potential man-made sources of standing water in which mosquitoes might breed (APHIS 2002).

#### **3.5. Cultural Resources**

Five previously reviewed and accepted Class III cultural resource inventories (BFO# 61840235, 61840242, 70050172, 70050246, 70060148) adequately covered the proposed project area. On 6/3/2010 Ardeth Hahn, BLM Archaeologist, electronically notified the Wyoming State Historic Preservation Office (SHPO) following section VI(A)(1) of the Wyoming State Protocol, of a finding of no effect for the proposed project. The following resources are located in or near the project area.

**Table 3.4 Cultural Resources Inventory Results**

Site Number	Site Type	Eligibility
HDU#943 IF-1	Prehistoric Isolated Resource	NE
48CA624	Prehistoric Site	NE
48CA5531	Historic Site	NE
48CA5532	Historic Site	NE
48CA5533	Prehistoric Site	NE
48CA5538	Prehistoric Site	U
48CA5571	Prehistoric Site	NE

### **3.6. Air Quality**

Existing air quality throughout most of the Powder River Basin is in attainment with all ambient air quality standards. Although specific air quality monitoring is not conducted throughout most of the Powder River Basin, air quality conditions in rural areas are likely to be very good, as characterized by limited air pollution emission sources (few industrial facilities and residential emissions in the relatively small communities and isolated ranches) and good atmospheric dispersion conditions, resulting in relatively low air pollutant concentrations.

Existing air pollutant emission sources within the region include following:

- Exhaust emissions (primarily CO and nitrogen oxides [NOx]) from existing natural gas fired compressor engines used in production of natural gas and CBNG; and, gasoline and diesel vehicle tailpipe emissions of combustion pollutants;
- Dust (particulate matter) generated by vehicle travel on unpaved roads, windblown dust from neighboring areas and road sanding during the winter months;
- Transport of air pollutants from emission sources located outside the region;
- Dust (particulate matter) from coal mines;
- NOx, particulate matter, and other emissions from diesel trains and,
- SO2 and NOx from power plants.

For a complete description of the existing air quality conditions in the Powder River Basin, please refer to the PRB Final EIS Volume 1, Chapter 3, pages 3-291 through 3-299.

## **4. ENVIRONMENTAL CONSEQUENCES**

The changes to the proposed action (Alternative B) resulted in development of Alternatives C. These changes have reduced impacts to the environment which will result from this action, therefore only the environmental consequences of Alternative C are described below. For a full analysis of Alternatives A and B, see the PRB FEIS.

Mitigation measures are applied by resource only where necessary to reduce impacts and Residual Effects by resource are only disclosed when anticipated.

The cumulative effects associated with Alternative C that are within the analysis parameters and impacts described in the PRB FEIS are not covered within the H.D.U. Federal Oil POD Addition EA. For further

details on expected cumulative impacts, please refer to the referenced PRB FEIS. Cumulative impacts that are not addressed within the PRB FEIS are disclosed below in detail.

**4.1. Alternative C**

**4.1.1. Vegetation & Soils Direct and Indirect Effects**

Proposed stream crossings, including culverts and fords (low water crossings) are shown on the MSUP and the WMP maps (see the POD). These structures would be constructed in accordance with sound engineering practices and BLM standards.

The impacts listed below, singly or in combination, would increase the potential for valuable soil loss due to increased water and wind erosion, invasive plant establishment, and increased sedimentation and salt loads to the watershed system.

The effects to soils resulting from well pad, access roads and pipeline construction include:

- Mixing of horizons – occurs where construction on roads, pipelines or other activities take place. Mixing may result in removal or relocation of organic matter and nutrients to depths where it would be unavailable for vegetative use. Soils which are more susceptible to wind and water erosion may be moved to the surface. Soil structure may be destroyed, which may impact infiltration rates. Less desirable inorganic compounds such as carbonates, salts or weathered materials may be relocated and have a negative impact on re-vegetation. This drastically disturbed site may change the ecological integrity of the site and the recommended seed mix.
- Loss of soil vegetation cover, biologic crusts, organic matter and productivity.
- Soil erosion would also affect soil health and productivity. Erosion rates are site specific and are dependent on soil, climate, topography and cover.
- Soil compaction – the collapse of soil pores results in decreased infiltration and increased erosion potential. Factors affecting compaction include soil texture, moisture, organic matter, clay content and type, pressure exerted, and the number of passes by vehicle traffic or machinery.
- Alteration of surface run off characteristics.
- An important component of soils in Wyoming’s semiarid rangelands, especially in the Wyoming big sagebrush cover type, are biological soil crusts, or cryptogamic soils that occupy ground area not covered with vascular plants. Biological soil crusts are important in maintaining soil stability, controlling erosion, fixing nitrogen, providing nutrients to vascular plants, increasing precipitation infiltration rates, and providing suitable seed beds (BLM 2003). They are adapted to growing in severe climates; however, they take many years to develop (20 to 100) and can be easily disturbed or destroyed by surface disturbances associated with construction activities.

Table 4.1 summarizes the proposed surface disturbance.

**Table 4.1 - SUMMARY OF PROPOSED DISTURBANCE**

<b>Facility</b>	<b>No. or Mileage</b>	<b>Factor</b>	<b>Disturbance (acres)</b>	<b>Duration</b>
Proposed Well Pads	10 Well Pads	200*315/43560 Acre=1.44	14.40 acres	Long Term
Proposed Improved Roads	1.46 miles	50' Corridor	8.84 acres	Long Term
Proposed Pipelines not	0.75 miles	15' Corridor	3.64 acres	Short Term

Facility	No. or Mileage	Factor	Disturbance (acres)	Duration
within corridor				
Proposed Overhead Power	1.39 miles	30' Corridor	5.05 acres	Long Term

**Table 4.2 - SUMMARY OF EXISTING DISTURBANCE**

Facility	No. or Mileage	Factor	Disturbance (acres)	Duration
Existing Overhead Power	14.41 miles	30' Corridor	52.40 acres	Long Term
Existing Pipelines not within corridor	15.26 miles	30' Corridor	55.49 acres	Short Term
Existing Improved Roads Utilized	12.47 miles	50' Corridor	75.57 acres of existing	Long Term

The designation of the duration of disturbance is defined in the PRB FEIS (pg 4-1 and 4-151). “For this EIS, short-term effects are defined as occurring during the construction and drilling/completion phases. Long-term effects are caused by construction and operations that would remain longer”.

Table 4.1 represents the proposed facilities and do not include the existing facilities from Alternative A. Table 4.2 represents the existing infrastructure within the POD boundary. This is a highly developed area, the POD will utilize existing infrastructure, but due to engineering requirements, upgrades had to be made for safety, drainage, and reclamation purposes. The proposed action will encompass approximately 28.29 acres in long term disturbance and approximately 3.64 acres in short term disturbance. The proposed action will utilize approximately 183.46 acres of existing disturbance, such as access roads and utility corridors.

#### 4.1.2. Invasive Species

The operator has committed to the control of noxious weeds and species of concern using the following measures identified in their Integrated Pest Management Plan (IPMP):

- Cultural: Methods of control and prevention will be re-seeding, mulching, vehicle and equipment maintenance, and surface disturbance as detailed in the IPMP.
- Physical: Methods of control and prevention include physically mowing and hand pulling weeds (for small or new infestations).
- Biological: Biological methods of control and prevention such as domestic animal use and approved biological control agents will be used.
- Chemical: Herbicides are another method of control and prevention that may be used to treat weeds. The use of herbicides must be done in accordance with the existing Surface Use Agreement with the private surface owner.
- Education: Weed education awareness programs include; identifying weeds and reporting weed infestations to the project manager.

Cheatgrass or downy brome (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) are known to exist in the affected environment. These two species are found in such high densities and numerous locations throughout NE Wyoming that a control program is not considered feasible at this time.

The use of existing facilities along with the surface disturbance associated with construction of proposed

access roads, pipelines, and related facilities would present opportunities for weed invasion and spread. The activities related to the performance of the proposed project would create a favorable environment for the establishment and spread of noxious weeds/invasive plants such as salt cedar, Canada thistle and perennial pepperweed. However, mitigation as required by BLM applied COAs will reduce potential impacts from noxious weeds and invasive plants.

## **4.2. Wildlife (Alternative C – Environmentally Preferred)**

### **4.2.1. Wildlife**

#### **4.2.1.1. Big Game Direct and Indirect Effects**

Impacts to big game are discussed in the PRB FEIS on pp. 4-181 to 4-215.

##### **4.2.1.1.1. Cumulative Effects**

The cumulative effects associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pg. 4-181 to 4-215.

#### **4.2.1.2. Aquatics Direct and Indirect Effects**

Impacts to aquatics are discussed in the PRB FEIS on pp. 4-235 to 4-247. The proposed action does not discharge water onto the surface or impact aquatic habitats.

##### **4.2.1.2.1. Cumulative Effects**

The cumulative effects associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, (pp. 4-247 to 4-249). No additional mitigation measures are required.

#### **4.2.1.3. Migratory Birds Direct and Indirect Effects**

Direct and indirect effects to migratory birds are discussed in the PRB FEIS (pp. 4-231 to 4-235). More recent research suggests that impacts will occur. Ingelfinger (2004) identified that the density of some breeding bird species declined within 100 m of dirt roads within a natural gas field. In the study, the density of Brewer's sparrows declined by 36%, and the density of breeding sage sparrows declined by 57%. Effects occurred along roads with light traffic volume (<12 vehicles per day). The increasing density of roads constructed in developing natural gas fields exacerbated the problem creating substantial areas of impact where indirect habitat losses through displacement were much greater than the direct physical habitat losses.

Migratory bird species within the Powder River Basin nest in the spring and early summer and are vulnerable to the same effects as sage-grouse and raptor species. Though no timing restrictions are typically applied specifically to protect migratory bird breeding or nesting, where sage-grouse or raptor nesting timing limitations are applied, nesting migratory birds are also protected. Where these timing limitations are not applied and migratory bird species are nesting, migratory birds remain vulnerable.

##### **4.2.1.3.1. Cumulative Effects**

The cumulative effects associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pg. 4-235. No additional mitigation measures are required.

#### **4.2.1.4. Raptors Direct and Indirect Effects**

Direct and indirect effects to raptors are discussed in the PRB FEIS (pp. 4-216 to 4-221).

To reduce the risk of decreased productivity or nest failure as described in the PRB FEIS the BLM BFO requires a 0.5 mile radius timing limitation during the breeding season around active raptor nests and recommends all infrastructure requiring human visitation be located in such a way as to provide an adequate biologic buffer for nesting raptors. A biologic buffer is a combination of distance and visual screening that provides nesting raptors with security such that they will not be flushed by routine activities. All the nest locations listed in Chapter 3, with the exception of nest # 10749, will be sufficiently protected with the timing limitation for construction activities.

Nest 10749, a ferruginous hawk nest is located 0.1 mile south and within sight of the proposed 3352 well location. Due to the existing tank battery 0.2 miles to the south of the nest, and the newly constructed 3-phase power line directly over the nest, there is a very low probability that this nest location will be used in the future with or without the proposed action. The noise and human activity at the tank battery, in combination with the power lines and pole directly over the nest most likely make this location unsuitable for future use.

**4.2.1.4.1. Cumulative Effects**

The cumulative effects associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pg. 4-221. No additional mitigation measures are required.

**4.2.1.5. Sagebrush Obligates Direct and Indirect Effects**

Large-scale development of energy reserves underlying sagebrush ecosystems is placing sagebrush communities and wildlife increasingly at risk (WGFD 2009). Construction and maintenance activities associated with development of the project are likely to cause a decline in sagebrush obligate species. In Wyoming, existing oil and gas wells are located primarily in landscapes dominated by sagebrush, causing direct loss of this habitat. Associated road networks, pipelines, and powerline transmission corridors also influence vegetation dynamics by fragmenting habitats or by creating soil conditions facilitating the spread of invasive species and predators (Braun 1998, Gelbard and Belnap 2003). Density of sagebrush-obligate birds within 100m of roads constructed for natural gas development in Wyoming was 50% lower than at greater distances (Ingelfinger 2001). Fragmentation of shrubsteppe has the further potential to affect the conservation of sagebrush-obligate species because of the permanence of disturbance (Knick and Rotenberry 1995). Several decades are required to reestablish ecologically functioning mature sagebrush communities. Due to this, sagebrush obligate species may not return for many years after reclamation activities are completed.

**4.2.1.6. Threatened and Endangered Species**

Potential project effects on Threatened and Endangered Species were analyzed and a summary is provided in Table 4.3.

**Table 4.3 Summary of Threatened and Endangered Species Habitat and Project Effects.**

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
<i>Endangered</i>				
Black-footed ferret ( <i>Mustela nigripes</i> )	Black-tailed prairie dog colonies or complexes > 1,000 acres.	NP	NE	No suitable habitat present.
Blowout penstemon ( <i>Penstemon haydenii</i> )	Sparsely vegetated, shifting sand dunes	NP	NE	No suitable habitat present.
<i>Threatened</i>				
Ute ladies'-tresses orchid	Riparian areas with permanent	NP	NE	No suitable habitat

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
<i>Spiranthes diluvialis</i>	water			present.
<p><b>Presence</b>  <b>K</b> - Known, documented observation within project area.  <b>S</b> - Habitat suitable and species suspected, to occur within the project area.  <b>NS</b> - Habitat suitable but species is not suspected to occur within the project area.  <b>NP</b> - Habitat not present and species unlikely to occur within the project area.</p> <p><b>Project Effects</b>  <b>LAA</b> - Likely to adversely affect  <b>NE</b> - No Effect  <b>NLAA</b> - May Affect, not likely to adversely affect individuals or habitat.</p>				

#### 4.2.1.6.1. Black-Footed Ferret Direct and Indirect Effects

Direct and indirect effects to black-footed ferret are discussed in the PRB FEIS (pg. 4-251). Implementation of the proposed development will have no effect on the black-footed ferret because habitat is not present in the project area, and the species is not likely to occur.

#### 4.2.1.6.2. Blowout Penstemon Direct and Indirect Effects

Suitable habitat is not present within the proposed project area. Implementation of the proposed coal bed natural gas project will have no effect on the blowout penstemon.

#### 4.2.1.6.3. Ute Ladies'-Tresses Orchid Direct and Indirect Effects

Suitable habitat is not present within the proposed project area. Implementation of the proposed coal bed natural gas project will have no effect on the Ute ladies'- tresses orchid.

#### 4.2.1.6.4. Cumulative Effects

The cumulative effects associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pp. 4-250 to 4-257. No additional mitigation measures are required.

#### 4.2.1.1. Sensitive Species

BLM will take necessary actions to meet the policies set forth in sensitive species policy (BLM Manual 6840). BLM Manual 6840.22A states that "The BLM should obtain and use the best available information deemed necessary to evaluate the status of special status species in areas affected by land use plans or other proposed actions and to develop sound conservation practices. Implementation-level planning should consider all site-specific methods and procedures which are needed to bring the species and their habitats to the condition under which the provisions of the ESA are not necessary, current listings under special status species categories are no longer necessary, and future listings under special status species categories would not be necessary."

The PRB FEIS discusses impacts to sensitive species on pp. 4-257 to 4-273. Table 4.4 summarizes the habitat requirements and general impacts from oil and gas development on Wyoming BLM sensitive species that may be impacted by the proposed action. Some sensitive species are of particular concern in the project area, due to their demonstrated or suspected sensitivity to CBNG development or because they were recently considered for listing under the ESA. These species include bald eagle, black-tailed prairie dog, greater sage-grouse, mountain plover, and western burrowing owl. Bald eagle habitat and greater sage-grouse habitat are present in the project area, and those species are discussed in further detail in this section.

**Table 4.4 Summary of Sensitive Species Habitat and Project Effects.**

Common Name (scientific name)	Habitat	Project Effects	Rationale
Birds			
Baird's sparrow ( <i>Ammodramus bairdii</i> )	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground.	MIIH	Shortgrass prairie and sagebrush cover will be affected.
Bald eagle ( <i>Haliaeetus leucocephalus</i> )	Mature forest cover often within one mile of large water body with reliable prey source nearby.	MIIH	Existing and proposed overhead power.
Brewer's sparrow ( <i>Spizella breweri</i> )	Sagebrush shrubland	MIIH	Sagebrush cover will be affected.
Ferruginous hawk ( <i>Buteo regalis</i> )	Basin-prairie shrub, grasslands, rock outcrops	MIIH	Nesting habitat will be impacted and human activities will increase
Greater sage-grouse ( <i>Centrocercus urophasianus</i> )	Basin-prairie shrub, mountain-foothill shrub	MIIH	Sagebrush cover will be affected.
Loggerhead shrike ( <i>Lanius ludovicianus</i> )	Basin-prairie shrub, mountain-foothill shrub	MIIH	Sagebrush cover will be affected.
Sage sparrow ( <i>Amphispiza billneata</i> )	Basin-prairie shrub, mountain-foothill shrub	MIIH	Sagebrush cover will be affected.
Sage thrasher ( <i>Oreoscoptes montanus</i> )	Basin-prairie shrub, mountain-foothill shrub	MIIH	Sagebrush cover will be affected.
Fringed myotis ( <i>Myotis thysanodes</i> )	Conifer forests, woodland chaparral, caves and mines	MIIH	Construction may impact foraging areas and alter habitat conditions.
Long-eared myotis ( <i>Myotis evotis</i> )	Conifer and deciduous forest, caves and mines	MIIH	Construction may impact foraging areas and alter habitat conditions.
Swift fox ( <i>Vulpes velox</i> )	Grasslands	MIIH	Construction may impact denning/foraging areas and increase predators/competitors.
Townsend's big-eared bat ( <i>Corynorhinus townsendii</i> )	Caves and mines.	MIIH	Construction may impact foraging areas and alter habitat conditions.

**NI** - No Impact.

**MIH** - May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species.

**WIPV** - Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.

**BI** - Beneficial Impact

#### **4.2.1.1.1. Bald Eagle Direct and Indirect Effects**

Impacts to bald eagles are discussed in the PRB FEIS on pg. 4-251 to 4-253. A more recent study completed in 2004 suggests that two-tracks and improved project roads pose minimal collision risk to bald eagles. In one year of monitoring road-side carcasses the BLM BFO reported 439 carcasses, 226 along Interstates (51%), 193 along paved highways (44%), 19 along gravel county roads (4%), and 1 along an improved CBNG road (<1%) (Bills 2004). No road-killed eagles were reported; bald and golden eagles were observed feeding on 16 of the reported road-side carcasses (<4%). The risk of big-game vehicle-related mortality along CBNG project roads is so insignificant or discountable that when combined with the lack of bald eagle mortalities associated with highway foraging leads to the conclusion that CBNG project roads do not affect bald eagles.

Proposed overhead power poses an electrocution risk to bald eagles. Impacts will be mitigated to an acceptable level with construction of all proposed power to meet requirements in the 2003 Powder River Basin Final EIS.

#### **4.2.1.1.1.1. Cumulative Effects**

The cumulative effects for bald eagles associated with Alternative C are within the analysis parameters and impacts described in the PRB FEIS (pp. 4-251 to 4-253).

#### **4.2.1.1.2. Greater Sage-grouse Direct and Indirect Effects**

Implementation of Alternative C will further adversely impact already compromised nesting, brood rearing, late summer, and winter habitat, through loss of habitat and avoidance of habitat in proximity to the development. The following well locations were identified as directly removing sage-grouse habitat: 1442, 1043, 1042, 1044, 0441, 0442, 0443, and 0943. The direct loss of high quality habitat from the proposed development will impact the ability of this area to support sage-grouse populations in the future. Restoring functional sage-grouse habitat after loss has not yet proven successful and if it can be achieved it will take decades (USFWS 2010).

BLM will implement a timing limitation on all construction activities associated with the following wells to protect any nesting sage-grouse 1442, 1043, 1042, 1044, 0441, 0442, 0443, and 0943. Because nesting grouse have been shown to avoid infrastructure by up to 0.6 miles, the intent of this timing restriction is to decrease the likelihood that grouse will avoid these areas and increase habitat quality by reducing noise and human activities during the breeding season. Current well densities in the project area have placed the five leks within four miles into the WGFD extreme impact category. The additional direct and indirect impacts to sage-grouse are discussed in more detail in the PRB FEIS on pg. 4-257 to 4-273.

#### **4.2.1.1.2.1. Greater Sage-grouse Cumulative Effects**

Due to the extent of existing oil and gas development in the project area, the habitat present may not be functional, and most likely supports only a few, if any, grouse.

Recent research suggests that the cumulative and synergistic effects of current and foreseeable CBNG development within the vicinity of the project area are likely to impact the local sage-grouse population, H.D.U. Federal Oil POD Addition

cause declines in lek attendance, and may result in local extirpation. The cumulative impact assessment area for this project encompasses a four mile radius from the five sage-grouse leks that occur within four miles of the project boundary. Analysis of impacts up to four miles was recommended by the State Wildlife Agencies' Ad Hoc Committee for Consideration of Oil and Gas Development Effects to Nesting Habitat (2008). All five leks are considered extremely impacted by oil and gas development, the addition of the project wells will be additive but negligible.

The PRB FEIS states that “the synergistic effect of several impacts would likely result in a downward trend for the sage-grouse population, and may contribute to the array of cumulative effects that may lead to its federal listing. Local populations may be extirpated in areas of concentrated development, but viability across the Project Area (Powder River Basin) or the entire range of the species is not likely to be compromised (pg. 4-270).” Based on the impacts described in the Powder River Basin Oil and Gas Project FEIS and the findings of more recent research, the proposed action may contribute to a decline in male attendance at the five leks that occur within four miles of the project area, and, potentially, extirpation of the local grouse population.

The 2003 PRB EIS significance threshold and population viability assumptions are based on the analysis that sufficient functioning habitat for sage grouse will remain to support population viability within the project area. Because the Core/Focus areas support only approximately 25% of the sage-grouse population in the Powder River Basin, it is unlikely that the Core/Focus Area concept will be sufficient to support population viability without some sage-grouse persistence occurring outside of Core/Focus areas.

The Wyoming Game and Fish recommends managing sage-grouse outside Core areas with the objective of maintaining 50% of the local population, equating to a well density of less than three wells per section.

It is unknown how much area is needed to maintain a sage-grouse population (i.e. keep multiple age classes returning to leks) in an area for any given period of time. The shorter the time frame the fewer birds are needed and the smaller the area can be. The USFWS indicates that approximately 10,000 acres of all-season-of-use habitat may be required to sustain a population. The importance of maintaining some remnant populations of sage-grouse outside Core/Focus areas is underscored by the paltry success of sage-grouse transplantation efforts. If sage-grouse are extirpated entirely from an area, they are very difficult to reintroduce (Reese and Connelly 1997).

#### **4.3. West Nile Virus Direct and Indirect Effects**

This project is not likely to result in increased mosquito breeding habitat, and will not promote West Nile virus.

#### **4.4. Cultural Resources**

Non eligible site 48CA5533 and prehistoric isolated resource HDU#943 IF-1 will be impacted by the proposed project. Unevaluated site 48CA5538 is outside of the APE and will not be impacted by the proposed project. No historic properties will be impacted by the proposed project. Following the Wyoming State Protocol Section VI(A)(1) the Bureau of Land Management electronically notified the Wyoming State Historic Preservation Officer (SHPO) on 6/3/2010 that no historic properties exist within the APE. If any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. Further discovery procedures are explained in the Standard COA (General)(A)(1).

#### **4.5. Air Quality**

In the project area, air quality impacts would occur during construction (due to surface disturbance by earth-moving equipment, vehicle traffic fugitive dust, well testing, as well as drilling rig and vehicle H.D.U. Federal Oil POD Addition

engine exhaust) and production (including non-CBM well production equipment, booster and pipeline compression engine exhaust). The amount of air pollutant emissions during construction would be controlled by watering disturbed soils, and by air pollutant emission limitations imposed by applicable air quality regulatory agencies. Air quality impacts modeled in the PRB FEIS concluded that projected oil & gas development would not violate any local, state, tribal or federal air quality standards.

**DESCRIPTION OF PROPOSED MITIGATION MEASURES:**

Implementation of committed mitigation measures contained in the Surface Use Plan of Operations and Drilling Plans, in addition to the following Conditions-of-Approval, would ensure that no adverse environmental impacts would result from approval of the proposed action: Refer to the H.D.U. Federal Oil POD Addition Conditions of Approval for further detail.

**5. CONSULTATION/COORDINATION**

Contact	Title	Organization	Present at Onsite?
Brad Rogers	Wildlife Biologist	US Fish & Wildlife Service	N
Mary Hopkins	Interim WY SHPO	Wyoming State Historic Preservation Office	N

**6. OTHER PERMITS REQUIRED**

A number of other permits are required from Wyoming State and other Federal agencies. These permits are identified in Table A-1 in the PRB FEIS Record of Decision.

**7. REFERENCES AND AUTHORITIES:**

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## **8. REVIEWER**

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Casey Freise, Supervisory Natural Resource Specialist  
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Ardeh Hahn, Archaeologist  
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