DECISION RECORD
For Yates Petroleum Corporation, Oil Well, Sunrise Federal #32 (Reentry) in the Sunrise POD
Environmental Assessment (EA) WY-070-EA11-287
Bureau of Land Management, Buffalo Field Office

BLM approves the application for permit to drill (APD) / plan of development (POD) for a reentry oil well and associated pipelines and roads in and adjacent to the Sunrise POD. This approval required a new EA, and also incorporated by reference the EAs for the Sunrise Starlight, K-Bar and All Night Creek POD. This project has conditions of approval (COAs).

Compliance. This decision complies with:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701).
- Mineral Leasing Act of 1920 (30 U.S.C. 181) and as prescribed in 43 CFR Part 3160 to include On Shore Order No. 1.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- Endangered Species Act of 1973 (ESA) (16 USC 1531).
- Migratory Bird Treaty Act (16 USC 703).
- DOI Order 3310, Protecting Wilderness Characteristics, 2010;
- Buffalo (1985, 2001) and Powder River Basin Final Environmental Impact Statement (FEIS), 2003.
- Buffalo Resource Management Plan, 1985, Amendments 2001, 2003.

The Selected Alternative.
Features. BLM's decision approves Alternative B, a POD for the construction and re-drilling of an oil well and its associated infrastructure. More details on the access, design features, and construction practices are found in the project. The proposed action involves:

Activity	Length	Width	Acres of Disturbance
Reconstructed Well Pad	400'	400'	4
Water and Gas Pipeline	0.64 miles	40'	3
Access Road and Pipeline Corridor	0.09 miles	75'	0.82
Total Disturbance			**8 acres**

This approval is limited by operator compliance with the COAs.

THE FINDING OF NO SIGNIFICANT IMPACT. The FONSI for WY-070-EA11-287 found no significant impacts on the human environment aside from those in the PRB FEIS (2003), thus an EIS was not required.

COMMENT OR NEW INFORMATION SUMMARY.
The BFO integrated new information into this EA: DOI Order 3310, and an RMP maintenance action concerning sage-grouse conservation.

DECISION RATIONALE.
The decision authorizing Alternative B, per EA WY-070-EA11-287, is based on the following:

1. The Operator, in their POD, is aware of applicable federal, state and local laws and regulations.

2. The Operator certified that a Surface Use Agreement exists with the landowners or bonded.

3. Alternative B will not result in any undue or unnecessary environmental degradation.

4. It is in the public interest to approve this POD as this development will help meet the nation's future energy needs, and will help to stimulate local economies by through stability for the workforce.

5. This approval is subject to mitigation and monitoring requirements contained in the RMP Amendment for the Powder River Oil and Gas Project (RMP) approved in2003, and with this POD's COAs.

6. This federal action is clearly lacking wilderness characteristics because it has surface areas with extensive oil and gas development. The Sunrise POD, WY-070-02-260, was incorporated into this project's EA analysis by reference.

7. Approval of this alternative conforms with the Final Powder River Basin Oil and Gas Project Environmental Impact Statement and Proposed Plan Amendment (PRB FEIS) (2003), Record of Decision and Resource Management Plan Amendments for the Powder River Basin Oil and Gas Project (PRB FEIS ROD), (refer to Appendix E of PRB FEIS ROD page E-1), and the Approved RMP and Amendments (1985), Buffalo Field Office (BFO), 2001, and 2003.

ADMINISTRATIVE REVIEW AND APPEAL. 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.

For Field Office Manager: _____ Date: 8/12/11

FINDING OF NO SIGNIFICANT IMPACT
For Yates Petroleum Corporation, Oil Well, Sunrise Federal #32 (Reentry) in the Sunrise POD
Environmental Assessment (EA) WY-070-EA11-287
Bureau of Land Management, Buffalo Field Office

FINDING OF NO SIGNIFICANT IMPACT:
On the basis of the information contained in the EA and all information available to me, it is my finding that: (1) the implementation of Alternative B will not have significant environmental impacts beyond those already addressed in Powder River Basin Final Environmental Impact Statement (PRB FEIS) to which the EA tiers; (2) Alternative B conforms to the Buffalo Field Office Resource Management Plan (RMP) (1985, 2001, 2003) and DOI Order 3310; and (3) Alternative B does not constitute a major federal action having a significant effect on the human environment. Thus there is no requirement for an environmental impact statement. I base this finding on consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), regarding both the context and intensity of the impacts described in the EA WY-070-EA11-287, which is incorporated here by reference.

CONTEXT:
Mineral development is a long-standing land use within the PRB. More than 42% of the nation's coal comes from the PRB. The PRB FEIS reasonably foreseeable development predicted and analyzed the development of 51,000 CBNG wells and 3,200 oil wells and their infrastructure. Additional CBNG development in Alternative B is insignificant in the national, regional, and local context. See also: Sunrise plan of development (POD) EA: WY-070-02-260.

INTENSITY:
The implementation of Alternative B will result in beneficial effects in the forms of energy and revenue production however; there will also be effects to the environment. Design features and mitigation measures included in Alternative B to minimize adverse environmental effects. The preferred alternative does not pose a significant risk to public health and safety. The project's geographic area does not contain unique characteristics identified in the 1985 RMP, 2003 PRB FEIS, or other legislative or regulatory processes. BLM used relevant scientific literature and professional expertise 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.

Infrastructure development of the nature proposed with this project and similar projects 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. This project area is clearly lacking in wilderness characteristics because it is in developed oil and gas fields. 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.

The implementation of the selected alternative best meets the stated purpose and need for the proposed

action. With the application of mitigating measures incorporated in the POD design and in Alternative B, the sage-grouse population viability in the Powder River Basin will not be significantly compromised due to the larger scope of planning actions and research initiated by the BLM, Buffalo Field Office.

For Field Manager: _____ Date: 8/12/11

ENVIRONMENTAL ASSESSMENT
WY-070-EA11-287, Yates Petroleum Corporation
Oil Well, Sunrise Federal #32 (Reentry) in the Sunrise POD
Bureau of Land Management, Buffalo Field Office

1. INTRODUCTION

This environmental analysis (EA) assesses the impacts of a proposal to reenter a plugged and abandoned oil well, the Southland Royalty-All Night Creek Federal #1-12. The reentry well is the Sunrise Federal #32 well, T43N R74W Section 12, federal lease WYW139670. This EA tiers to the previously analyzed and approved Sunrise federal plan of development (POD), August 29, 2002. This EA also tiers to and incorporates by reference the analysis in the *Final Environmental Impact Statement and Proposed Plan Amendment for the Powder River Basin Oil and Gas Project* (PRB FEIS), (2003), and the PRB FEIS Record of Decision (ROD) and Resource Management Plan Amendments (RMP) for the PRB Oil and Gas Project (2003) pursuant to 40 CFR 1508.28 and 1502.21. These documents are available for review at the BLM Buffalo Field Office (BFO) or on our website. This EA addresses site-specific impacts that were not covered in the PRB FEIS, or in the EAs for the Sunrise plan of development (POD), WY-070-02-260, and the APD/POD for the Sunrise Federal #32 reentry oil well.

1.1. Need

The need is to determine how and under what conditions to allow Yates Petroleum Corporation (Yates or operator) to develop the oil and gas resources on this federal leasehold while balancing multiple uses and natural resource conservation. The BLM recognizes the extraction of gas is essential to meeting the nation's future needs for energy. Private exploration and development of federal gas reserves are integral to the bureau's oil and gas leasing programs under the authority of the Mineral Leasing Act of 1920 (MLA), as amended, and the Federal Land Policy Management Act (FLPMA) of 1976. The oil and gas leasing program encourages the development of domestic oil and gas reserves and reduces the U.S. dependence on foreign energy. This APD supports the goals and objectives outlined in the 1985 RMP, the 2001 Approved RMP for the public lands administered by the BFO, and the 2003 PRB FEIS and Amendments. This project helps move the Sunrise #32 project area toward the desired conditions for mineral development with appropriate mitigation consistent with the goals, objectives, and decisions outlined in this EA.

1.2. Conformance with Land Use Plan, Statutes, Regulations or Other Plans

The proposed POD 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 and RMP Amendments (2003), and DOI Order 3310 as required by 43 CFR 1610.5. Rights-of-way are allowable on BLM-administered lands per the MLA, FLPMA, and BLM regulations (43 CFR 2880).

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1. Alternative A – No Action

The PRB FEIS considered a no action alternative, Volume 1, pp. 2-54 to 2-62. This alternative must also consider and combine the PRB FEIS analysis with the subsequent analysis and development from the adjacent and intermingled PODs: Yates Sunrise, WY-070-EA02-260; Yates Starlight, WY-070-EA02-210; Yates K-Bar, WY-070-03-090; and Williams All Night CK VI, WY-070-EA05-360. This comports to the PRB FEIS which analyzed the reasonably foreseeable development rolling across the PRB of over 51,000 CBNG and 3,200 oil wells. The no action alternative would consist of no new federal wells. This alternative would deny the APD and /or POD requiring the operator to resubmit an APD or a POD that complies with statutes and the reasonable measures in the PRB RMP Record of Decision (ROD) in order

to lawfully exercise conditional lease rights. This alternative also could, through secretarial discretion suspend the leasehold, or could administratively cancel or withdraw the lease if improperly awarded, or seek to cancel the lease. It is not possible in the abstract to identify every interest and that is beyond the scope here.

2.2. Alternative B - Operator Proposed Action with BLM Mitigation

The proposed action is for construction and drilling of an oil well and the associated infrastructure such as pipelines and roads. This well will tie into existing facilities. This POD is subject to the conditions-of-approval (COAs). More details on the project's area access, design features, and construction practices are found in the Sunrise #32 Plan of Development (POD). The plan's design and review ensured that environmental impacts to both surface and subsurface resources are minimal. Also see the Sunrise POD, permitted on August 29, 2002 which depicts existing wells, roads and utility corridors and other infrastructure, which are both incorporated here by reference. This project's design, incorporated existing roads and utility corridors, as feasible.

Proposed Action Title/Type: Yates Petroleum Corporation, Sunrise Federal #32 reentry oil well and associated infrastructure. The project involves:

Activity	Length	Width	Acres of Disturbance
Reconstructed Well Pad	400'	400'	4
Water and Gas Pipeline	0.64 miles	40'	3
Access Road and Pipeline Corridor	0.09 miles	75'	0.82
Total Disturbance			**8 acres**

Affected Surface Owners: Patricia J. Moore Revocable Trust; and Drake Family Trust

Design Features of the Proposed Action

- Pipeline route will be in corridors to minimize impacts to soils and vegetation. The original access route will be reused to access this well.
- Noxious and invasive weeds control, physical and chemical treatments.
- The design includes stockpiling topsoil, protecting and redistributing the topsoil over disturbed areas to re-establish a self-perpetuating native plant community.

3. AFFECTED ENVIRONMENT

The BFO received this APD on January 10, 2011 and conducted a field onsite inspection of the proposed action on May 4, 2011.

This section describes the physical and regulatory environment affected by the implementation of the alternatives described in Section 2. Aspects of the affected environment described here focus on the relevant major issues that were not raised in the earlier EA # WYW-070-02-260, August 29, 2002 for Sunrise POD. The proposed project area is in a highly developed oil and coalbed natural gas field, clearly lacking in wilderness characteristics. Four different oil and gas PODs, developed federal leases in the project area. Table 3.1 lists existing NEPA documentation that analyzed and permitted wells and associated infrastructure in the project area which includes the sites for the proposed well site and pipelines.

Table 3.1. Approved PODs and EAs Contiguous or Adjacent to Sunrise Federal #32 Reentry

Approved POD	NEPA Document	Approval Date
Yates: Sunrise	WY-070-02-260	8/29/02
Yates: Starlight	WY-070-02-210	8/29/02
Yates: K-Bar	WY-070-03-090	2/24/03
Williams: All Night CK VI	WY-070-05-360	12/1/05

The following critical resources (subject to requirements specified in statute, regulation, or executive order) other than wildlife and cultural, received a "hard look" analysis (see Table 3.1) and are either not present, or are unaffected by the proposed sundry or the alternatives in this EA and are not subject to further analysis. This EA will analyze wildlife and cultural issues pertinent for this POD but were inapplicable in previous NEPA analysis.

Table 3.2. Affected Resources

Resource	Resource Present	Resource Affected	Table 3.1 EAs Sufficient	PRB FEIS Sufficient	Notes
Air quality	Yes	Yes	Yes	Yes	PRB FEIS: 3-291-298, 4-404-406, 4-377-386
Cultural	No	No	No	No	PRB FEIS: 3-206-228, 4-273-288, 4-394
Native American religious concerns	No	No		No	PRB FEIS: 3-218-219, 3-228, 4-277-278
Traditional Cultural Properties	No	No		No	PRB FEIS: 3-218-219, 4-277-278
Mineral Potential	Yes	No		Yes	PRB FEIS: 3-66-70, 3-230, 4-127-129
Coal	No				PRB FEIS: 3-66
Fluid Minerals	Yes				PRB FEIS: 3-68-69
Locatable Minerals	Possible	No		NA	
Other Leasables	No	No		NA	
Salable Minerals	Possible	No		NA	
Paleontology	No				PRB FEIS: 3-65-66, 4-125-127
PFYC 3	Yes	Yes	No	Yes	PRB FEIS: 3-65-66, 4-125-127
PFYC 5	No				PRB FEIS: 3-65-66, 4-125-127
Rangeland management	Yes	Yes	Yes	Yes	Not in PRB FEIS
Existing range improvements	Yes	No			
Proposed range improvements	No	No			
Recreation	Yes	No	Yes	Yes	PRB FEIS: 3-263-273, 4-319-328

Resource	Resource Present	Resource Affected	Table 3.1 EAs Sufficient	PRB FEIS Sufficient	Notes
Developed site	No				PRB FEIS: 3-266, 4-326
Walk-in-Area	No				
Social & Economic	Yes	Yes	Yes	Yes	PRB FEIS: 3-275-289, 4-336-370
Soils & Vegetation	Yes	Yes	Yes	Yes	Addressed in EA. PRB FEIS: 3-78-107, 4-134-152, 4-153-164, 4-393-394, 4-406
Erosion Hazard	Yes	Yes	Yes	Yes	Addressed in EA. PRB FEIS: 3-82, 4-135
Poor Reclamation Potential	No				Addressed in EA. PRB FEIS: 3-86, 4-149-152
Slope hazard	No	No			Addressed in EA. PRB FEIS: 3-81, 4-135
Forest products	No				
Invasive Species	Yes	Yes	Yes	Yes	Addressed in EA. PRB FEIS: 3-103-108, 4-153-172
Wetlands/Riparian	No				PRB FEIS: 4-117 to 124 3-108-113, 4-172-178, 4-406
Special Designations	No				
Proposed ACEC	No				
Wild & Scenic River	No				PRB FEIS: 3-273
Wilderness Characteristics/Citizen Proposed	No	No	No	No	DOI Order 3310
WSA	No				
Visual Resources	No				PRB FEIS: 3-252-263, 4-302-314, 4-403
Class II	No				
Class III	No				
Water	No				PRB FEIS: 3-1-56, 4-1-122, 4-135, 4-33, 4-405
Floodplains	No				
Ground water	Yes	No			PRB FEIS: 3-1-30, 4-1-69, 4-392, 4-405

Resource	Resource Present	Resource Affected	Table 3.1 EAs Sufficient	PRB FEIS Sufficient	Notes
Surface water	No				PRB FEIS: 4-85 to 86, 4-117 to 124 3-36-56, 4-69-122, 4-393, 4-405
Drinking water	No				PRB FEIS: 3-52, 4-50-52
Wildlife	Yes	Yes	No	Yes	PRB FEIS: 3-113-170, 4-179-249, 4-397-399
ESA listed, proposed, or candidate species	Yes	Yes	No	No	PRB FEIS: 3-174-178, 4-251-255, 4-255-273
BLM sensitive species	Yes	Yes	No	Yes	PRB FEIS: 3-189-206, 4-255-273
West Nile virus potential	Yes	No	Yes		

3.1. Wildlife

BLM consulted several resources to identify wildlife species that may occur in the proposed project area. Consulted resources included the wildlife database compiled and managed by the BLM Buffalo Field Office (BFO) wildlife biologists, the PRB FEIS, the Wyoming Game and Fish Department (WGFD) big game and sage-grouse maps, and the Wyoming Natural Diversity Database (WYNDD).

Tony Wyllie, wildlife biologist with Yates Petroleum Corporation, performed a habitat assessment and wildlife inventory surveys. Wyllie conducted surveys for mountain plover and raptor nests according to Powder River Basin Interagency Working Group (PRBIWG) accepted protocol in 2011 (YPC 2011). BLM biologists performed a habitat assessment for greater sage-grouse, sharp-tailed grouse, bald eagle, prairie dog colonies, blowout penstemon, and Ute ladies'-tresses orchid habitat during the May 4, 2011 onsite. PRBIWG accepted protocol is available on the BFO internet website at:
http://www.blm.gov/wy/st/en/field_offices/Buffalo/wildlife.html.

WGFD is the agency responsible for management of wildlife populations in the state of Wyoming. WGFD developed several guidance documents that BLM BFO wildlife staff relies upon in evaluating impacts to wildlife and wildlife habitats. WGFD documents used to analyze the proposed project under the current analysis are referenced in this section.

3.1.1. Habitat Types

Habitats located in the project area primarily consist of gently rolling sagebrush grasslands that were converted to grasslands. Native grasses and perennial forbs ranging in height from 4 to 15 inches, dominate the grasslands, with taller vegetation occurring near the reclaimed areas surrounding the CBNG well and plugged and abandoned (P&A) marker where the operator is proposing the Sunrise Federal #32 well location. Wyoming big sagebrush occurs in sparse to moderately dense stands in areas within 2 miles of the proposed well location, primarily to the east and southeast. No major drainages occur in the area, and perennial water is not present in the project area.

3.1.2. Threatened, Endangered, Proposed, Candidate, and BLM Sensitive Species

3.1.2.1. Threatened and Endangered Species

The project will not impact threatened, endangered, candidate and proposed species occurring in the area

beyond the level analyzed in the PRB FEIS. The PRB FEIS discussed this affected environment on pp. 3-174 to 3-179, and 3-194 to 3-199. Blowout penstemon was not listed when the PRB FEIS was written. A description of habitat and presence for threatened, endangered, and candidate species is present in Table 4.2 located in Section 4.2.1.1.1 below.

Suitable habitat for black-footed ferret, blowout penstemon, and Ute ladies'-tresses orchid is not present in the project area and the species are unlikely to occur.

No occupied sage-grouse leks occur within 4 miles of the proposed project. The Winland Lek is approximately 1.4 miles northwest of the proposed well location, and is classified as abandoned by the WGFD (WGFD 2010). Sage-grouse habitat is not present directly adjacent to the proposed well location. Habitat models indicate high quality nesting/brood-rearing and winter habitat within 2 miles of the project area; however, extensive existing oil and gas development in the mapped areas likely preclude grouse use.

3.1.2.2. Sensitive Species

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

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

The authority for the sensitive species policy and guidance comes from the Endangered Species Act of 1973, Title II of the Sikes Act; the Federal Land Policy and Management Act (FLPMA) of 1976; the Department Manual 235.1.1A, and BLM policy. BLM Wyoming sensitive species are not likely to be impacted beyond the level analyzed in the PRB FEIS. The PRB FEIS discusses the affected environment for BLM sensitive species on pp. 3-189 to 3-201. Table 4.3, below, summarizes a description of habitat and species presence for BLM sensitive species.

3.1.3. Big Game

The PRB FEIS discusses the affected environment for pronghorn and mule deer on pp. 3-117 to 3-122 and pp. 3-127 to 3-132, respectively. The project area contains winter-yearlong range for pronghorn antelope and yearlong range for mule deer. White-tailed deer may also occur in the area. Winter-Yearlong use is when a population or a portion of a population of animals makes general use of the documented suitable habitat sites in this range on a year-round basis. During the winter months there is a significant influx of additional animals into the area from other seasonal ranges. Yearlong use is when a population of animals makes general use of suitable documented habitat sites in the range on a year round basis. Animals may leave the area under severe conditions.

3.1.4. Migratory Birds

The PRB FEIS discusses the affected environment for migratory birds on pp. 3-150 to 3-153. Migratory birds are birds that migrate for breeding and foraging at some point in the year. The BLM-USFWS MOU (2010) promotes the conservation of migratory birds, as directed through Executive Order 13186 (Federal Register V. 66, No. 11). BLM must include migratory birds in every NEPA analysis of actions that have potential to affect migratory bird species of concern to fulfill obligations under the MBTA. Recent MBTA and BGEPA prosecutions or settlements cost companies millions in fines and restitution (which was usually retrofitting powerlines to discourage perching to minimize electrocution or shielding ponds holding toxic substances): U.S. v. Moon Lake Electric Ass'n, 45 F. Supp. 2d 1070 (D. Colo. 1999); U.S. v. Phelps Dodge (D. NM. 2004) ($15,000 fine and restitution and undisclosed costs for retrofitting); U. S. v. PacifiCorp (D. Wyo. 2009) (settled for $10.5 million in fines, restitution, and retrofitting); U.S. v. Exxon Mobile (Colo. 2009) settled for $600,000 in fines and restitution); and U.S. v. Apollo Energies,

Inc. 611 F3d 679 (10th Cir. 2010). BLM encourages voluntary design features and conservation measures that comport with those in the programmatic mitigation in Appendix A of the PRB ROD (2003).

Habitats occurring near the proposed well locations include mixed grass and shortgrass prairie types. A wide variety of migratory birds may be found in the proposed project area at some time throughout the year. Migratory birds are those that migrate for the purpose of breeding or foraging at some point in the year. Many species that are of high management concern use shrub-steppe and shortgrass prairie areas for their primary breeding habitats (Saab and Rich 1997). Nationally, grassland and shrubland birds declined more consistently than any other ecological association of birds over the last 30 years (WGFD 2009).

The WGFD Wyoming Bird Conservation Plan (Nicholoff 2003) identified 3 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. Those species anticipated to occur in the project area are in Table 3.3.

Table 3.3. Migratory Bird Species Found in Shortgrass Prairie in northeast WY (Nicholoff 2003)

Level	Species	Wyoming BLM Sensitive
Level I	Baird's Sparrow	Yes
	Burrowing Owl	Yes
	Ferruginous hawk	Yes
	Long-billed curlew McCown's longspur	Yes
	Mountain plover	Yes
	Short-eared owl	
	Upland sandpiper	
Level II	Bobolink	
	Dickcissel	
	Chestnut-collared longspur	
	Grasshopper sparrow	
	Lark bunting	

3.1.5. Raptors

The PRB FEIS discusses the affected environment for raptors on pp. 3-141 to 3-148. Mr. Wyllie (Yates) performed raptor nest occupancy surveys and searches for new nests on April 15, May 4, May 18, and June 1, 2011 within 0.5 miles of the proposed project area. One ferruginous hawk nest (BLM #2436) is approximately 440 feet from the proposed well location. The BLM biologist examined the nest during the May 4th onsite, confirming that the nest was only remnants of the former nest bowl.

3.1.6. Plains Sharp-tailed Grouse

The PRB FEIS discusses the affected environment for plains sharp-tailed grouse on pp. 3-148 to 3-150. No known sharp-tailed dancing grounds occur in the project area. Marginal nesting and brood-rearing habitat is present surrounding the project area, however, extensive existing oil and gas development likely preclude use and the species is not suspected to occur.

3.2. Cultural Resources

Yates performed a Class III cultural resource inventory for the Sunrise #32 well prior to on-the-ground project work (BFO project no. 70110011). Yates provided BFO with a class III cultural resource inventory following the Archeology and Historic Preservation, Secretary of the Interior's Standards and Guidelines (48CFR190) and the *Wyoming State Historic Preservation Office Format, Guidelines, and*

Standards for Class II and III Reports. Seth Lambert, BLM Archaeologist, reviewed the report for technical adequacy and compliance with BLM standards, and determined its adequacy. Previously reviewed and accepted Class III cultural resource inventory (BFO project #70020188) covered the remainder of the project area.

4. ENVIRONMENTAL EFFECTS

This section describes the environmental effects of the proposed action, Alternative B. The effects analysis addresses the direct and indirect effects of implementing the proposed action, the cumulative effects of the proposed action combined with reasonably foreseeable federal and non-federal actions, identifies and analyzes mitigation measures (COAs), and discloses any residual effects remaining following mitigation. For a discussion of the environmental consequences of Alternative A, the no action, see the PRB FEIS.

4.1. Alternative A

The PRB FEIS analyzed the No Action Alternative as Alternative 3 in the PRB FEIS, and is incorporated by reference into this EA. Information specific to resources for this alternative is included in the PRB Final EIS on pages listed in Table 4.1.

Table 4.1. Location of Discussion of the No Action Alternative in the PRB FEIS

Resource		Type of Effect	Page(s) of PRB FEIS
Project Area Description	Geologic Features and Mineral Resources	Direct and Indirect Effects	4-164 and 4-134
		Cumulative Effects	4-164 and 4-134
Soils, Vegetation, and Ecological Sites	Soils	Direct and Indirect Effects	4-150
		Cumulative Effects	4-152
	Vegetation	Direct and Indirect Effects	4-163
		Cumulative Effects	4-164
	Wetlands/Riparian	Direct and Indirect Effects	4-178
		Cumulative Effects	4-178
Wildlife	Sensitive Species - Greater Sage-Grouse	Direct and Indirect Effects	4-271
		Cumulative Effects	4-271
	Aquatic Species	Direct and Indirect Effects	4-246
		Cumulative Effects	4-249
	Migratory Birds	Direct and Indirect Effects	4-234
		Cumulative Effects	4-235
	Waterfowl	Direct and Indirect Effects	4-230
		Cumulative Effects	4-230
	Big Game	Direct and Indirect Effects	4-186
		Cumulative Effects	4-211
	Raptors	Direct and Indirect Effects	4-224
		Cumulative Effects	4-225
Water	Ground Water	Direct and Indirect Effects	4-63
		Cumulative Effects	4-69
	Surface Water	Direct and Indirect Effects	4-77
		Cumulative Effects	4-69
Economics and Recovery of CBNG Resources		Direct and Indirect Effects	4-362
		Cumulative Effects	4-370
Cultural Resources		Direct and Indirect Effects	4-286

Air Quality	Direct and Indirect Effects	4-386
	Cumulative Effects	4-386
Visual Resources	Direct and Indirect Effects	4-313
	Cumulative Effects	4-314

4.2. Alternative B

The resources identified as being adequately analyzed in previous NEPA documentation (Table 3.2) were reviewed for environmental consequences. The direct, indirect and cumulative effects that would result from implementation of the new proposed action are similar (both quantitatively and qualitatively) to effects analyzed in the existing NEPA documentation listed in Table 3.1 and will not be analyzed further.

NOTE: The proposed project will have potential consequences effecting wildlife and cultural resources thus environmental consequences will be reviewed in the following sections.

4.2.1. Wildlife

4.2.1.1. Threatened, Endangered, Proposed and Candidate Species

4.2.1.1.1. Threatened and Endangered Species

The effects to threatened, endangered, and candidate species are summarized in Table 4.1 below, and described in the PRB FEIS on pp. 4-250 to 4-273.

Table 4.1. Summary of Threatened and Endangered Species Habitat and Project Effects

Common Name	Habitat	Presence	Project Effects	Rationale
Endangered				
Black-footed ferret	Black-tailed prairie dog colonies or complexes > 1,000 acres.	NP	NE	No known colonies present.
Blowout penstemon	Sparsely vegetated, shifting sand dunes	NP	NE	Habitat not present
Threatened				
Ute ladies'-tresses orchid	Riparian areas with permanent water	NP	NE	Habitat not present
Candidate				
Greater Sage-grouse	Basin-prairie shrub, mountain-foothill shrub	NS	NI	Sagebrush habitat present in the surrounding area, but use is likely precluded by existing oil and gas development.

Presence	Project Effects
K - Known, documented observation within project area. **S** - Habitat suitable and species suspected, to occur within the project area. **NS -** Habitat suitable but species is not suspected to occur within the project area. **NP -** Habitat not present and species unlikely to occur within the project area.	**LAA** - Likely to adversely affect **NE** - No Effect **NLAA** - May Affect, not likely to adversely affect individuals or habitat. **NLJ** – Not likely to jeopardize the continued existence of the species **MIIH** – May impact individuals and habitat **NI** – No impact.

4.2.1.1.2. 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 effects to sensitive species resulting from implementation of the project are identified in Table 4.2 below, and discussed in the PRB FEIS discusses impacts to sensitive species on pp. 4-257 to 4-265.

Table 4.2. Summary of Sensitive Species Habitat and Project Effects.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Northern leopard frog (*Rana pipiens*)	Beaver ponds and cattail marshes from plains to montane zones.	NP	NI	Habitat not present.
Columbia spotted frog (*R*anus pretiosa)	Ponds, sloughs, small streams, and cattails in foothills and montane zones. Confined to headwaters of the S Tongue R drainage and tributaries.	NP	NI	The project area is outside the species' range, and the species is not expected to occur .
Fish				
Yellowstone cutthroat trout (*Oncoryhynchus clarki bouvieri*)	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	NI	The project area is outside the species' range, and the species is not expected to occur.
Birds				
Baird's sparrow (*Ammodramus bairdii*)	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground.	S	MIIH	Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Bald eagle (*Haliaeetus leucocephalus*)	Mature forest cover often within one mile of large water body with reliable prey source nearby.	S	MIIH	No known nests or roosts are present near the project area. Surface disturbing and maintenance activities may impact foraging eagles and the species may avoid the area.
Brewer's sparrow (*Spizella breweri*)	Sagebrush shrubland	NP	NI	Habitat not present.
Ferruginous hawk (*Buteo regalis*)	Basin-prairie shrub, grasslands, rock outcrops	NS	NI	Nest 2436 is in remnant condition, and located within 440 feet of a producing gas well. It is unlikely that ferruginous hawks will initiate nesting activities within 0.5 miles of the proposed location.
Loggerhead shrike (*Lanius ludovicianus*)	Basin-prairie shrub, mountain-foothill shrub	NP	NI	Habitat not present.
Long-billed curlew (*Numenius americanus*)	Grasslands, plains, foothills, wet meadows	S	MIIH	Nesting and foraging habitat may be impacted by dust, noise, and human activities. Species may avoid area.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Mountain Plover	Short-grass prairie with slopes < 5%	S	MIIH	Nesting and foraging habitat may be impacted by dust, noise, and human activities. Species may avoid area.
Northern goshawk (*Accipiter gentilis*)	Conifer and deciduous forests	NP	NI	Habitat not present.
Peregrine falcon (*Falco peregrinus*)	Cliffs	NP	NI	Habitat not present.
Sage sparrow (*Amphispiza billneata*)	Basin-prairie shrub, mountain-foothill shrub	NP	NI	Habitat not present.
Sage thrasher (*Oreoscoptes montanus*)	Basin-prairie shrub, mountain-foothill shrub	NP	NI	Habitat not present.
Trumpeter swan (*Cygnus buccinator*)	Lakes, ponds, rivers	NP	NI	Habitat not present.
Western Burrowing owl (*Athene cunicularia*)	Grasslands, basin-prairie shrub	NP	NI	Habitat not present.
White-faced ibis (*Plegadis chihi*)	Marshes, wet meadows	NP	NI	Habitat not present.
Yellow-billed cuckoo (*Coccyzus americanus*)	Open woodlands, streamside willow and alder groves	NP	NI	Habitat not present.
Mammals				
Black-tailed prairie dog (*Cynomys ludovicianus*)	Prairie habitats with deep, firm soils and slopes less than 10 degrees.	NP	NI	No known colonies present within 0.25 miles of the proposed well location.
Fringed myotis (*Myotis thysanodes*)	Conifer forests, woodland chaparral, caves and mines	NP	NI	Habitat not present.
Long-eared myotis (*Myotis evotis*)	Conifer and deciduous forest, caves and mines	NP	NI	Habitat not present.
Swift fox (*Vulpes velox*)	Grasslands	NS	NI	Lack of prey source and proximity to existing energy development likely preclude the presence of the species.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Caves and mines.	NP	NI	Habitat not present.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Plants				
Porter's sagebrush (*Artemisia porteri*)	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft.	NP	NI	Habitat not present.
William's wafer parsnip (*Cymopterus williamsii*)	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	NI	Project area outside of species' range.

Presence
K - Known, documented observation within project area.
S - Habitat suitable and species suspected, to occur within the project area.
NS - Habitat suitable but species is not suspected to occur within the project area.
NP - Habitat not present and species unlikely to occur within the project area.

Project Effects
NI - No Impact.
MIIH - 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

4.2.1.2. Big Game

4.2.1.2.1. Direct and Indirect Effects

The PRB FEIS discusses impacts to big game animals from CBM and oil development on pp.4-181 to 4-215.Big game would likely be displaced from the project area during drilling and construction. A study in central Wyoming reported that mineral drilling activities displaced mule deer by more than 0.5 miles (Hiatt and Baker 1981). The WGFD indicates a well density of 8 wells per section creates a high level of impact for big game and that avoidance zones around mineral facilities overlap creating contiguous avoidance areas (WGFD 2004). A multi-year study on the Pinedale Anticline suggests not only do mule deer avoid mineral activities, but after 3 years of drilling activity the deer have not become accustomed to the disturbance (Madson 2005).

Big game animals often return to the project area following construction; however, populations will likely be lower than prior to project implementation as the human activities associated with operation and maintenance continues displacing big game. Mule deer are more sensitive to operation and maintenance activities than pronghorn, and, as the Pinedale Anticline study suggests, mule deer do not readily habituate. A study in North Dakota stated "Although the population (mule deer) had over seven years to habituate to oil and gas activities, avoidance of roads and facilities was determined to be long term and chronic" (Lustig 2003). Deer have even been documented to avoid dirt roads that were used only by 4-wheel drive vehicles, trail bikes, and hikers (Jalkotzy et al. 1997).

Reclamation activities that occur within big game habitats during the spring will likely displace does and fawns due to the human presence in the area. This may cause reduced survival rate of does and fawns that must expend increased energies to avoid such activities.

4.2.1.2.2. Cumulative Effects

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

4.2.1.2.3. Mitigation Measures

No mitigation is proposed with Alternative B.

4.2.1.2.4. Residual Impacts

No residual impacts area anticipated.

4.2.1.3. Migratory Birds

4.2.1.3.1. Direct and Indirect Effects

The PRB FEIS discusses direct and indirect effects to migratory birds (pp. 4-231 to 4-235). Disturbance of habitat in the project area is likely to impact migratory birds. Native habitats will be lost directly with the construction of wells, roads, and pipelines. Reclamation and other activities that occur in the spring may be detrimental to migratory bird survival. Prompt re-vegetation of short-term disturbance areas should reduce habitat loss impacts. Activities will likely displace migratory birds farther than the immediate area of physical disturbance. Drilling and construction noise can be troublesome for songbirds by interfering with the males' ability to attract mates and defend territory, and the ability to recognize calls from conspecifics (BLM 2003).

Habitat fragmentation will result in more than just a quantitative loss in the total area of habitat available; the remaining habitat area will also be qualitatively altered (Temple and Wilcox 1986). Ingelfinger (2004) identified that the density of breeding Brewer's sparrows declined by 36% and breeding sage sparrows declined by 57% within 100 meters of dirt roads within a natural gas field. Effects occurred along roads

with light traffic volume (greater than12 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.

Those species that are edge-sensitive will be displaced further away from vegetative edges due to increased human activity, causing otherwise suitable habitat to be abandoned. If the interior habitat is at carrying capacity, then birds displaced from the edges will have no place to relocate. One consequence of habitat fragmentation is a geometric increase in the proportion of the remaining habitat that is near edges (Temple 1986). In severely fragmented habitats, all of the remaining habitat may be so close to edges that no interior habitat remains (Temple and Cary 1988). Over time, this leads to a loss of interior habitat species in favor of edge habitat species. Other migratory bird species that utilize the disturbed areas for nesting may be disrupted by the human activity, and nests may be destroyed by equipment.

Migratory bird species in the PRB 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.

4.2.1.3.2. Cumulative Effects

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

4.2.1.3.3. Mitigation Measures

No mitigation is proposed with Alternative B.

4.2.1.3.4. Residual Effects

No residual effects are anticipated.

4.2.1.4. Raptors

4.2.1.4.1. Direct and Indirect Effects

The PRB FEIS analyzed the direct and indirect impacts to raptors from oil and gas development, (pp. 4-216 to 4-221).

4.2.1.4.2. Cumulative Effects

The cumulative effects associated with Alternatives B are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, p. 4-221.

4.2.1.4.3. Mitigation Measures

No mitigation is proposed with Alternative B.

4.2.1.4.4. Residual Impacts

No residual impacts are anticipated.

4.2.1.5. Plains Sharp-tailed Grouse Effects

4.2.1.5.1. Direct and Indirect Effects

The PRB FEIS analyzed direct and indirect impacts to sharp-tailed grouse from oil and gas development, (pp. 4-221 to 4-225).

4.2.1.5.2. Cumulative Effects

The cumulative effects associated with Alternatives B are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pp. 4-225 to 4-226.

4.2.1.5.3. Mitigation Measures

No mitigation is proposed with Alternative B.

4.2.1.5.4. Residual Impacts

No residual impacts are anticipated.

4.2.2. Cultural Resources

4.2.2.1. Direct and Indirect Effects

No historic properties will be impacted by the proposed project. Following the Wyoming State Protocol Section VI(A)(1) the BLM electronically notified the Wyoming State Historic Preservation Officer (SHPO) on July 27, 2011 that no historic properties exist in the area of project effects (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).

4.2.2.2. Cumulative

Construction and development of oil and gas resources impacts cultural resources through ground disturbance, unauthorized collection, and visual intrusion of the setting of historic properties. This results in fewer archaeological resources available for study of past human life-ways, changes in human behavior through time, and interpreting the past to the public. Additionally, these impacts may compromise the aspects of integrity that make a historic property eligible for the National Register of Historic Places. Recording and archiving basic information about archaeological sites and the potential for subsurface cultural materials in the proposed project area serve to partially mitigate potential cumulative effects to cultural resources.

Fee actions constructed in support of federal actions can result in impacts to historic properties. Construction of large plans of coalbed natural gas development on split estate often include associated infrastructure that is not permitted through BLM. Project applicants may connect wells draining fee minerals, or previously constructed pipelines on fee surface with a federal plan of development. BLM has no authority over such development which can impact historic properties. BLM has the authority to modify or deny approval of federal undertakings on private surface, but that authority is limited to the extent of the federal approval. Historic properties on private surface belong to the surface owner and they are not obligated to preserve or protect them. The BLM may go to great lengths to protect a site on private surface from a federal undertaking, but the same site can be legally impacted by the landowner at any time. The cumulative effect of numerous federal approvals can result in impacts to historic properties. Archeological inventories reveal the location of sites and although the BLM goes to great lengths to protect site location data, information can potentially get into the wrong hands. BLM authorizations that result in new access can inadvertently lead to impacts to sites from increased visitation by the public.

4.2.2.3. Mitigation Measures

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).

4.2.2.4. Residual Effects

During the construction phase, there will be numerous crews working across the project area using heavy construction equipment without the presence of archaeological monitors. Due to the extent of work and the surface disturbance caused by large vehicles, it is possible that unidentified cultural resources can be damaged by construction activities. The increased human presence associated with the construction phase can also lead to unauthorized collection of artifacts or vandalism of historic properties.

5. CONSULTATION/COORDINATION:

Contact	Title	Organization	Present at Onsite?
Buster Ivory	Regulatory Agent	Yates Petroleum	Yes
Brad MacKenrney	Pipeliner	Rowdy Pipeline	Yes
Mary Hopkins	Wyoming State Historic Preservation Officer	WY SHPO	No
Bud Stewart	Fish and Wildlife Biologist	WYGFD	Yes
Brad Rogers	Fish and Wildlife Biologist	USFWS	Yes

6. REFERENCES AND AUTHORITIES:

The National Environmental Policy Act of 1969 (NEPA), as amended (Pub. L. 91-90, 42 U.S.C. 4321 et seq.).

Code of Federal Regulations (CFR)

- 40 CFR All Parts and Sections inclusive Protection of Environment Revised as of July 1, 2001.
- 43 CFR All Parts and Sections inclusive - Public Lands: Interior. Revised as of October 1, 2000.

U.S. Department of the Interior, Bureau of Land Management and Office of the Solicitor (editors). 2001. The Federal Land Policy and Management Act, as amended. Public Law 94-579.

Approved Resource Management Plan for Public Lands Administered by the Bureau of Land Management Buffalo Field Office. Prepared by the United States Department of the Interior, Bureau of Land Management, Buffalo Field Office, April 2001.

Avian Power Line Interaction Committee. 1996. Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996. Edison Electric Institute. Washington, D.C. 125pp.

Hiatt, G.S. and D. Baker. 1981. Effects of oil/gas drilling on elk and mule deer winter distributions on Crooks Mountain, Wyoming. Wyoming Game and Fish Department.

Ingelfinger, F., and S. Anderson. 2004. Passerine response to roads associated with natural gas extraction in a sagebrush steppe habitat. Western North American Naturalist 64:385-395.

Jalkotzy, M.G., P.I. Ross, and M.D. Nasserden. 1997. The Effects of Linear Developments on Wildlife: A Review of Selected Scientific Literature. Arc Wildlife Services Ltd., Calgary, Alberta, Canada.

Lustig, Thomas D. March 2003. Where Would You Like the Holes Drilled into Your Crucial Winter Range? Transactions of the 67th North American Wildlife and Natural Resources Conference.

Madson, Chris. 2005, March. Deer on the Anticline. *Wyoming Wildlife, 69*(3), 10-15.

Nicholoff, S. H., compiler. 2003. Wyoming Bird Conservation Plan, Version 2.0. Wyoming Partners in Flight. Wyoming Game and Fish Department, Lander, WY.

Saab, V., and T. Rich. 1997. Large-scale conservation assessment for neotropical migratory landbirds in the Interior Columbia River Basin. USDA Forest Service General Technical Report PNW-GTR-399, Portland, Oregon, USA.

State wildlife agencies' ad hoc committee for sage-grouse and oil and gas development. 2008. Using the best available science to coordinate conservation actions that benefit greater sage-grouse across states affected by oil and gas development in Management Zones I-II (Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming). Unpublished report. Colorado Division of Wildlife, Denver; Montana Fish, Wildlife and Parks, Helena; North Dakota Game and Fish Department, Bismarck; Utah Division of Wildlife Resources, Salt Lake City; Wyoming Game and Fish Department, Cheyenne

Powder River Oil and Gas Project Environmental Impact Statement and Resource Management Plan Amendment. Prepared by the Department of the Interior, Bureau of Land Management, Wyoming State Office in Campbell, Converse, Johnson and Sheridan Counties, Wyoming. Approved April 30, 2003.

Temple S. A. 1986. Predicting impacts of habitat fragmentation on forest birds: A comparison of two models. Pages 301-304 in Wildlife 2000 (J. Verner, C. J. Ralph, and M. L. Morrison, Eds.). Univ. Wisconsin Press, Madison.

Temple S.A., and J. R. Cary. 1988. Modeling dynamics of habitat-interior bird populations in fragmented landscapes. *Conservation Biology*, 2 :340-347.

Temple, S.A., and B.A. Wilcox. 1986. Introduction: Predicting effects of habitat patchiness and fragmentation. In Wildlife 2000: Modeling Habitat Relationships of Terrestrial Vertebrates, ed. J. Verner, M.L. Morrison, and C.J. Ralph, 261-62. Madison: University of Wisconsin Press.

U.S. Department of the Interior 2001, Bureau of Land Management, Buffalo Field Office. Approved Resource Management Plan for Public Lands Administered by the Bureau of Land Management Buffalo Field Office April 2001.

U.S. Department of the Interior 2003, Bureau of Land Management. Powder River Oil and Gas Project Environmental Impact Statement and Resource Management Plan Amendment. April 30, 2003.

U.S. Fish and Wildlife Service (USFWS). 1989. Black-footed ferret Survey Guidelines for Compliance with the Endangered Species Act. Denver, CO and Albuquerque, NM.

U.S. Fish and Wildlife Service. 2002. Final Biological and Conference Opinion for the Powder River Oil and Gas Project, Campbell, Converse, Johnson, and Sheridan Counties (WY6633). U.S. Fish and Wildlife Service. December 17, 2002. Cheyenne, WY. 58pp.

Wyoming Game and Fish Department (WGFD). 2004. Minimum Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats on BLM Lands. WGFD. Cheyenne, WY.

WGFD. 2009. Minimum Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats on BLM Lands. WGFD. Cheyenne, WY.

WGFD. 2010. 2010 WGFD Sheridan Region Lek Monitoring Results.

Yates Petroleum Corporation (YPC). 2010. Sunrise Federal #32 Oil Well: Habitat Assessment and Raptor Survey Report. Gillette, WY.

YPC. 2011. Sunrise Federal #32 Oil Well: Raptor and Mountain Plover Survey Report. Gillette, WY.

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