

**DECISION RECORD**  
**Stephens Energy CO., LLC, Federal 7-25, Vertical, Wildcat Oil Well**  
**Environmental Assessment (EA), WY-070-EA12-059**  
**Buffalo Field Office, Bureau of Land Management**

**DECISION.** The BLM approves Stephens Energy Co., LLC., Federal 7-25 vertical oil well application for permit to drill (APD) as described in Alternative B of the environmental assessment (EA) WY-070-EA12-059, incorporated here by reference. This approval includes the well’s associated infrastructure.

**Compliance.** This decision complies with:

- Federal Land Policy and Management Act of 1976 (FLPMA) (43 USC 1701); DOI Order 3310.
- Mineral Leasing Act of 1920 (MLA) (30 U.S.C. 181); to include On Shore Order No. 1.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- Buffalo Resource Management Plan (RMP) 1985, Amendments 2001, 2003, and 2011.

BLM summarizes Alternative B’s approval below. See the EA for the project description.

**Well Site.** BLM approves the following APD(s) and associated infrastructure:

	Well Name	Well #	Qtr/Qtr	Section	TWP	RNG	Lease #
1	Federal	7-25	SWNE	25	54N	69W	WYW79713

**Limitations:** There are no denials or deferrals, see the conditions of approval (COAs).

**FINDING OF NO SIGNIFICANT IMPACT (FONSI).** Analysis of Alternative B of the EA, WY-070-EA12-059, and the FONSI found Stephens’ proposal for the Federal 7-25, Vertical, Wildcat Oil Well, will have no significant impacts on the human environment, beyond those described in the PRB FEIS, thus there is no requirement for an EIS.

**DECISION RATIONALE.** BLM bases its approval on:

1. Stephens Energy and BLM included design features and mitigation measures to reduce environmental impacts, including to sage-grouse while meeting the project’s need; see, COAs, Appendix B of the EA.
2. The selected alternative will not result in any undue or unnecessary environmental degradation. The PRB FEIS analyzed and predicted that the PRB oil and gas development would have significant impacts to the region’s sage-grouse population. The impact of the Stephens Federal 7-25 development cumulatively contributes to the potential for local extirpation yet its effect is acceptable because it is outside priority habitats and is within the parameters of the PRB FEIS/ROD and current BLM and Wyoming sage-grouse conservation strategies.
3. The selected alternative will help meet the nation’s energy needs, and help stimulate local economies by maintaining workforce stability.
4. The Operator committed to:
  - Comply with all applicable federal, state, and local laws and regulations.
  - The operator incorporated several measures to alleviate resource impacts into their surface use plan and drilling plan submitted.
5. The Operator certified it has a surface use agreement with the Landowner(s) or is bonded.
6. The project is clearly lacking in wilderness characteristics as there is no federally owned surface.
7. Stephens Energy will reclaim disturbed areas.

**ADMINISTRATIVE REVIEW AND APPEAL:** This decision is subject to administrative review according to 43 CFR 3165. 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.

*acting* Field Manager: 

Date: 4/26/12

**FINDING OF NO SIGNIFICANT IMPACT**  
**Stephens Energy CO., LLC, Federal 7-25, Vertical, Wildcat Oil Well**  
**Environmental Assessment (EA), WY-070-EA12-059**  
**Buffalo Field Office, Bureau of Land Management**

**FINDING OF NO SIGNIFICANT IMPACT (FONSI):** Based on the information in EA, WY-070-EA12-059, incorporated here by reference; I find that: (1) the implementation of Alternative B will not have significant environmental impacts beyond those already addressed in the Buffalo Final Environmental Impact Statement (FEIS) 1985, and the Powder River Basin (PRB) FEIS, 2003, to which the EA tiers; (2) Alternative B conforms to the Buffalo Field Office (BFO) Resource Management Plan (RMP) (1985, 2001, 2003, 2011); and (3) Alternative B does not constitute a major federal action having a significant effect on the human environment. An EIS is not required. I base this finding 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, and in consideration of Interior Department Order 3310.

**CONTEXT:** Mineral development is a common PRB land use - sourcing 42% of the nation's coal. The PRB FEIS reasonably foreseeable development predicted and analyzed the development of 54,200 gas and oil wells. Development described in Alternative B is insignificant in the national and local context.

**INTENSITY:** The implementation of Alternative B 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 included in Alternative B will minimize adverse environmental effects. The preferred alternative does not pose a significant risk to public health and safety. The geographic area of project does not contain unique characteristics identified within 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. The PRB FEIS predicted and analyzed oil development of the nature proposed with this project and similar projects. The selected alternative does not establish a precedent for future actions with significant effects. This project relates to others with cumulative significant impacts yet these impacts (particularly to sage-grouse) are small enough to be within the parameters of the PRB FEIS.

There are no cultural or historical resources present that will be adversely affected by the selected alternative. The project area is clearly lacking in wilderness characteristics, as there is no federally owned surface on the lease and there is historic ranching and oil and gas use. 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.

**ADMINISTRATIVE REVIEW AND APPEAL:** This finding is subject to administrative review according to 43 CFR 3165. Request for administrative review of this finding 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 FONSI is received or considered to have been received. Any party who is adversely affected by the State Director's finding may appeal that finding to the Interior Board of Land Appeals, as provided in 43 CFR 3165.4.

Acting Field Manager: \_\_\_\_\_



Date: 4/26/12

**ENVIRONMENTAL ASSESSMENT (EA), WY-070-EA12-059**  
**Stephens Energy CO., LLC, Federal 7-25, Vertical, Wildcat Oil Well,**  
**Buffalo Field Office, Bureau of Land Management**

## **1. INTRODUCTION**

This site-specific analysis tiers into and incorporates by reference the information and analysis 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, 2003, and the PRB FEIS Record of Decision (ROD) pursuant to 40 CFR 1508.28 and 1502.21. One may review these documents at the BLM Buffalo Field Office (BFO) and on our website.

### **1.1. Background**

The project is located on “split estate”. The operator sent in a notice of staking (NOS) on June 10, 2011. BLM and Stephens conducted the onsite on September 21, 2011, while still under the NOS stage. Stephen’s moved the proposed well approximately 500 feet south to reduce surface disturbance and improve reclamation. BLM received the APD on November 23, 2011 and the “post onsite deficiency letter” was sent on January 20, 2012.

### **1.2. Need for the Proposed Project**

The need for this project is to determine how and under what conditions to balance natural resource conservation with allowing the operator to exercise lease rights to develop fluid minerals on federal leaseholds as described in their proposed project. Information contained in the application for permit to drill (APD) is an integral part of this EA and is incorporated by reference (CFR 1502.21). The extraction of fluid minerals is important to meeting the nation’s energy needs. The fluid mineral leasing programs fall under the authority of the Mineral Leasing Act of 1920 and the Federal Land Policy Management Act (FLPMA), and other laws and regulations.

### **1.3. Decision to be Made**

The BLM will decide whether or not to approve the proposed development, and if so, under what terms and conditions to comport with the Bureau’s multiple use mandate, environmental protection, and RMP.

### **1.4. Scoping and Issues**

The BFO external scoping included a 30 day posting of the proposed APD and the EA’s timely publication on the BFO website. Previously BFO conducted extensive external scoping for the PRB FEIS - discussed on p. 2-1 of the PRB FEIS and on p. 15 of the PRB ROD. This project is similar in scope to other fluid mineral development analyzed in the PRB area. External scoping would be unlikely to identify new issues, as verified by the few fluid mineral EAs that BLM recently externally scoped. External scoping of the horizontal drilling in Samson Resources EA, WY-060-EA11-181, 2011, in the PRB area received 2 comments, revealing no new issues. (BLM incorporates by reference in this EA, the descriptions and analysis of horizontal drilling and hydraulic fracturing from the Samson EA.) External scoping in 2010 and 2011 for a geographically-focused proposed RMP amendment revealed no new issues outside of the geographically-specific issues.

The BFO interdisciplinary team (ID team) conducted internal scoping by reviewing the proposal and its location to identify potentially affected resource and land uses. The ID team identified resources and land uses present and affected by the proposed project. This EA will not discuss resources and land uses that are either not present, not affected, or that the PRB FEIS adequately addressed. The ID team identified important issues for the affected resources to focus the analysis. This EA addresses the project and its

site-specific impacts that were unknown and unavailable for review at the time of the PRB FEIS analysis to help the decision maker come to a reasoned decision. Project issues include:

- Air quality
- Soils and vegetation: loss, erosion, reclamation
- Riparian and wetland resources
- Wildlife: Sage & sharp-tailed grouse leks & raptors
- Water resource
- Invasive species
- Cultural resources: National Register
- Socio-economic resources

These issues are not present, or minimally so. BLM analyzed them in the PRB FEIS and not in this EA:

Geological resources	Recreation	Wilderness characteristics
Cave and karst resources	Heritage & visual resources	Livestock & grazing
Mineral resources: locatable, leasable-coal, salable	Fire, fuels management, and rehabilitation	Areas of critical environmental concern
Paleontological resources	Rights of way & corridors	Environmental justice
Forest products	Transportation & access	Tribal treaty rights
Lands & realty	Wild and scenic rivers	

## 2. PROPOSED PROJECT AND ALTERNATIVES

### 2.1. Alternative A – No Action

The PRB FEIS considered a No Action Alternative, pp. 2-54 to 2-62. BFO approved 359 conventional wells in the PRB, including 193 horizontal wells (as of March 2012). The Wyoming Oil and Gas Conservation Commission (WOGCC) permitted 103 wells in the PRB (as of January 2012). The total is 462, representing 14% of the projected 3,200 oil wells in the 2003 PRB ROD. This agrees with the PRB FEIS which analyzed the reasonably foreseeable development rolling across the PRB of over 51,000 CBNG and 3,200 natural gas and oil wells. The no action alternative would be no new federal well. This alternative would deny this APD requiring the operator to resubmit an APD that complies with statutes and the reasonable measures in the PRB RMP ROD in order to lawfully exercise conditional lease rights. This alternative could, through secretarial discretion suspend the senior 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 - Proposed Action

**Project Name:** Federal 7-25

<u>Well Name</u>	<u>Well #</u>	<u>Lease #</u>	<u>TWN</u>	<u>RNG</u>	<u>SEC</u>	<u>QQ</u>	<u>County</u>
Federal	7-25	WYW79713	48N	70W	25	SWNE	Campbell

**Operator/Applicant:** Stephens Energy Company.

**Surface Owner:** Juddy Bettmann. The area clearly lacks wilderness characteristics as it lacks federal surface.

The proposed project is to drill and develop a vertical, oil/gas well. The project would be subject to the conditions-of-approval (COAs) for drilling of an oil/gas well on in the BFO jurisdiction. For a detailed description of design feature, construction practices and operator committed mitigation measures associated with the proposed project, 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.

### **Drilling, Construction and Production Design Features Include (See Administrative Record):**

- Targeting the Minnalusa Formation, at about a 7,000' depth.

- The operator will complete the drilling and construction of this well and associated infrastructure within 2 years.
- A road network of existing improved, proposed improved and 2 track roads to the well.
- Generators will supply power.
- Drilling and production facilities include a pumping unit, tank battery, heater treater, and pump and water trucks.
- Equipping all engines with a muffler system limiting the noise level to 70 decibels or less at a distance of 200’.
- No pits in the production phase.
- Fresh water and sands needed for drilling and production will be hauled by trucks and stored in tank on location. Approximately 22,000 bbls of water will be needed for this well. It will be hauled from Gillette, Wyoming and take about 366-round trips.
- Drill cuttings will be placed in a lined pit on location and buried within 90 days of well completion.

### **Existing Wells**

There are 2 “shut in” and 13 “plugged and abandoned” oil wells within the 1 mile effects analysis area.

BLM incorporated and analyzed the implementation of committed mitigation measures in the SUP and drilling plan, in addition to the COAs in the PRB FEIS Record of Decision (ROD), are in this alternative.

Additionally, the Operator, in their APD, 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 certified he has a surface use agreement with the landowner(s) or is bonded.  
The Operator certified that a copy of the SUP was provided to the relevant landowner(s).
4. Maintain the access road and well pad.
5. Perform interim and final reclamation on all disturbed areas.
6. Control noxious weeds.
7. Reclaiming disturbed areas.

### **2.3. Conformance with the Land Use Plan and Other Environmental Assessments**

This proposal does not diverge from the goals and objectives in the Buffalo Resource Management Plan (RMP), 1985, 2001, 2003, and 2011 and generally conforms to the terms and conditions of that land use plan, its amendments, and supporting FEISs, 1985, 2003.

## **3. AFFECTED ENVIRONMENT**

This section briefly describes the physical and regulatory environment affected by implementation of the alternatives in Section 2. BLM focuses on the major issues here. Resources unaffected, or not affected beyond the level analyzed in the PRB FEIS, are outside the scope of this EA. The Wyoming Game and Fish Department’s (WGFD’s) Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (2009), made no distinction between surface disturbance impacts per well type. BLM’s position is there is a rare lack of distinction in surface disturbance impacts attributable to well type, subject to showing a distinction, not a mere difference, and this tracks to other surface disturbance issues as with soils, vegetation, invasive species, wetlands, cultural resources, etc. See State Director Review, WY-2010-023, Part 2, p. 3, fn. 7. This supports national policy in which no distinction exists in 43 CFR 3160 et seq, leasing, and the 2005 Energy Policy Act.

### **Project Area Description**

The proposed project is about 47 miles NE of Gillette, Wyoming. Elevations are about 4100’ to 4300 feet

above sea level. Topography ranges from rolling sagebrush/grassland hills to moderately steep ridgelines and draws. Prairie Creek is approximately 1.5 miles away from the location. Ephemeral drainages of Prairie Creek drain the project area. Upland draws contain sparse green ash and box elder trees. Current land uses includes ranching, hunting and oil and gas development.

### **3.1. Air Quality**

Refer to the PRB FEIS pp. 3-291 to 3-299, for a 2003-era description of the air quality conditions. BLM incorporates by reference, Update of Task 3A Report for the Powder River Basin Coal Review Cumulative Air Quality Effects for 2020, BLM (AECOM), 2009, (Cumulative Air Quality Effects, 2009) as it captures the cumulative air quality effects of present and projected PRB fluid and solid mineral development. BLM incorporates by reference here, Section 3.9, Air Quality, Whiskey Drawn EA, WY-070-09-048. Existing air quality in the PRB is in attainment with all ambient air quality standards. It is also in an area that is in prevention of significant deterioration zone. PRB air quality is a rising concern due to ozone in the oil and gas producing Upper Green River Basin, Wyoming that exceeded EPA limits for 13 days in 2011 requiring 10 warnings to stay indoors. Particulate matter (PM) (coal dust) was the source of PRB-area air quality alerts issued in 2011. Four sites monitor the air quality in the PRB: Cloud Peak in the Bighorn Mountains, Thunder Basin northeast of Gillette, Campbell County south of Gillette, and Gillette. In addition, the Wyoming Air Resource Monitoring System (WARMS) measures meteorological parameters from 6 sites, and particulate concentrations from 5 of those sites, monitors speciated aerosol (3 locations), and evapotranspiration rates (3 locations). These sites are at Sheridan, Taylor Reservoir, South Coal Reservoir, Buffalo, Juniper, and Newcastle. The northeast Wyoming visibility study is ongoing by the Wyoming Department of Environmental Quality (WDEQ). Sites adjacent to the Wyoming PRB-area are at Birney on the Tongue River 24 miles north of the Wyoming-Montana border, Broadus on the Powder River in Montana, and Devils Tower.

### **3.2. Soils**

Ecological site descriptions provide soils and vegetation information needed for resource identification, management, and reclamation recommendations. These are found by using the Natural Resource Conservation Service, (NRCS, USDA), Technical Guides for the Major Land Resource Area 58B Northern Rolling High Plains, in the 15-17 inches Northern Plains precipitation zone. BLM verified these through onsite field inspections. The disturbed project area predominantly is a Loamy ecological site.

The soils of the Loamy site are mostly deep to moderately deep (greater than 20 inches to bedrock), well drained and moderately permeable. Layers of the soil most influential to the plant community varies from 3 to 6 inches thick. These layers have an A horizon with very fine sandy loam, loam, or silt loam texture and may also include the upper few inches of the B horizon with sandy clay loam, silty clay loam or clay loam texture. Primary soil limitations include: low organic matter content and soil droughtiness. The low annual precipitation should be considered when planning a seeding. When these soils are disturbed, erosion potential from wind and water increase. See the NRCS Soil Survey WY705 for more information.

### **3.3. Vegetation**

Species typical of short grass prairie comprise the project area flora. Specific species observed throughout the project area include, western wheatgrass, bluebunch wheatgrass, prairie junegrass, green needlegrass, blue grama, little bluestem, cheatgrass, thread leaf sedge, scarlet globemallow, dotted gayfeather, salsify, yucca, silver and big sagebrush, green ash and Box elder trees. Weeds seen at the onsite in the area were Canada thistle and scotch thistle. Differences in dominant species in the project area vary with soil type, aspect, and topography.

### **3.4. Water Resources**

BLM incorporates by reference here the PRB FEIS, Affected Environment, for additional information, see pp. 3-1 to 3-36. WDEQ assumed primacy from U.S. Environmental Protection Agency for

maintaining Wyoming's water quality. The Wyoming State Engineer's Office (WSEO) has authority for regulating water rights issues and permitting impoundments for the containment of the State's surface waters. The WYOGCC has authority for permitting and bonding off channel pits located over state and fee minerals. The historical use for groundwater in this area was for stock or domestic water. The WSEO Ground Water Rights Database showed no registered stock and domestic water wells within 1 mile of the proposed site. WDEQ water quality parameters for groundwater classifications (Chapter 8 – Quality Standards for Wyoming Groundwater) define general limits for total dissolved solids (TDS): 500 mg/l TDS for drinking water (Class I), 2000 mg/l for agricultural use (Class II) and 5000 mg/l for livestock use (Class III). Refer to the WDEQ web site for additional water quality limits for groundwater.

### **3.5. Wetlands/Riparian**

BLM incorporates by reference here, generally, the impacts analyzed in the PRB FEIS, pp. 4-173 to 4-179. There are no wetlands or riparian areas in the immediate proposed site area, other than those downstream, see project area description, above.

### **3.6. Invasive Species**

BLM noted the state-listed noxious weeds, whitetop, Canada thistle, field bindweed, and scotch thistle were present on inventory maps, in consultation with county weed agent and/or in databases. BLM's subsequent field investigation found Canada thistle and Scotch thistle. Cheatgrass or downy brome (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) are minimally present in the affected environment. These species are found in high densities and numerous locations in NE Wyoming.

### **3.7. Wildlife (Fish and Wildlife)**

The PRB FEIS identified wildlife species occurring in the PRB, pp. 3-113 to 3-206. A BLM wildlife biologist performed a habitat assessment in the project area on 9/21/2011. The biologist evaluated impacts to wildlife resources and recommended project modifications where wildlife issues arose. The BLM wildlife biologist also consulted databases compiled and managed by BLM BFO wildlife staff, the PRB FEIS, Wyoming Game and Fish Department (WGFD) datasets, and the Wyoming Natural Diversity Database (WYNDD) to evaluate the affected environment for wildlife species that may occur in the project area. This section describes the affected environment and impacts to wildlife known or likely to occur in the area of the proposed project.

#### **3.7.1. Threatened, Endangered, Proposed, and Candidate Species**

##### **3.7.1.1. Threatened and Endangered Species – Ute Ladies'-Tresses Orchid**

The Ute ladies'-tresses orchid (ULT) is a threatened species under the ESA. The project area does not contain ULT habitat, see the PRB FEIS, p. 3-175.

##### **3.7.1.2. Candidate Species - Greater Sage-Grouse (Sage-grouse)**

The U.S. Fish and Wildlife Service (FWS) determined that the greater sage-grouse (sage-grouse) warrants federal listing as threatened or endangered across its range, but precluded listing due to other higher priority listing actions, 75 Fed. Reg. 13910 to 14014, Mar. 23, 2010; 75 Fed. Reg. 69222 to 69294, Nov. 10, 2010. Sage-grouse are a WY BLM SSS and a WGFD species of greatest conservation need, because populations are declining and they are experiencing ongoing habitat loss. The Wyoming Bird Conservation Plan rates them as a Level I species, indicating they are clearly in need of conservation action. Sage-grouse are also a BCC for FWS's Region 17. The PRB FEIS addressed the affected environment for sage-grouse, pp. 3-194 to 3-199.

In 2009, the WY BLM initiated a contract to research the potential impacts to the NE WY sage-grouse population from oil and gas development in the Powder River Basin. The report, entitled "Viability analyses for conservation of sage-grouse populations: Buffalo Field Office, Wyoming," indicated that the sage-grouse populations in the PRB remain viable, but that viability is impacted by multiple stressors

including West Nile virus (WNV) and energy development. Those impacts are most discernible at the spatial scale of 20 km (12.4 mi) (Taylor et al. 2012). This report echoes results from previous studies conducted in the basin, documenting basin-wide population declines (Walker et al. 2007).

In its *Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats* (2009), WGFD categorized impacts to sage-grouse by number of well pad locations per square mile within 2 miles of a lek and within identified nesting/brood-rearing habitats greater than 2 miles from a lek. Moderate impacts occur when well density is between 1 and 2 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 2 and 3 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 3 well pad locations per square mile or when there are greater than 60 acres of disturbance per square mile.

The State Wildlife Agencies' Ad Hoc Committee for Consideration of Oil and Gas Development Effects to Nesting Habitat (2008) recommends that impacts to leks occur within 4 miles of oil and gas developments. Stephens did not complete surveys for breeding sage-grouse for the project. WGFD records indicate that the closest sage-grouse lek occurs 6.3 miles west of the project area. The presence of suitable sage-grouse habitat (as defined in Soehn, et al., 2001), in the disturbance area was verified by the BLM biologist during the onsite visit.

### **3.7.2. Special Status Species (SSS) – Plants, Fish, and Wildlife**

Wyoming BLM annually updates its list of SSS to focus management to maintain habitats to preclude listing as a threatened or endangered species. The policy goals are:

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

The Wildlife Worksheet in Appendix A lists those SSS that may occur in the project area. The Worksheet also includes a brief description of the habitat requirements for each species. The authority for the SSS comes from the ESA, as amended; Title II of the Sikes Act, as amended; the FLPMA; Department Manual 235.1.1A and BLM Manual 6840.

### **3.7.3. Big Game**

The big game species occurring in the project area are mule deer and pronghorn, according to the WGFD. The PRB FEIS discussed the affected environment for the above species on pp. 3-115 to 3-141. BLM observed mule deer were observed in the project area during the onsite visit.

### **3.7.4. Migratory Birds**

Migratory birds are those that migrate for the purpose of breeding and foraging at some point in the year. 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.

Shrub-steppe vegetation dominates the project area. Many species that are of high management concern use shrub-steppe areas for their primary breeding habitats (Saab and Rich 1997). Nationally, grassland and shrubland birds 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, appear Table 3.2., grouped by level as identified in the plan.

**Table 3.2. Migratory Birds Occurring in Shrub-steppe Habitat, NE Wyoming (Nicholoff 2003)**

Level	Species	Wyoming BLM Sensitive
Level I	Brewer's sparrow	Yes
	Ferruginous hawk	Yes
	Greater sage-grouse	Yes
	McCown's longspur	No
	Sage sparrow	Yes
Level II	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 PRB FEIS addressed the affected environment for migratory birds, pp. 3-150 to 3-153. The discussion included habitat requirements and foraging patterns for the species listed above, with the exception of common poorwills and Say's phoebes, addressed below.

Common poorwills inhabit sparse, rocky sagebrush; open prairies; mountain-foothills shrublands; juniper woodlands; brushy, rocky canyons; and ponderosa pine woods. They prefer clearings, like 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 near logs, rocks, shrubs, or grass for some shade. They feed exclusively on insects. Say's phoebes inhabit arid, open country with sparse vegetation, including shrub-steppe, grasslands, shrublands, and juniper woodlands. They nest on cliff ledges, banks, bridges, eaves, and road culverts and often reuse nests in successive years. They eat mostly insects and berries.

### **3.7.5. Raptors**

The PRB FEIS discussed the affected environment for raptors, pp. 3-141 to 3-148. The BLM database does not show any raptor nests within 0.5 miles of the Stephan's 7-25 well, or its proposed access route. This may be because of the lack of surveys in the area. During the onsite, the BLM biologist did a cursory survey for raptor nests. None were found, however, BLM will consider requiring a survey during the BLM protocol time (April 15 – June 15) to positively determine lack of raptor nesting.

### **3.7.6. Plains Sharp-tailed Grouse**

BLM discusses plains sharp-tailed grouse in this document because the public identified specific concerns for this species during the scoping for the PRB FEIS. The PRB FEIS discussed the affected environment for plains sharp-tailed grouse, pp. 3-148 to 3-150. The project area does include suitable sharp-tailed grouse habitat, and BLM observed the grouse during the onsite. BLM found 1 lek 0.40 miles to the northeast of the proposed well. It is likely that sharp-tailed grouse nest in the project area.

## **3.8. Cultural Resources**

Stephens Energy performed a class III cultural resource inventory for the FED 7-25 well and access road prior to on-the-ground project work (BFO project no. 70110098). Stephens Energy provided BLM 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. Ardeth Hahn, BLM Archaeologist, reviewed the report for technical adequacy and compliance with BLM standards, and determined it adequate. The project area has no cultural resources.

#### 4. ENVIRONMENTAL EFFECTS

Alternative B is the preferred alternative. BLM describes the environmental effects of it below.

##### 4.1. 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 engine exhaust) and production (including well production equipment, booster and pipeline compression engine exhaust). The operator will control the amount of air pollutant emissions during construction 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 and gas development would not violate any local, state, tribal, or federal air quality standards.

##### 4.2. Soils & Vegetation

###### 4.2.1. Direct and Indirect Effects

Proposed pads, roads and culverts 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. Table 4.1 summarizes the proposed surface disturbance.

**Table 4.1 - Summary of Disturbance**

Facility	No. or Mileage	Factor	Disturbance	Duration
Well Pad	1	280' x 185'	1.45 acres	Long Term
2 track road	0.50 mi.	12'	1 acre	Long Term
Spot Upgrade/ improved roads	0.82 mi.	18'	2 acres	Long Term

Note: If well is a producer, Stephens will improve the 2 track road to a template, crown and ditch road (30' disturbance width). See APD for design.

BLM defined the designation of the duration of disturbance in the PRB FEIS (pp. 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”.

The effects to soils and vegetation, resulting from proposed access road, well pad construction and existing access roads that require improvements include:

- Mixing of horizons – occurs where construction on roads 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. With expedient reclamation, productivity and stability should be regained in the shortest time frame.
- 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. Compaction may be remediated by plowing or ripping.

-Modification of hill slope hydrology - 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 predominantly composed of cyanobacteria, green and brown algae, mosses and lichens. They 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.

These impacts, singly or in combination, would increase the potential for valuable soil loss due to increased water and wind erosion, invasive/noxious/poisonous plant spread, invasion and establishment, and increased sedimentation and salt loads to the watershed system.

Direct effects (removal and/or compaction) to vegetation would occur from ground disturbance caused by drilling rig equipment and construction of a well pads, tank batteries and roads. Short term effects would occur where vegetated areas are disturbed but later reclaimed within 1 to 3 years of the initial disturbance. Long-term effects would occur where well pads, compressor stations, roads, water-handling facilities or other semi-permanent facilities may result in loss of vegetation and affect reclamation success for the life of the project.

#### **4.2.2. Cumulative Effects**

BLM defined the designation of the duration of disturbance in the PRB FEIS, pp. 4-1 and 4-15. Most soil and vegetation disturbances would be short term impacts with expedient interim reclamation and site stabilization, as committed to by Stephens in their Surface Use Plan and as required in BLM COAs.

Geomorphic effects of roads and other surface disturbance range from chronic and long-term contributions of sediment into waters of the state to catastrophic effects associated with mass failures of road fill material during large storms. Roads can affect geomorphic processes primarily by: accelerating erosion from the road surface and prism itself through mass failures and surface erosion processes; directly affecting stream channel structure and geometry; altering surface flow paths, leading to diversion or extension of channels onto previously un-channelized portions of the landscape; and causing interactions among water, sediment, and debris at road-stream crossings.

These impacts, singly or in combination, could increase the potential for soil loss due to increased water and wind erosion, invasive/noxious/poisonous plant spread, invasion and establishment, and increased sedimentation and salt loads to the watershed system, if applicable mitigation measures are inadequate.

#### **4.2.3. Mitigation Measures**

Executing Stephens' plans will reduce impacts to vegetation and soils from surface disturbance, along with using BLM applied mitigation and BLM Wyoming Reclamation Policy. These include measures such as: Stephens reduced road construction by placing the well location near existing access roads, as much as possible. The operator will stabilize and reclaim areas not needed for production as soon as construction is complete. The operator will maintain a minimum 20-foot, undisturbed, vegetated border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages and steep hills, unless otherwise directed by the BLM Authorized Officer. Road grades of 8% or more will be graveled, as well as any other unstable road sections. These practice, as well as other mitigation measures identified in the SUP and COAs, will results in less surface disturbance and overall environmental impacts.

#### **4.2.4. Residual Effects**

Loss of vegetative cover, accelerated soil erosion and possible weed invasion will occur, despite expedient reclamation, for several years until reclamation is successfully established. Operator mitigation measures and applicable COAs will minimize these potential impacts and increase reclamation success.

#### **4.3. Water Resources**

Adherence to the drilling COAs, the setting of casing at appropriate depths, following safe remedial procedures in the event of casing failure, and using proper cementing procedures should protect any fresh water aquifers above the target coal zone. This will ensure that ground water will not be adversely impacted by well drilling and completion operations.

At the time of permitting, the volume of water that will be produced in association with these federal minerals is unknown. The operator will have to produce the well for a time to be able to estimate the water production. In order to comply with Onshore Oil and Gas Order No. 7, Disposal of Produced Water, the operator will submit a Sundry to the BLM within 90 days of first production which includes a representative water analysis as well as the proposal for water management.

Stephens will use a closed loop system (see APD) for drilling fluids/water for this well. Fresh water used for drilling this well will come from an approved water well near Gillette, Wyoming.

Historically, the quality of water produced in association with conventional oil and gas has been such that surface discharge would not be possible without treatment. Initial water production is quite low in most cases. There are 3 common alternatives for water management: re-injection, deep disposal or disposal into pits. All alternatives would be protective of groundwater resources when performed in compliance with state and federal regulations. The operator's plans for disposal of cuttings and produced water includes containing water in tanks on site, then trucking them to disposal sites and burying the cuttings at the location, see APD AR.

#### **4.4. Wetlands/Riparian Areas**

Watershed values, including natural drainages, would not be adversely impacted by the closed loop proposal and properly applied mitigation. There is little to no evidence the proposal will adversely impact other water resources. The operator will reduce possible contamination effects of fresh water aquifers through the use of tested casing, by setting casing at appropriate depths, and by following safe repair procedures in the event of casing failure. Use of other standard engineering practices for well operations should result in minimal impacts.

The cumulative impacts of the proposed action, when considered with other existing and proposed development in the project area should not be significant. The project's use of water, from a water well near Gillette, Wyoming, may provide a positive benefit of slowly contributing to returning the local riparian and wetland waters to their long-term, more natural state, as the well water likely reduces their contribution to flows. The application of mitigation measures will ensure that the incremental impacts of this well, when considered with any existing development are insignificant. Refer to the PRB FEIS for more information on cumulative impacts.

#### **4.5. Invasive Species**

##### **4.5.1. Direct and Indirect Effects**

The PRB FEIS discussed direct and indirect effects resulting from invasive species, pp. 4-158 to 4-162. The use of existing facilities along with the surface disturbance associated with construction of proposed access roads, utility lines, and related facilities will 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, whitetop, field bindweed, Scotch thistle, Canada thistle, and perennial pepperweed, if control measures are inadequate.

#### **4.5.2. Cumulative Effects**

Activities related to the development of the proposed project would create a favorable environment for the establishment and spread of noxious weeds/invasive plants, if control measures are inadequate.

#### **4.5.3. Mitigation Measures**

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

1. Chemical (main control measure), biological and physical control as applicable. Controls would be applied as recommended by chemical manufacturer and or land management agency.
2. Preventive practices will include, avoid infested areas, when possible, minimize surface disturbance, use certified weed-free mulch and seed, clean rigs before leaving areas of weed infestation and reseed/reclaim disturbed areas as soon as possible.
3. The operator will provide training for employees and contractors. Employees and contractors are encouraged to report weeds they encounter and avoid those areas when possible or control the weeds.

#### **4.5.4. Residual Effects**

Control efforts by operator are limited to the disturbance associated with the project. Cheatgrass and/or downy brome (*Bromus tectorum*) and, to a lesser extent, Japanese brome (*B. japonicus*) exist in the affected environment. These species are found in such high densities and numerous locations throughout NE Wyoming that a control program is not considered feasible at this time. These annual weeds would continue existing in the project area.

### **4.6. Wildlife (Fish and Wildlife)**

#### **4.6.1. Wildlife Threatened, Endangered, Proposed and Candidate Species**

##### **4.6.1.1. Threatened and Endangered Species – Ute Ladies’-tresses Orchid (ULT)**

The only species currently listed as threatened or endangered that might occur in the Buffalo Field Office area is the ULT. There is no habitat for ULTs in the project area. The Stephan’s Federal 7-25 well and access will have no effect on ULTs.

##### **4.6.1.2. Candidate Species - Greater Sage-grouse (Sage-grouse)**

###### **4.6.1.2.1. Direct and Indirect Effects**

FWS discussed in detail, impacts to sage-grouse associated with energy development in detail in the 12-Month Findings for Petitions to List the Greater Sage-Grouse (*Centrocercus urophasianus*) as Threatened or Endangered (FWS 2010). Impacts to sage-grouse are generally a result of loss and fragmentation of sagebrush habitats associated with roads and infrastructure. Research indicates that sage-grouse hens also avoid nesting in developed areas. The Stephan’s Federal 7-25 well and access is within suitable sage-grouse habitat. The project will remove nesting and wintering cover (see Table 4.1 for acreage) and may impact individuals and habitat.

###### **4.6.1.2.2. Cumulative Effects**

The sage-grouse population in northeast Wyoming is exhibiting a steady long term downward trend, as measured by lek attendance (WGFD 2010). Figure 4.1 illustrates a 10-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 oil and gas development, as discussed in detail in FWS (2010).

The BLM-contract study of the population viability analysis for the Northeast Wyoming sage-grouse found that there is currently a viable population of sage-grouse in the PRB (Taylor et al. 2012). Threats from energy development and West Nile Virus (WNV) are impacting future viability (Taylor et al. 2012).

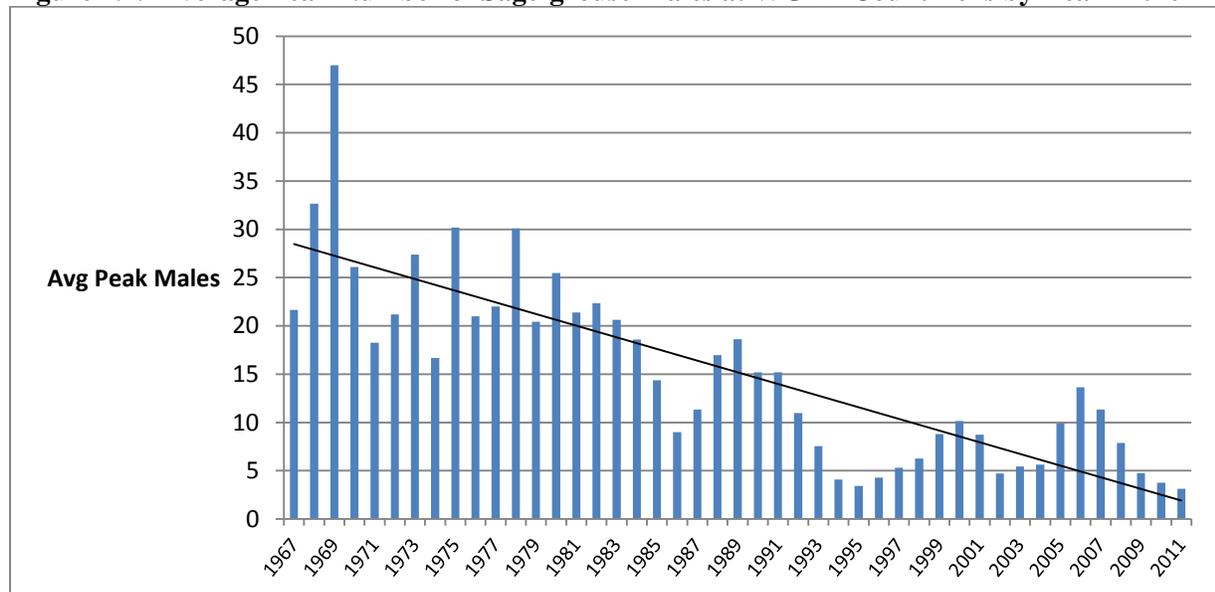
The study indicated that effects from energy development, as measured by male lek attendance, are discernible out to a distance of 12.4 miles. The Stephan’s 7-25 well location is approximately 1.1 miles from a sage-grouse core area. Five of the leks within the core area are within the 12.4 mile effects distance of the well.

The additive impacts of energy development and WNV are documented as a threat to sage-grouse persistence in the PRB (Taylor et al. 2012, Garton et al. 2011). The cumulative and synergistic effects of CBNG development and WNV in the PRB project area will continue to impact the local sage-grouse population, causing further declines in lek attendance, and could result in local extirpation: “[f]indings reflect the status of a small remaining sage-grouse population that has already experienced an 82% decline within the expansive energy fields (Walker et al. 2007a), a level of impact that has severely reduced options for delineating core areas that are large enough and in high enough quality habitats to sustain populations.” (Taylor et al. 2012).

Current well densities reduced the function of PRB core areas, affecting the remaining active leks in core habitats (Taylor et al. 2012). Continued energy development around the core areas continues impacting their remaining value. Declines in active leks and male attendance indicate that the WNV outbreaks and energy development reduce sage-grouse populations and that they interact to exacerbate population declines. The effects of one WNV outbreak year could cut a population in half. Absent a WNV outbreak, or another stochastic event of similar magnitude, immediate extirpation is unlikely. Results suggest that if current oil and gas development rates continue, they may compromise future viability of NE Wyoming sage-grouse, increasing chances of extirpation with additional WNV outbreaks (Taylor et al. 2012).

Robust, healthy sage-grouse populations require large and primarily contiguous landscapes of functional sagebrush habitat to meet all their seasonal habitat needs. Management of energy development based on current core area configurations and associated lease stipulations, conditions of approval, and best management practices (BMPs), may not provide enough contiguous habitats sufficient to protect the remaining viability of sage-grouse populations in the PRB without substantial investment in restoration.

**Figure 4.1. Average Peak Number of Sage-grouse Males at WGFD Count Leks by Year in the PRB**



#### **4.6.1.2.3. Mitigation Measures**

Sage-grouse nesting habitat is present, so BLM will consider the season timing restrictions for sage-grouse (March-15-June30).

#### **4.6.1.2.4. Residual Effects**

If the well is a producing well, there will be frequent human visitation to the area along a maintained road to a habitat area that is currently undisturbed.

### **4.6.2. Migratory Birds**

#### **4.6.2.1. Direct and Indirect Effects**

The PRB FEIS discussed direct and indirect effects to migratory birds, pp. 4-231 to 4-235. 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 (greater than 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. Direct mortality to migratory birds can occur when birds are attracted to open pits associated with drilling activities that may have toxic materials or oil sheens. Pits that continue to be open can be attractive to migratory birds and other wildlife. Another documented hazard that may cause direct mortality is open chimneys or pipes such as those associated with heater/treaters.

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.

#### **4.6.2.2. Cumulative Effects**

The cumulative effects associated with the proposal 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.

#### **4.6.2.3. Mitigation Measures**

BLM will consider a COA requiring the operator to take additional measures to comply with the Migratory Bird Treaty Act. The FWS recommends using closed containment systems as a first measure to reduce the hazard. The Stephan's 7-25 well, will use reserve pits. To reduce the hazard to wildlife, oil should be kept off pits. If necessary, netting or other effective measures may be needed to exclude birds. Stephens should cover chimneys on heater/treaters.

#### **4.6.2.4. Residual Effects**

In spite of mitigation measures to reduce the hazards of open pits to migratory birds, the potential will still exist for birds and other wildlife to be lost in any open pit left beyond the drilling operation.

### **4.6.3. Sensitive Species**

The sensitive species worksheet in Appendix A indicates species impacted by the Stephan's 7-25 well.

### **4.6.4. Big Game**

#### **4.6.4.1. Direct and Indirect Effects**

The PRB FEIS addressed impacts to big game, pp. 4-181 to 4-215. Impacts to mule deer and pronghorns may occur through alterations in hunting and/or poaching, increased vehicle collisions, harassment and displacement, increased noise, increased dust, alterations in nutritional status and reproductive success,

increased fragmentation, loss or degradation of habitats, reduction in habitat effectiveness, and declines in populations.

#### **4.6.4.2. Cumulative Effects**

The cumulative effects associated with project are within the analysis parameters and impacts described in the PRB FEIS. For details on expected cumulative impacts, refer to the PRB FEIS, pp. 4-211.

#### **4.6.4.3. Mitigation Measures**

BLM proposes no mitigation for this project.

#### **4.6.4.4. Residual Effects**

BLM identified no further impacts.

### **4.6.5. Raptors**

#### **4.6.5.1. Direct and Indirect Effects**

Direct and indirect effects to raptors are discussed in the PRB FEIS (pp. 4-216 to 4-221). Human activities in close proximity to active raptor nests may interfere with nest productivity. Romin and Muck (1999) indicate that activities within 0.5 miles of a nest are prone to cause adverse impacts to nesting raptors. If mineral activities occur during nesting, they could be sufficient to cause adult birds to remain away from the nest and their chicks for the duration of the activities. This absence can lead to overheating or chilling of eggs or chicks. Prolonged disturbance can also lead to the abandonment of the nest by the adults. Both actions can result in egg or chick mortality. In addition, routine human activities near these nests can draw increased predator activity to the area and increase nest predation.

To reduce the risk of decreased productivity or nest failure, 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.

#### **4.6.5.2. Cumulative Effects**

The cumulative effects associated with proposal 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.

#### **4.6.5.3. Mitigation Measures**

Timing restrictions will be placed on drilling and construction until a survey determines the lack of raptor nesting occupancy.

#### **4.6.5.4. Residual Impacts**

Disturbance associated with well production and maintenance could preclude the use of the area by raptors for foraging or nesting.

### **4.6.6. Plains Sharp-tailed Grouse**

#### **4.6.6.1. Direct and Indirect Effects**

Sharp-tailed grouse may avoid habitats adjacent to the project area. The nearest known lek is within the 0.64 seasonal timing restriction buffer. The well location is in a “bowl” below a hill which will serve as an effective screen between the well and the lek.

#### **4.6.6.2. Cumulative Effects**

The cumulative effects associated with proposal 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.

#### **4.6.6.3. Mitigation Measures**

The seasonal timing restriction for sage-grouse (March 15 – June 30) will provide the protection to breeding sharp-tails during the construction and drilling phase of the project..

#### **4.6.6.4. Residual Impacts**

If the well is a producing well, there will be frequent human visitation to the area along a maintained road to a habitat area that is currently undisturbed. Sharp-tailed grouse may avoid the area because of consistent human presence.

### **4.7. Cultural Resources**

#### **4.7.1. Direct and Indirect Effects**

The proposed project will not impact historic properties. Following the Wyoming State Protocol Section VI(A)(1) the BLM electronically notified the Wyoming State Historic Preservation Officer (WSHPO) on March 6, 2012 that no historic properties exist within the area of potential effects. If Stephens or its operators observe any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The Standard COA (General)(A)(1) further explains discovery procedures.

#### **4.7.2. Cumulative Effects**

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.

#### **4.7.3. Mitigation Measures**

If any cultural values [sites, artifacts, human remains (Appendix L PRB FEIS and ROD)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The Standard COA (General)(A)(1) further explains discovery procedures.

#### **4.7.4. 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?
Douglas Wein	Landman	Stephens Energy	Yes
Randy Smith	Consultant	Permitco	Yes
Lisa Smith	Consultant	Permtco	No
Dan Sellers	NRS	BLM	Yes
Don Brewer	Biologist	BLM	Yes
Ardeth Hahn	Archaeologist	BLM	No
Mary Hopkins	WSHPO	WSHPO	No

### Preparers and Reviewers

Name	Duty	Name	Duty
Dan Sellers	Lead Natural Resource Specialist	Casey Freise	Supervisory Natural Resource Specialist
Shirley Green	Plans Coordinator	Kathy Brus	Supervisory Natural Resource Specialist
Matthew Warren	Petroleum Engineer	Karen Klaahsen	Legal Instrument Examiner
Ardeth Hahn	Archaeologist	Donald Brewer	Wildlife Biologist
Kerry Aggen	Geologist	Bill Ostheimer	Supervisory Natural Resource Specialist
John Kelley	NEPA Coordinator	Chris Durham	Assistant Field Manager
Clark Bennett	Assistant Field Manager	Duane Spencer	Field Manager

## 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.

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**APPENDIX A– Wildlife Worksheet  
Threatened, Endangered, Proposed, and Candidate Species Worksheet**

<b>Common Name</b>	<b>Habitat</b>	<b>Presence? (NP, NS, S, K)</b>	<b>Direct Impacts Anticipated?</b>	<b>Intend to apply COA?</b>	<b>Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?</b>
<i>Endangered</i>					
<i>Threatened</i>					
Ute ladies'-tresses orchid	Areas with appropriate hydrology	NP	No	No	4-253, BA & BO
<i>Candidate</i>					
Greater sage-grouse	Basin-prairie shrub, mountain-foothill shrub	S	Yes	Yes	4-257 to 4-273

NP – not present; NS – not suspected; S - suspected; K - known

**Special Status (Sensitive) Species Worksheet**

<b>Common Name</b>	<b>Habitat</b>	<b>Presence ? (NP, NS, S, K)</b>	<b>Direct Impacts Anticipated ?</b>	<b>Intend to apply COA?</b>	<b>Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?</b>
<i>Amphibians</i>					<b>4-258</b>
Northern leopard frog	Beaver ponds and cattail marshes from plains to montane zones.	NP	No	No	
Columbia spotted frog	Ponds, sloughs, small streams, and cattails in foothills and montane zones. Confined to headwaters of the S Tongue R drainage and tributaries.	NP	No	No	
<i>Fish</i>					<b>4-259 &amp; 4-260</b>
Yellowstone cutthroat trout	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	No	No	

Common Name	Habitat	Presence ? (NP, NS, S, K)	Direct Impacts Anticipated ?	Intend to apply COA?	Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?
<b>Birds</b>					<b>4-260 to 4-264</b>
Baird's sparrow	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground.	NP	No	No	
Bald eagle	Mature forest cover often within one mile of large water body with reliable prey source nearby.	NP	No	No	4-251 to 4-253 & BA
Brewer's sparrow	Sagebrush shrubland	S	Yes	Yes	
Ferruginous hawk	Basin-prairie shrub, grasslands, rock outcrops	S	Yes	Yes	
Loggerhead shrike	Basin-prairie shrub, mountain-foothill shrub	S	Yes	Yes	
Long-billed curlew	Grasslands, plains, foothills, wet meadows	NP	No	No	
Mountain plover	Short-grass prairie with slopes < 5%	NP	No	No	4-254, 4-255 & BA
Northern goshawk	Conifer and deciduous forests	NP	No	No	
Peregrine falcon	Cliffs	NP	No	No	
Sage sparrow	Basin-prairie shrub, mountain-foothill shrub	NS	No	No	
Sage thrasher	Basin-prairie shrub, mountain-foothill shrub	NS	No	No	
Trumpeter swan	Lakes, ponds, rivers	NP	No	No	
Western Burrowing owl	Grasslands, basin-prairie shrub	NS	No	No	
White-faced ibis	Marshes, wet meadows	NP	No	No	

<b>Common Name</b>	<b>Habitat</b>	<b>Presence ? (NP, NS, S, K)</b>	<b>Direct Impacts Anticipated ?</b>	<b>Intend to apply COA?</b>	<b>Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?</b>
Yellow-billed cuckoo	Open woodlands, streamside willow and alder groves	NP	No	No	
<b><i>Mammals</i></b>					<b>4-264 &amp;4-265</b>
Black-tailed prairie dog	Prairie habitats with deep, firm soils and slopes less than 10 degrees.	NP	No	No	4-255, 4-256
Fringed myotis	Conifer forests, woodland chaparral, caves and mines	NP	No	No	
Long-eared myotis	Conifer and deciduous forest, caves and mines	NP	No	No	
Spotted bat	Cliffs over perennial water.	NP	No	No	
Swift fox	Grasslands	NS	No	No	
Townsend's big-eared bat	Caves and mines.	NS	No	No	
<b><i>Plants</i></b>					<b>4-258</b>
Limber pine	Mountains, associated with high elevation conifer species	NP	No	No	
Porter's sagebrush	Sparsely vegetated badlands of ashy or tuffaceous mudstone and clay slopes 5300-6500 ft.	NP	No	No	
William's wafer parsnip	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	No	No	

Non-designated wildlife worksheet

<b>Common Name / Group</b>	<b>Presence? (NP, NS, S, K)</b>	<b>Direct Impacts Anticipated?</b>	<b>Intend to apply COA?</b>	<b>Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?</b>
Big Game	Mule deer, pronghorn K	Yes	No	4-181 to 4-215
Aquatics	NP	No	No	4-235 to 4-249
Migratory Birds	K	Yes	No	4-231 to 4-235

Common Name / Group	Presence? (NP, NS, S, K)	Direct Impacts Anticipated?	Intend to apply COA?	Direct, indirect, and/or cumulative impacts anticipated beyond the level analyzed within the PRB FEIS?
Raptors	S	Yes	Yes	4-216 to 4-221
Plains Sharp-tailed Grouse	K	Yes	Yes	4-221 to 4-226

NP – not present; NS – not suspected; S - suspected; K - known

**APPENDIX B**  
**CONDITIONS OF APPROVAL FOR CONVENTIONAL APPLICATION**  
**FOR PERMIT TO DRILL**

Federal 7-25 Vertical Oil Well

Operator: Stephens Oil

Field Office: Buffalo Field Office  
Address: 1425 Fort Street  
Buffalo, Wyoming 82834

Office Telephone Number: 307-684-1100

The spud date will be reported electronically, (see website location above) to the Authorized Officer 24 HOURS BEFORE SPUDDING, unless otherwise required in site specific conditions of approval.

Spud Notice Site:

[http://www.wy.blm.gov/minerals/og/og\\_notices/spud\\_notice.php](http://www.wy.blm.gov/minerals/og/og_notices/spud_notice.php)

List of Wells:

	<b>Well Name</b>	<b>Well #</b>	<b>Qtr/Qtr</b>	<b>Section</b>	<b>TWP</b>	<b>RNG</b>	<b>Lease #</b>
1	Federal	7-25	SWNE	25	54N	69W	WYW79713

**PROGRAMMATIC COAs**

Programmatic mitigation measures are those measures, identified in the PRB FEIS ROD and 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.

**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.

**Transportation**

1. The companies will provide georeferenced special data depicting as-built locations of all facilities, wells, roads, pipelines, power lines, reservoirs, discharge points, and other related facilities to the BLM upon completion of POD construction and development.

### **Wildlife**

1. 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. Containment impoundments will be fenced to exclude wildlife and livestock. If they are not fenced, they will be designed and constructed to prevent entrapment and drowning.

### **SITE SPESIFIC COAs**

The operator will incorporate the changes made at the onsite into the project.

### **Surface Use**

1. Maintain at least a 20', undisturbed, vegetated buffer, from the draw, just west of the pad.
2. Maintain at least a 20', undisturbed, vegetated buffer, from the base of the hill, at the NW end of the pad.
3. All road grades of 8% or better will be graveled. Other unstable/eroding road section will also be graveled as needed.
4. The operator will collect a water sample representative of the water produced from this (these) wells for analysis within 30 to 60 days of initial production. Results of the analysis will be submitted to the BLM Authorized Officer as soon as they become available. The constituents analyzed in the water quality analyses will be the same as those required by the WDEQ for WYPDES permit using approved EPA test procedures (40CFR136 or 40 CFR136.5).
5. After well completion, the operator shall submit a Sundry Notice for approval of disposal of all produced water in accordance with Onshore Order #7.

### **Wildlife**

#### **Raptors**

No surface disturbing activity shall occur within 0.5 mile of the project area from February 1 through July 31, annually, prior to a raptor next survey for the current breeding season.

#### **Sharp-tailed Grouse**

1. No surface disturbing activities are permitted within 0.64 miles of the project area between April 1 and May 31, prior to completion of a grouse lek survey.
  - a. If an active lek is identified during the survey, the 0.64 mile timing restriction (April 1-May 31) will be applied and surface disturbing activities will not be permitted until after the nesting season. If surveys indicate that the identified lek is inactive during the current breeding season, surface disturbing activities may be permitted within the 0.5 mile buffer until the following breeding season (April 1). The required sharp-tailed grouse survey will be conducted by a biologist following WGFD protocol. All survey results shall be submitted in writing to a Buffalo BLM biologist and approved prior to surface disturbing activities.

Creation of raptor hunting perches will be avoided within 0.64 miles of documented sharp-tailed grouse lek sites. Perch inhibitors will be installed to deter avian predators from preying on Sharp-tailed grouse

### **Greater Sage-grouse**

1. Surface disturbing activities are prohibited from March 15 to June 30 in suitable sage-grouse nesting and early brood-rearing habitat within mapped habitat. This condition will be implemented on an annual basis for the life of the project. This condition affects the following locations: Fed. 7-25 well and all associated infrastructure.

### **Migratory Birds**

1. Migratory birds shall be effectively excluded from all facilities that pose a mortality risk, including, but not limited to, heater treaters, flare stacks, and secondary containment where escape may be difficult or wildlife toxicants are present.

## **STANDARD**

### **General**

1. If any cultural values [sites, artifacts, human remains (Appendix L FEIS and ROD)] are observed during operation of this lease/permit/right-of-way, they will be left intact and the Buffalo Field Manager notified. The authorized officer will conduct an evaluation of the cultural values to establish appropriate mitigation, salvage or treatment. The operator is responsible for informing all persons in the area who are associated with this project that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during construction, the operator is to immediately stop work that might further disturb such materials, and contact the authorized BLM officer (AO). Within five working days the AO will inform the operator as to:
  - whether the materials appear eligible for the National Register of Historic Places;
  - the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary); and,
  - a time-frame for the AO to complete an expedited review under 36 CFR 800.11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.
2. If paleontological resources, either large or conspicuous, and/or a significant scientific value are discovered during construction, the find will be reported to the Authorized Officer immediately. Construction will be suspended within 250 feet of said find. An evaluation of the paleontological discovery will be made by a BLM approved professional paleontologist within five (5) working days, weather permitting, to determine the appropriate action(s) to prevent the potential loss of any significant paleontological values. Operations within 250 feet of such a discovery will not be resumed until written authorization to proceed is issued by the Authorized Officer. The applicant will bear the cost of any required paleontological appraisals, surface collection of fossils, or salvage of any large conspicuous fossils of significant scientific interest discovered during the operation.
3. Please contact Dan Sellers, Natural Resource Specialist, at (307) 684-1100, Bureau of Land Management, Buffalo, if there are any questions concerning the following surface use COAs.

## **DRILLING AND PRODUCTION OPERATIONS**

1. Verbal notification shall be given to the Authorized Officer at least 24 hours before formation tests, BOP tests, running and cementing casing, and drilling over lease expiration dates.
2. New hard-band drill pipe shall not be rotated inside any casing. Hard-band drill pipe shall be considered new until it has been run at least once.
3. All Blow Out Prevention Equipment tests shall include a 5 minute low pressure test between 250 psi

and 500 psi with no drop in pressure with the only exception being the chokes. The chokes are only required to have the high pressure test held for a minimum length of time necessary to verify their functional integrity.

4. All operations must be conducted in accordance with all applicable laws and regulations: with the lease terms, Onshore Oil and Gas Orders, NTL's; and with other orders and instructions of the Authorized Officer, unless a variance has been granted in writing by the Authorized Officer.
5. The Operator shall install an identification sign consistent with the requirements of 43 CFR 3162.6 immediately upon or before the completion of the well pad construction operations.
6. All Blow Out Prevention Equipment rated 5M or greater shall be isolated from the casing and tested to stack working pressure. All Blow Out Prevention Equipment tests shall be performed by a suitable test pump, not the rig-mud pumps and recorded on a chart. The chart shall be submitted to the Buffalo Field Office.
7. Low test on Blow Out Prevention Equipment shall be performed and passed before moving onto the high test for each component.
8. If there are indications of inadequate primary cementing of the surface, intermediate, or production casing strings; such as but not limited to no returns to surface, cement channeling, fallback or mechanical failure of equipment, the operator will evaluate the adequacy of the cementing operations. This evaluation will consist of running a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO) no sooner than 12 hours and no later than 24 hours from the time the cement was first pumped.
9. If the evaluation indicates inadequate cementing, the operator shall contact a BLM Buffalo Field Office Petroleum Engineer for approval of remedial cementing work.
10. The adequacy of the remedial cementing operations shall be verified by a cement bond log (CBL) or an alternate method approved by the Authorized Officer (AO). All remedial work shall be completed and verified prior to drilling out the casing shoe or perforating the casing for purposes other than remedial cementing.
11. The cement mix water used must be of the same water quality used to develop the cement program.
12. All oil and gas operations shall be conducted in a manner to prevent the pollution of all freshwater resources. All fresh waters and waters of present or probable future value for domestic, municipal, commercial, stock or agricultural purposes will be confined to their respective strata and shall be adequately protected. Special precautions will be taken to guard against any loss of artesian water from the strata in which it occurs and the contamination of fresh water by objectionable water, oil, condensate, gas or other deleterious substance to such fresh water.
13. Any changes to the approved drilling plan and/or these conditions of approval shall be approved by the BLM-Buffalo Field Office Petroleum Engineer prior to being implemented.  
After hour's numbers: Petroleum Engineer: Matthew Warren      Cell Telephone: 307-620-0103

### **Construction**

1. Construction and drilling activity will not be conducted using frozen or saturated soil material during periods when watershed damage or excessive rutting is likely to occur.

2. Remove all available topsoil (depths vary from 4 inches on ridges to 12+ inches in bottoms) from constructed well locations including areas of cut and fill, and stockpile at the site. Topsoil will also be salvaged for use in reclamation on all other areas of surface disturbance (roads, pipelines, etc.). Clearly segregate topsoil from excess spoil material. Any topsoil stockpiled for one year or longer will be signed and stabilized with annual ryegrass or other suitable cover crop.
3. The operator will not push soil material and overburden over side slopes or into drainages. All soil material disturbed will be placed in an area where it can be retrieved without creating additional undue surface disturbance and where it does not impede watershed and drainage flows.
4. Construct the backslope no steeper than ½:1, and construct the foreslope no steeper than 2:1, unless otherwise directed by the BLM Authorized Officer.
5. Maintain a minimum 20-foot undisturbed vegetative border between toe-of-fill of pad and/or pit areas and the edge of adjacent drainages, unless otherwise directed by the BLM Authorized Officer.
6. To minimize electrocution potential to birds of prey, all overhead electrical power lines will be constructed to standards identified by the Avian Power Line Interaction Committee (1996).
7. The reserve pit will be oriented to prevent collection of surface runoff. After the drilling rig is removed, the operator may need to construct a trench on the uphill side of the reserve pit to divert surface drainage around it. If constructed, the trench will be left intact until the pit is closed.
8. The reserve pit will be lined with an impermeable liner if permeable subsurface material is encountered. An impermeable liner is any liner having a permeability less than 10<sup>-7</sup> cm/sec. The liner will be installed so that it will not leak and will be chemically compatible with all substances that may be put in the pit. Liners made of any man-made synthetic material will be of sufficient strength and thickness to withstand normal installation and pit use. In gravelly or rocky soils, a suitable bedding material such as sand will be used prior to installing the liner.
9. The reserve pit will be constructed so that at least half of its total volume is in solid cut material (below natural ground level).
10. Culverts will be placed on channel bottoms on firm, uniform beds, which have been shaped to accept them, and aligned parallel to the channel to minimize erosion. Backfill will be thoroughly compacted.
11. The minimum diameter for culverts will be 18 inches. However, all culverts will be appropriately sized in accordance with standards in BLM Manual 9113.
12. Construction and other project-related traffic will be restricted to approved routes. Cross-country vehicle travel will not be allowed.
13. Maximum design speed on all operator constructed and maintained roads will not exceed 25 miles per hour.
14. Pipeline construction shall not block nor change the natural course of any drainage. Pipelines shall cross perpendicular to drainages. Pipelines shall not be run parallel in drainage bottoms. Suspended pipelines shall provide adequate clearance for maximum runoff.
15. Pipeline trenches shall be compacted during backfilling. Pipeline trenches shall be routinely inspected and maintained to ensure proper settling, stabilization and reclamation.

16. During construction, emissions of particulate matter from well pad and road construction would be minimized by application of water or other non-saline dust suppressants with at least 50 percent control efficiency. Dust inhibitors (surfacing materials, non-saline dust suppressants, and water) will be used as necessary on unpaved roads that present a fugitive dust problem. The use of chemical dust suppressants on public surface will require prior approval from the BLM Authorized Officer.
17. Operators are required to obtain a National Pollution Discharge Elimination System (NPDES) Storm Water Permit from the Wyoming DEQ for any projects that disturb five or more acres (changing to one acre in March 2005). This general construction storm water permit must be obtained from WDEQ prior to any surface disturbing activities and can be obtained by following directions on the WDEQ website at <http://deq.state.wy.us>. Further information can be obtained by contacting Barb Sahl at (307) 777-7570.
18. The operator shall submit a Sundry Notice (Form 3160-5) to BLM for approval prior to construction of any new surface disturbing activities that are not specifically addressed in the approved APD or POD Surface Use Plan.

### **Operations/Maintenance**

1. Confine all equipment and vehicles to the access road(s), pad(s), and area(s) specified in the approved APD or POD.
2. All waste, other than human waste and drilling fluids, will be contained in a portable trash cage. This waste will be transported to a State approved waste disposal site immediately upon completion of drilling operations. No trash or empty barrels will be placed in the reserve pit or buried on location. All state and local laws and regulations pertaining to disposal of human and solid waste will be complied with.
3. Rat and mouse holes shall be filled and compacted from the bottom to the top immediately upon release of the drilling rig from the location.
4. The operator will be responsible for prevention and control of noxious weeds and weeds of concern on all areas of surface disturbance associated with this project (well locations, roads, water management facilities, etc.) Use of pesticides shall comply with the applicable Federal and State laws. Pesticides shall be used only in accordance with their registered uses and within limitations imposed by the Secretary of Interior. Prior to the use of pesticides on public land, the holder shall obtain from the BLM authorized officer written approval of a plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposal of containers, and any other information deemed necessary by the authorized officer to such use.
5. All permanent above-ground structures (e.g., production equipment, tanks, etc.) not subject to safety requirements will be painted to blend with the natural color of the landscape. The paint used will be a color which simulates "Standard Environmental Colors." The color selected for this project, is Covert Green, 18-0617TPX.
6. Sewage shall be placed in a self-contained, chemically treated porta-potty on location.
7. The operator and their contractors shall ensure that all use, production, storage, transport and disposal of hazardous and extremely hazardous materials associated with the drilling, completion and production of this well will be in accordance with all applicable existing or hereafter promulgated federal, state and local government rules, regulations and guidelines. All project-related activities involving hazardous materials will be conducted in a manner to minimize potential environmental

impacts. In accordance with OSHA requirements, a file will be maintained onsite containing current Material Safety Data Sheets (MSDS) for all chemicals, compounds and/or substances which are used in the course of construction, drilling, completion and production operations.

8. Produced fluids shall be put in test tanks on location during completion work. Produced water will be put in the reserve pit during completion work per Onshore Order #7.
9. The only fluids/waste materials which are authorized to go into the reserve pit are RCRA exempt exploration and production wastes. These include:
  - drilling muds & cuttings
  - rigwash
  - excess cement and certain completion & stimulation fluids defined by EPA as exempt

It does not include drilling rig waste, such as:

- spent hydraulic fluids
- used engine oil
- used oil filter
- empty cement, drilling mud, or other product sacks
- empty paint, pipe dope, chemical or other product containers
- excess chemicals or chemical rinsate

Any evidence of non-exempt wastes being put into the reserve pit may result in the BLM Authorized Officer requiring specific testing and closure requirements.

10. Operators are advised that prior to installation of any oil and gas well production equipment which has the potential to emit air contaminants, the owner or operator of the equipment must notify the Wyoming Department of Environmental Quality, Air Quality Division (phone 307-777-7391) to determine permit requirements. Examples of pertinent well production equipment include fuel-fired equipment (e.g., diesel generators), separators, storage tanks, engines and dehydrators.

### **DryHole/Reclamation**

1. All disturbed lands associated with this project, including the pipelines, access roads, water management facilities, etc. will be expediently reclaimed and reseeded in accordance with the surface use plan and any pertinent site-specific COAs.
2. Disturbed lands will be recontoured back to conform with existing, undisturbed topography. No depressions will be left that trap water or form ponds.
3. The fluids and mud must be dry in the reserve pit before recontouring pit area. The operator will be responsible for recontouring of any subsidence areas that develop from closing a pit before it is completely dry. The plastic pit liner (if any) will be cut off below grade and properly disposed of at a state authorized landfill before beginning to recontour the site.
4. Before the location has been reshaped and prior to redistributing the topsoil, the operator will rip or scarify the drilling platform and access road on the contour, to a depth of at least 12 inches. The rippers are to be no farther than 24 inches apart.
5. Distribute the topsoil evenly over the entire location and other disturbed areas. Prepare the seedbed by disking following the contour.
6. Waterbars are to be constructed at least one (1) foot deep, on the contour with approximately two (2) feet of drop per 100 feet of waterbar to ensure drainage, and extended into established vegetation. All waterbars are to be constructed with the berm on the downhill side to prevent the soft material from

silting in the trench. The initial waterbar should be constructed at the top of the backslope. Subsequent waterbars should follow the following general spacing guidelines:

Slope (percent)	Spacing Interval (feet)
≤ 2	200
2 – 4	100
4 – 5	75
≥ 5	50

7. The operator will drill seed on the contour, to depths of less than 0.5 inch, followed by cultipaction to compact the seedbed, preventing soil and seed losses. To maintain quality and purity, the current years tested, certified seed with a minimum germination rate of 80% and a minimum purity of 90% will be used. On BLM surface or in lieu of a different specific mix desired by the surface owner, use the following: See Master Surface Use Plan.  
Slopes too steep for machinery may be hand broadcast and raked with twice the specified amount of seed.
8. BLM will not release the performance bond until the area has been successfully revegetated (evaluation will be made after the second complete growing season) and has met all other reclamation goals of the surface owner and surface management agency.
9. A Notice of Intent to Abandon and a Subsequent Report of Abandonment must be submitted for abandonment approval.
10. For performance bond release approval, a Final Abandonment Notice (with a surface owner release letter on split-estate) must be submitted prior to a final abandonment evaluation by BLM.
11. Soil fertility testing and the addition of soil amendments may be required to stabilize some disturbed lands.
12. Any mulch utilized for reclamation needs to be certified weed free.

**Producing Well**

1. Landscape those areas not required for production to the surrounding topography as soon as possible. The fluids and mud must be dry in the reserve pit before recontouring pit area. The operator will be responsible for recontouring and reseeding of any subsidence areas that develop from closing a pit before it is completely dry.
2. Reduce the backslope to 2:1 and the foreslope to 3:1, unless otherwise directed by the BLM Authorized Officer. Reduce slopes by pulling fill material up from foreslope into the toe of cut slopes.
3. Production facilities (including dikes) must be placed on the cut portion of the location and a minimum of 15 feet from the toe of the back cut unless otherwise approved by the BLM Authorized Officer.
4. A dike will be constructed completely around the production facilities (i.e. production tanks, water tanks, and heater-treater). The dikes for the production facilities must be constructed of impermeable soil, hold 110% of the capacity of the largest tank plus 1-foot of freeboard, and be independent of the back cut.

5. Any chemicals used in treating the wells (e.g., corrosion inhibitor, emulsion breaker, etc.) will be in a secure, fenced-in area with appropriate secondary containment structure (dikes, catchment pan, etc.).
6. The load out line coming from the oil/condensate tank(s) will have a suitable containment structure to capture and recycle any oil spillage that might occur.
7. Individual production facilities (tanks, treaters, etc.) will be adequately fenced off (if entire facility not already fenced off).
8. Any spilled or leaked oil, produced water or treatment chemicals must be reported in accordance with NTL-3A and immediately cleaned up in accordance with BLM requirements. This includes clean-up and proper disposition of soils contaminated as a result of such spills/leaks.
9. Distribute stockpiled topsoil evenly over those areas not required for production and reseed as recommended.
10. Upgrade and maintain access roads and drainage control (e.g., culverts, drainage dips, ditching, crowning, surfacing, etc.) as necessary and as directed by the BLM Authorized Officer to prevent soil erosion and accommodate safe, environmentally-sound access.
11. Prior to construction of production facilities not specifically addressed in the APD/POD, the operator shall submit a Sundry Notice to the BLM Authorized Officer for approval.
12. If not already required prior to constructing and drilling the well location, the operator shall immediately upgrade the entire access road to BLM standards (including topsoiling, crowning, ditching, drainage culverts, surfacing, etc.) to ensure safe, environmentally-sound, year-round access.
13. Waterbars shall be installed on all reclaimed pipeline corridors per the guidelines in A.4.2.4 #6.