DECISION RECORD
Slawson Explorations Whitetail Federal A-1 Re-entry Vertical Oil Well and Whitetail Federal A-1 Water Injection Well, Plan of Development (POD)
Environmental Assessment (EA), WY-070-EA14-11
Bureau of Land Management, Buffalo Field Office, Wyoming

DECISION. The BLM approves Slawson Exploration Whitetail Federal A-1 Re-entry oil well and the associated Whitetail A-1 Water Injection Well, applications for permit to drill (APDs) as described in Alternative B of the environmental assessment (EA), WY-070-EA14-11, incorporated here by reference. This approval includes the wells' support facilities.

Compliance. This decision complies with the following:

- 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 Onshore Order No. 1.
- National Environmental Policy Act of 1969 (NEPA) (42 USC 4321).
- National Historic Preservation Act of 1966 (NHPA) (16 USC 470).
- Buffalo Resource Management Plan (RMP) 1985, and Amendments.

BLM summarizes the details of the approval of Alternative B, below. The EA includes the project description, including specific changes made at the onsites, and site-specific mitigation measures.

Well List. BLM approves the following APDs and support facilities:

#	Well Name & #	Qtr/Qtr	Section	Twp	Rng	Lease #
1	Whitetail Federal A-1	SWNE	4	46N	69W	WYW157589
2	Whitetail Federal Water Injection A-1	NWSE	4	46N	69W	WYW157589

List of Rights-of-Way.

ROW Grant	ROW Action	Section	Twp	Rng	Lengths	Width	Disturbance
WYW-168427	Road access	7,4,12,15	T46N	R69W, R70W	2.6 miles	40 ft	12.3 acres

Water Management: BLM approves the use of the Whitetail Federal A-1 injector well described above for disposal of project related produced water

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

THE FINDING OF NO SIGNIFICANT IMPACT (FONSI). Analysis of the approved Alternative in EA, WY-070-EA14-11, and the FONSI found this project will have no significant impacts on the human environment, beyond those described in the PRB FEIS. There is no requirement for an EIS.

COMMENT OR NEW INFORMATION SUMMARY. BLM publically posted the proposed APDs for 30 days, received no comments, and then internally scoped them. BLM experience in the PRB (outside of the Fortification Creek Planning Area) revealed little public input or new issue discovery other than those revealed after public scoping during development of the PRB FEIS.

DECISION RATIONALE. BLM bases the decision authorizing the selected project on:

1. BLM and the operator included mitigation measures to reduce environmental impacts while meeting the BLM's need. For a complete description of all site-specific COAs associated with this approval, see the COAs. The PRB FEIS analyzed and predicted that the PRB oil and gas development would

have significant impacts to the region's Greater Sage-Grouse (GSG) population. The impact of this development cumulatively contributes to the potential for local GSG extirpation. Although the project is in priority habitat, the density disturbance calculation tool (DDCT) analysis review by the Wyoming Game & Fish concluded that the project will not cause declines in GSG populations.

2. The operator will conduct operations to minimize adverse effects to surface and subsurface resources, prevent unnecessary surface disturbance, and conform to currently available technology and practice. The project area is clearly lacking in wilderness characteristics as it lacks federal surface.

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 the approved APDs, applicable laws, regulations, orders, and notices to lessees.
   Obtain necessary permits from agencies.
   Offer water well agreements to the owners of record for permitted wells.
   Incorporate several measures to alleviate resource impacts into their submitted surface use plan and drilling plan.

5. The Operator certified it has a surface access agreement or posted a bond.

6. This APD is pursuant to the Mineral Leasing Act for the purpose of exploring or developing oil or gas and do not satisfy the categorical exclusion directive of the Energy Policy Act of 2005, Section 390 because the project is in Greater Sage-Grouse "Core Area".

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

Field Manager: _____ Date: 12/5/13

FINDING OF NO SIGNIFICANT IMPACT
Slawson Exploration Whitetail A-1 Vertical Re-entry Oil Well and the Whitetail A-1 Water Injection Well, Plan of Development (POD)
Environmental Assessment (EA), WY-070-EA14-11
Bureau of Land Management, Buffalo Field Office, Wyoming

FINDING OF NO SIGNIFICANT IMPACT (FONSI). Based on the information in the EA, WY-070-EA14-11, which BLM incorporates here by reference; I find that: (1) the implementation of Alternative B will not have significant environmental impacts beyond those addressed in the Buffalo Final Environmental Impact Statement (FEIS) 1985, and the Powder River Basin (PRB) FEIS, 2003, (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. Thus an EIS is not required. I base this finding on consideration of the Council on Environmental Quality's (CEQ) criteria for significance (40 CFR 1508.27), with regard to the context and to the intensity of the impacts described in the EA, and Interior Department Order 3310.

CONTEXT: Mineral development is a common land use in the PRB, sourcing over 42% of the nation's coal. The PRB FEIS reasonably foreseeable development analyzed the development of 54,200 wells. The additional 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 in the 1985 RMP, 2003 PRB FEIS, or other legislative or regulatory processes. BLM used relevant scientific literature and professional expertise in preparing the EA. The scientific community is reasonably consistent with their conclusions on environmental effects relative to oil and gas development. Research findings on the nature of the environmental effects are not highly controversial, highly uncertain, or involve unique or unknown risks. 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. The proposal may contribute to the PRB Greater Sage-Grouse decline (GSG), having cumulative significant impacts; yet the small size of this project is within the parameters of the impacts in the PRB FEIS, State of Wyoming Sage-grouse Executive Order Wyoming, 2011-5, and BM Instruction Memorandum, WY-2012-19. 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 it lacks federal surface. No species listed under the Endangered Species Act or their designated critical habitat will be adversely affected. Alternative B 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. Parties 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.

Field Manager: _____ Date: 12/5/13

ENVIRONMENTAL ASSESSMENT (EA), WY-070-EA14-11
Slawson Exploration Inc., Whitetail Federal A-1 Re-entry Vertical Oil Well and Whitetail A-1 Water Injection Well, Plan of Development (POD),
Bureau of Land Management, Buffalo Field Office, Wyoming

1. INTRODUCTION

BLM provides an EA for the Whitetail Federal A-1 Re-entry Vertical Oil Well and the associated Whitetail Federal A-1 Water Injection Well (WIW), applications for permit to drill (APDs), in 46N 69W Section 4, Campbell County – which are on fee surface over federal mineral lease. 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: http://www.blm.gov/wy/st/en/field_offices/Buffalo.html. The APDs are pursuant to the Mineral Leasing Act for exploring or developing oil or gas and do not satisfy the categorical exclusion directive of the Energy Policy Act of 2005, Section 390 because, the project is in Greater Sage-Grouse "Core Area".

Congress made a 4-part process for federal fluid mineral decisions under the long-term needs of multiple-use. First is the land use / resource management plan (RMP); here the PRB FEIS and ROD amendment to the BFO RMP. Second are the decisions of whether and, if so, under what conditions, to lease lands for fluid mineral development. Courts held leasing decisions are an almost irrevocable resource commitment. Third, (this phase) is deciding on the proposed POD or APD, or both: the site-specific analysis, and mitigation. Fourth is the monitoring and reclamation of wells and their features. (Pendery 2010)

1.1. Background

The operator submitted the plan of development (POD) on March 25, 2013, with 2 APDs to develop and produce oil. The drilling will be a vertical "re-drill"on an existing location. The area is currently used for ranching, wildlife production, hunting and fluid mineral production. On-sites of the proposed disturbance were conducted on January 25, 2013 by BLM, WY Game & Fish Dept., and operator representatives. There are 9 abandoned oil and gas wells within l mile of the proposed wells and one shut in/dormant, water well. The proposed well is in a known H2S (hydrogen sulfide) area.

1.2. Need for the Proposed Project

BLM's need for this project is to determine whether, how, and under what conditions to support the Buffalo Resource Management Plan's (RMP) goals, objectives, and management actions (2003 Amendment) with allowing the exercise of the operator's conditional lease rights to develop fluid minerals on federal leases. The APDs' information is an integral part of this EA, which BLM incorporates here by reference. Conditional fluid mineral development supports the RMP and the Mineral Leasing Act of 1920, 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 agreeing with the Bureau's multiple use mandate, environmental protection, and RMP.

1.4. Scoping and Issues

BFO external scoping included a 30 day posting of proposed APDs 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 the BFO analyzed. External scoping is unlikely to identify new issues, as verified

with recent fluid mineral EAs BLM recently externally scoped. External scoping in 2010 and 2011 for a proposed RMP amendment revealed no new issues outside of the Fortification Creek area. The proposal is near the Thunder Basin National Grassland (TBNG) but on private surface so BLM had no duty to scope the proposal with the TBNG's proponent.

The BFO interdisciplinary team (ID team) conducted internal scoping by reviewing the proposed development and project location to identify potentially affected resources and land uses. 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: site stability, reclamation potential, riparian and wetland communities, invasive species
- Water: ground water, quality, and quantity of produced water.
- Wildlife: raptor productivity, migratory birds, special status species, greater sage-grouse core area conservation.
- Cultural Resources

2. PROPOSED PROJECT AND ALTERNATIVES

2.1. Alternative A – No Action

The no action alternative would deny these APDs requiring the operator to resubmit APDs that comply with statutes and the reasonable measures in the PRB RMP Record of Decision (ROD) in order to lawfully exercise conditional lease rights. The PRB FEIS considered a no action alternative, pp. 2-54 to 2-62. The BLM keeps the no action alternative current using the aggregated effects analysis approach – tiering to or incorporating by reference the analyses and developments approved by the subsequent NEPA analyses for adjacent and intermingled developments to the proposal area.

2.2. Alternative B Proposed Action

Well Name & Number	Qtr	Sec	Twp	Rng	Lease #	Status
Whitetail A-1	SWNE	4	46N	69W	WYW157589	APD
Whitetail A-1 Water Inj.	NWSE	4	46N	69W	WYW157589	APD

Operator/Applicant: Slawson Exploration Inc.

Surface Owners: Bishop Land & Cattle. The proposal is all on private land, using existing crown and ditched roads and well locations. The area is lacking wilderness characteristics as it lacks federal surface.

Company proposes drilling and developing 1 vertical oil well and 1 water injection well into federal mineral estate from existing well pads and roads. The proposed wells are 40 miles south of Gillette, Wyoming, in Campbell County. The primary objective is to drill to the Minnelusa formation at approximately 10,000 feet total vertical distance.

Drilling, Construction and Production Design Features Include:

- The operator anticipates completing drilling and construction in 2 years. Drilling and construction is year-round in the region. Weather may cause delays but delays rarely last multiple weeks. Timing limitations in the form of conditions of approval (COAs) and/or agreements with surface owners may impose longer temporal restrictions.

- A road network consisting of existing improved roads.
- An existing and proposed above and/or below ground power line network.
- Potential production facilities including a pumping unit, a tank battery, heater /treater, located on the well pad and placed on the cut portion of the location, a minimum of 20 feet from the toe of the back cut.
- All engines will be equipped with an adequate muffler system, decibel level not to exceed 70 decibels at a distance of 200 feet from the exhaust of any muffler.
- No pits at the producing oil well location during production.
- A water injection well.
- Operator estimates that less than 1,000 bbls. of fresh water will be used to drill and complete the wells. It is estimated that it will take (round trip) 11 semi- truck loads, 32 large truck loads and 40 pickup truck trips, to drill and complete these wells. During the production phase of these wells, average daily traffic (ADT) is estimated to be 1 pickup truck per day.
  The water will come from approved sources.

List of Approved Right-of-Way:

ROW Grant	ROW Action	Section	Twp	Rng	Lengths	Width	Disturbance
WYW-168427	Road access	7,4,12,15	T46N	R69W, R70W	2.6 miles	40 ft	12.3 acres

For a detailed description of design features and construction practices associated with the proposal, refer to the surface use plan (SUP) and drilling plan included with the APDs. Also see the subject APDs for maps showing the proposed well location and associated facilities described above.

Table 2.1. Disturbance Summary for proposed Wells (All on existing roads and locations):

Facility	Number or Miles	Factor	Disturbance
Existing Engineered Location- A-1 Oil Well	1 (175 ft x 350 ft)	43,560 sq ft	1.7 acres, existing
Existing Engineered Location-A-l Injection Well	1(300 ft x 350 ft)	43,560 sq ft	2.43 acres, existing
Existing Improved Roads with Utilities	1.3 miles x 25 ft	43,560 sq ft	4 acres, existing
Total Surface Disturbance (proposed)			**Acres 8.43**

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 ROD, as well as changes made at the onsite.

Additionally, the Operator, in their APDs, committed to:
1. Comply with the approved APDs, applicable laws, regulations, orders, and notices to lessees.
2. Obtain necessary permits from agencies.
3. Offer water well agreements to the owners of record for permitted wells.
4. Incorporate several measures to alleviate resource impacts into their submitted surface use plan and drilling plan.

The reasonably foreseeable development for this and adjacent areas includes re-entering several plugged and abandoned oil wells and/or drilling additional oil wells, if production from this new well is profitable. Existing well pads and associated infrastructure will be used as much as possible.

2.3. Conformance to the Land Use Plan

This proposal does not diverge from the goals and objectives in the Buffalo Resource Management Plan (RMP), 1985, 2001, 2003, 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 the alternatives in Section 2. Aspects of the affected environment here focus on the major issues. Find a screening of all resources and land uses potentially affected in administrative record. Resources unaffected, or not affected beyond the level analyzed in the PRB FEIS, are outside this EA's scope**.** The Wyoming Game and Fish Department's (WGFD's) Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (2009), make no distinction between surface disturbance impacts per well type or drilling technology. 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 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 where no distinction exists in 43 CFR 3160 et. seq, leasing, and 2005's Energy Policy Act. (Kreckel 2007)

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. 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 that exceeded EPA limits for 13 days in 2011 requiring 10 warnings to stay indoors; in addition to PRB-area air quality alerts issued in 2011 for particulate matter (PM), attributed to coal dust. 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.

Existing air pollutant emission sources in the region include:

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

3.2. Soils

Project area soils developed in alluvium and residuum derived mainly from the Wasatch Formation. Lithology consists of light to dark yellow and tan siltstone and sandstones with minor coal seams resulting in a wide variety of surface and subsurface textures. Soil depths vary from deep on lesser slopes to shallow and very shallow on steeper slopes. Differences in lithology produced topographic and geomorphic variations in the area. An erosion resistant cap of clinker, terrace gravels, or sandstone often

protects ridges and hills. Parent material chemistry may result in local concentration of salts. Soils differ with topographic location, slope, and elevation. Topsoil depths available for reclamation range from 6 inches to 12 inches plus. Erosion potential varies depending on the soil type, vegetative cover, and slope. Reclamation potential of soils also varies in the project area. The area main soil limitations include: depth to bedrock, low organic matter content, and high erosion potential especially in areas of steep slopes.

The Campbell County Survey Area, Wyoming Soil Survey Geographic (SSURGO) Database WY605, provide detailed soils identification and data. NRCS performed the soil survey according to National Cooperative Soil Survey standards. The BLM uses county soil survey information to predict soil behavior, limitations, or suitability for a given activity or action. The agency's long term goal for soil resource management is to maintain, improve, or restore soil health and productivity, and to prevent or minimize soil erosion and compaction. Soil management objectives are to ensure that adequate soil protection is consistent with the resource capabilities. Soils and landforms of this area may present distinct challenges for development, and/or eventual site reclamation. Dominant/Important Soils/Ecological sites in the affected area are mostly sands and clays soils. The major ecological sites for the project are clayey, shallow clayey and sandy. A small portion of the affected area is "unrated". See the NRCS Soil Survey Campbell County (SSURGO) data. The Ecological Site interpretations include additional site-specific soil information.

3.2.1. Soils Susceptible to Erosion Soil formation is a very slow process. Most soils cannot renew their eroded surface and productivity while erosion continues. The development of a favorable rooting zone by the weathering of parent rock is much slower than development of the surface horizon. One estimate of this renewal rate is 0.5 ton per acre per year for unconsolidated parent materials and much less for consolidated materials. These very slow renewal rates support the philosophy that any soil erosion is too much. Loss of organic matter, resulting from erosion and tillage, is one of the primary causes for reduction in production yields. When organic matter decreases, soil aggregate stability, the soil's ability to hold moisture, and the cation exchange capacity decline. (Soil Quality-Agronomy Technical Note #7, USDA, Aug 1998)**.**

3.3. Vegetation and Ecological Sites

BLM staff identified the dominant vegetation community types in the project area are ponderosa pine/juniper, mixed-grass prairie, sagebrush shrubland and woodlands. Species typical of these plant communities include: ponderosa pine, juniper, big sagebrush, silver sagebrush, rabbitbrush, fourwing saltbush, yucca, western wheatgrass, crested wheatgrass, prairie junegrass, needle & thread grass, pricklypear cactus, threadleaf sedge and cheatgrass. The dominant ecological sites in the project area are Sandy & Clayey. These sites occur on nearly level to 30% slopes. The landform is hill sides, alluvial fans and stream terraces.

This site's soils are moderately deep (greater than 20 inches to bedrock) to very deep, well-drained soils that formed in alluvium or alluvium over residuum. These soils have slow to fast permeability. The layers of soil having the most influence on plants vary from 4 to 8 inches thick. The surface soil will vary from 2 to 5 inches deep and have one of the following textures: silty clay, sandy clay, clay, and the finer portions of silty clay loam, clay loam, and sandy clay loam. These soils may develop severe cracks. The main soil limitations include: low organic matter content and soil droughtiness. The low annual precipitation should be considered when planning a seeding. See the NRCS Soil Survey WY605 for more information.

3.4. Water Resources

WDEQ regulates Wyoming's water quality with oversight by the U.S. Environmental Protection Agency (EPA) per the Clean Water Act, 33 USC 1251 et seq. (1972). 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.

3.4.1. Groundwater

The historical use for groundwater in this area was for stock water. A search of the WSEO Ground Water Rights Database showed one registered stock water well within 1 mile of the proposed well. The stock water well is completed at a depth of 700 feet. Refer to the PRB FEIS for additional information on groundwater, pp. 3-1 to 3-36.

3.4.2. Surface Water

The project area is in the Buffalo Creek drainage which is tributary to the Upper Belle Fourche River, which in turn flows into the Belle Fourche River. Most of the area drainages are ephemeral (flowing only in response to a precipitation event or snow melt) to intermittent (flowing only at certain times of the year when it receives water from alluvial groundwater, springs, or other surface source – PRB FEIS, Chapter 9, Glossary). The channels are primarily well vegetated grassy swales, without defined bed and bank. See generally the PRB FEIS for a surface water quality discussion, pp. 3-48 to 3-49. A search of the WSEO Ground Water Rights Database, and an on-the-ground investigation showed no springs within 1 mile of the project area. For more information on surface water refer to the PRB FEIS, pp. 3-36 to 3-56.

3.5. Wetlands/Riparian

The National Wetland Inventory (NWI) identifies no wetlands near the project area.

3.6. Invasive Species

The project proponent discovered state-listed noxious weeds and invasive/exotic plant infestations by a search of inventory maps and/or databases or during subsequent field investigation. They include cocklebur, black henbane, buffalobur, and cheatgrass. Cheatgrass or downy brome (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) are known to exist in the affected environment. These species are found in high densities and numerous locations in NE Wyoming.

3.7. Fish and Wildlife

The PRB FEIS identified wildlife species occurring in the PRB, pp. 3-113 to 3-206. The biologists' onsite 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, 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 for wildlife species known or likely to occur in the project area that are likely to be impacted by the action.

3.7.1. Threatened, Endangered, Candidate, Special Status (Sensitive) Species

The Buffalo BLM receives a species list periodically from the Fish and Wildlife Service (FWS) concerning threatened, endangered, proposed, and candidate species. The 2012 list included Ute Ladies'-tresses orchid (threatened) and Greater Sage-Grouse (candidate). In addition to the listed species, the FWS letter also included migratory birds and wetland/riparian habitats.

3.7.1.1. Ute Ladies'-Tresses Orchid (ULT)

The FWS lists the Ute ladies'-tresses orchid (ULT) as threatened. The PRB FEIS discussed the affected environment for ULT, p. 3-175. The Wyoming Natural Diversity Database model predicts undocumented populations may be present in southern Campbell and northern Converse Counties. Scientists documented 4 orchid populations in Wyoming prior to 2005. Scientists found 5 additional sites in 2005 and 1 in 2006. The new locations were in the same drainages as the original populations, with 2 on the same tributary and within a few miles of an original discovery. Drainages with documented orchid populations include

Antelope Creek in northern Converse County, Bear Creek in northern Laramie and southern Goshen Counties, Horse Creek in Laramie County, and Niobrara River in Niobrara County. Repeated surveys conducted for federal coalbed natural gas projects in the PRB have not identified the plant in suitable habitat. This project is in relatively dry, upland site. Habitat for ULT does not exist at the project location.

3.7.1.2. Candidate Species – Great Sage-Grouse (GSG)

The PRB FEIS has a detailed discussion on GSG ecology and habitat, pp. 3-194 to 3-199. Subsequently the FWS determined the Greater Sage-Grouse (GSG) warrants federal listing as threatened 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. GSG are a WY BLM special status (sensitive) species (SSS) and a WGFD species of greatest conservation need because of population decline and ongoing habitat loss. The 2012 population viability analysis for the Northeast Wyoming GSG found there remains a viable population of GSG in the PRB (Taylor et al. 2012). However, threats from energy development and West Nile virus (WNv) are impacting future viability (Taylor et al. 2012). The BLM IM WY-2012-019 establishes interim management policies for proposed activities on BLM-administered lands, including federal mineral estate, until RMP updates are complete.

The Whitetail A-1 wells and access road are in the Thunder Basin GSG core area as defined by the State of Wyoming Sage-Grouse Core Area Protection Executive Order (EO), 2011-5. The wells are not within 4 miles of any occupied GSG leks as mapped by WDGF. One lek, the Whitetail Creek Lek is approximately 1.7 miles north of the project area, but its status is classified by the WDGF as "Undetermined". There are 5 GSG leks within 4 miles of the proposed access road including the Whitetail Creek Lek. Of these, 2 are classified as "Occupied". These leks are listed in Table 3.1. A density disturbance calculation tool (DDCT) and habitat analysis was conducted by ICF International as required by EO 2011-5 (See WGFD letter in Appendix). It was determined that existing disturbance exceeds EO 2011-5 guidelines and that suitable GSG habitat does exist in the project area but it is intermixed with coniferous forest making the area less attractive for GSG use.

Table 3.1. WGFD Category of Impact for Greater Sage-Grouse Leks in the Project Area

Lek Name[1]	Distance to Project (miles)	WGFD Status
Deaver	2.7 west	Occupied
Flora	2.6 west	Occupied
Belle Fourche South	1.7 west	Unoccupied
Edwards	1.7 west	Unoccupied
Whitetail Creek	1.7 north	Undetermined

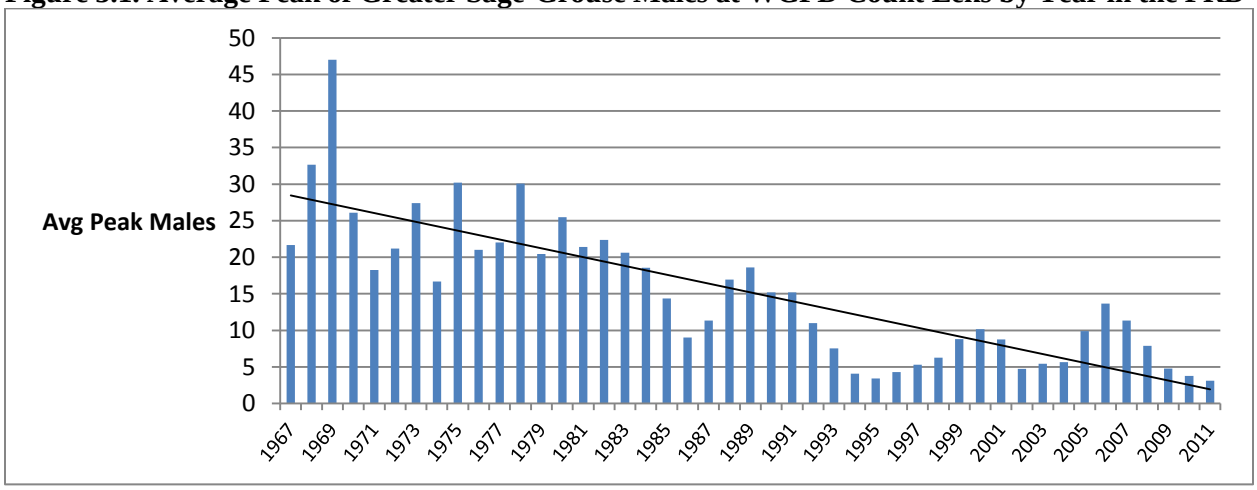
[1] Lek locations obtained from BLM 2012b. The locations of permitted and producing oil and gas wells were obtained from the WOGCC online database (WOGCC 2012b).

In its *Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats* (2009), WGFD categorized impacts to GSG 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 GSG population in northeast Wyoming is exhibiting a steady long term downward trend, as measured by lek attendance (WGFD 2011b). Figure 3.1 illustrates a 10-year cycle of periodic highs and lows. Each subsequent population peak is lower than the previous peak. Research suggests that the declines since 2001 are a result, in part, of energy development (FWS 2010, Taylor et. al. 2012).

Impacts from oil and gas development are discernible at the spatial scale of 20 km (12.4 mi) (Taylor et al. 2012). These findings echo results from previous studies conducted in the basin, wherein biologists observed basin-wide population declines (Walker et al. 2007). There are 14 documented occupied leks within 12.4 miles of the Whitetail A-1 project wells, 7 of which are in the core area.

Figure 3.1. Average Peak of Greater Sage-Grouse Males at WGFD Count Leks by Year in the PRB



3.7.2. Special Status (Sensitive) Species (SSS)

The PRB FEIS discussed the affected environment for SSS, p. 3-174 to 201. The authority for the SSS comes from the ESA, Title II of the Sikes Act, the FLPMA, DOI Manual 235.1.1A, and BLM Manual 6840. The Summary of Sensitive Species Habitat and Project Effects Associated with Alternative B table in Appendix A, below, lists those SSS that may occur in the project area. The table also includes a brief description of the habitat requirements for each species. Wyoming BLM annually updates its list of SSS to focus management to maintain habitats to preclude listing as a threatened or endangered species. See the above references for the policy goals. Wyoming BLM updates SSS on its website: http://www.blm.gov/wy/st/en/programs/Wildlife.html. BLM discusses those SSS impacted beyond the level analyzed in the PRB FEIS in Appendix A, below.

3.7.3. Big Game

The big game species occurring in the project area are mule deer and elk. The PRB FEIS discussed the affected environment for mule deer and elk on pp. 3-117 to 3-122, pp. 3-127 to 3-132, 3-122 to 3-127, and 3-132 to 3-140, respectively. The WGDFD delineated the project area as winter/yearlong range for mule deer in the Thunder Basin (752) herd unit. The mule deer population in unit is currently below the population objective for the unit (WGFD 2012). Although the project area is not in the WGFD delineated range for elk, a significant amount of sign was seen during the onsite field visit.

3.7.4. Small Game, Birds, and Mammals (Sage-Grouse: see Candidate Species, below)

3.7.4.1. Raptors

The PRB FEIS discussed the affected environment for raptors, pp. 3-141 to 3-148. The BLM raptor database does not indicate any raptor nests in the project area. A survey by ICF International did not find any raptor nest sites within 0.5 miles of the project boundary (ICF International 2012). Most raptor species nest in a variety of habitats including (but not limited to): native and non-native grasslands, agricultural lands, live and dead trees, cliff faces, rock outcrops, and tree cavities. Suitable nesting habitat is present in the project area

3.7.4.2. Migratory Birds

The PRB FEIS discussed the affected environment for migratory birds, pp. 3-150 to 3-153. A wide variety of migratory birds may occur in the proposed project area at some point during the year. Migratory birds are birds that migrate for breeding and foraging at some point in the year. The BLM-FWS Memorandum of Understanding (MOU) (2010) promotes the conservation of migratory birds, complying with Executive Order 13186 (Federal Register V. 66, No. 11). BLM must include migratory birds in every NEPA analysis of actions that have potential to affect migratory bird species of concern to fulfill obligations under the Migratory Bird Treaty Act (MBTA). The MBTA (and Bald and Golden Eagle Protection Act (BGEPA)) are strict liability statutes so require no intent to harm migratory birds through prosecuting a taking. Recent prosecutions or settlements in Wyoming, and the west, cost companies millions of dollars in fines and restitution (which was usually retrofitting power lines to discourage perching to minimize electrocution or shielding ponds holding toxic substances). BLM encourages voluntary design features and conservation measures supporting migratory bird conservation, in addition to appropriate restrictions.

Habitats occurring near the proposed well location include a mixture of mixed grass prairie, sage-brush steppe grasslands, and mature coniferous forest. Many species that are of high management concern use these areas for their primary breeding habitats (Saab and Rich 1997). Nationally, grassland and shrubland birds declined more consistently than any other ecological association of birds over the last 30 years (WGFD 2009). The FWS's Birds of Conservation Concern (BCC 2008) report identifies species of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the Endangered Species Act. Species in this list that have the potential to occur in the project area are: loggerhead shrike

The WGFD Wyoming Bird Conservation Plan (Nicholoff 2003) identified 3 groups of Wyoming's high-priority bird species: 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 of high priority but are of local interest. Species likely occurring in the project area are in Table 3.3. Several migratory species are also BLM special status (sensitive) species (SSS). Those known or that have the potential to occur in the project area include; Brewer's sparrow, ferruginous hawk, loggerhead shrike, sage thrasher, and western burrowing owl.

Table 3.3. Sensitive Specie Migratory Birds in Shrub-steppe Habitat, NE Wyoming (Nicholoff 2003)

Level	Species	WY BLM Sensitive	Species	WY BLM Sensitive
Level I	Brewer's sparrow	Yes	Sage sparrow	Yes
	Ferruginous hawk	Yes		
Level II	Grasshopper Sparrow	No	Loggerhead shrike	Yes
	Lark bunting	No	Sage thrasher	Yes
	Lark sparrow	No	Vesper sparrow	No
Level III	Common poorwill	No	Say's phoebe	No

3.7.4.3. Plains Sharp-tailed Grouse

The PRB FEIS discussed the affected environment for plains sharp-tailed grouse on pp. 3-148 to 3-150. Sharp-tailed grouse inhabit short and mixed-grass prairie, sagebrush shrublands, woodland edges, and river canyons. In Wyoming, this species is found where grasslands are intermixed with shrublands, especially wooded draws, shrubby riparian area, and wet meadows. Habitats in the project area have limited potential to support sharp-tailed grouse. The closest known sharptail lek is 15 miles away and there is a lack of berry producing shrubs and trees to support sharptails in the fall and winter.

3.7.5. West Nile Virus

West Nile virus (WNv) is a mosquito-borne disease that can cause encephalitis or brain infection. Mosquitoes spread this virus after feeding on infected birds and then bite people, other birds, and animals. WNv is not spread by person-to-person contact, and there is no evidence that people can get the virus by handling infected animals. Since its discovery in 1999 in New York, WNv established and spread across the United States. Birds are the natural vector host and serve not only to amplify the virus, but to spread it. *Culex tarsalis* appears to be the most common mosquito vector. Mosquitoes can hatch from standing water in as few as 4days. BLM summarized USGS data found at www.westnilemaps.usgs.gov in Table 3.4. Reported data from the PRB includes Campbell, Sheridan, and Johnson Counties.

Table 3.4. Historical West Nile Virus Information

Year	Total WY Human Cases	Human Cases PRB	Equine Cases PRB	Bird Cases PRB
2001	0	0	0	0
2002	2	0	15	3
2003	392	85	46	25
2004	10	3	3	5
2005	12	4	6	3
2006	65	0	2	2
2007	155	22	Unknown	1
2008	10	0	0	0
2009	10	1	1	No record
2010	6	0	0	0
2011	3	0	Unknown	No record

Source: Wyoming Department of Health, http://diseasemaps.usgs.gov/wnv_wy_human.html

Human cases of WNv in Wyoming occur primarily in the late summer or early fall. Scientists found WNv in 157 bird species, horses, 16 other mammals, and alligators (Marra et al 2003). In the eastern US, avian populations incurred very high mortality, particularly corvids (crows, jays). Raptor species also appear to be highly susceptible to WNv. Wyoming scientists documented in 2003 that 36 raptors died from WNv in Wyoming, including golden eagle, red - tailed hawk, ferruginous hawk, American kestrel, Cooper 's hawk, northern goshawk, great-horned owl, prairie falcon, and Swainson 's hawk (Cornish et al. 2003). The Wyoming State Vet Lab determined 22 GSG in one study project (90% of the study birds), succumbed to WNv in the PRB in 2003. While birds infected with WNv have many of the same symptoms as infected humans, they appear to be more sensitive to the virus (Rinkes 2003). Current science suggests a synergy between WNv and energy development amplifying the negative impact GSG (FWS 2010 p. 13947).

There is usually increased surface water in the PRB associated with CBNG development. This increase in potential mosquito breeding habitat provides opportunities for mosquito populations to increase. Preliminary research conducted in the PRB indicates WNv mosquito vectors were notably more abundant on a developed CBNG site than 2 similar undeveloped sites (Walker et al. 2003). The WDEQ and the Wyoming Department of Health sent a letter to CBNG operators on June 30, 2004. The letter encouraged people employed in occupations that require extended periods of outdoor labor, be provided educational material by their employers about WNv to reduce the risk of WNv transmission.

3.8. Cultural Resources

In accordance with section 106 of the National Historic Preservation Act, BLM must consider impacts to historic properties (sites that are eligible for or listed on the National Register of Historic Places (NRHP)). For an overview of cultural resources found in the area refer to the, *Draft Cultural Class I Regional Overview, Buffalo Field Office* (BLM, 2010). A Class III (intensive) cultural resource inventory (BFO

project no. 700130012) was performed to locate specific historic properties which may be impacted by the proposal. The following resources are in or near the proposal area.

Cultural Resources Near the Proposal & National Register of Historic Places (NRHP) Eligibility

Site #	Site Type	NRHP Eligibility	Site #	Site Type	NRHP Eligibility
48CA828	Prehistoric Site	Unevaluated	48CA1517	Prehistoric Site	Unevaluated
48CA1444	Prehistoric Site	Unevaluated	48IR1	Prehistoric Site	Not Eligible

4. ENVIRONMENTAL EFFECTS

No Action Alternative. BLM analyzed the no action alternative as Alternative 3 in the PRB FEIS and it subsequently received augmentation of the effects analysis in this EA through the analysis of mineral projects, their approval, and construction; and through the analysis and approval of other projects. The PRB FEIS considered a No Action Alternative, pp. 2-54 to 2-62. This alternative must also consider and aggregate the effects analyzed in the PRB FEIS analysis with incorporating by reference the subsequent analysis and development from the adjacent and intermingled projects, see Table 2.1 and this EA's Appendix B, below). The total number of conventional wells approved by BFO is 359, which includes 193 horizontal wells (as of March 2012). The Wyoming Oil and Gas Conservation Commission (WOGCC) permitted 103 wells. The total is 453, which represents 14% of the projected 3,200 in the 2003 PRB ROD. (See Tables 2.3 and 2.5 for an approximation of the disturbance in the current situation.) This agrees with the PRB FEIS which analyzed the reasonably foreseeable development rolling across the PRB of over 51,000 coalbed natural gas (CBNG) and 3,200 natural gas and oil wells. The production and the drilling and completion of these new wells would result in noise and human presence that could affect resources in the project area; these effects could include the disruption of wildlife, the dispersal of noxious and invasive weed species, and dust effects from traffic on unpaved roads. Present fluid mineral development in the PRB is under half of that envisioned and analyzed in the PRB FEIS. There is only a remote potential for significant effects above those identified in the PRB FEIS to resource issues as a result of implementing the no action alternative

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 amount of air pollutant emissions during construction would be controlled by watering disturbed soils, and by air pollutant emission limitations imposed by applicable air quality regulatory agencies. Air quality impacts modeled in the PRB FEIS and Cumulative Air Quality Effects, 2009 concluded that PRB projected fluid and solid development would not violate state, tribal, or federal air quality standards and this project is well within the projected development parameters.

4.2. Soils

4.2.1. Direct and Indirect Effects

Proposed and existing, pads, roads, and culverts are shown on the MSUP and the WMP maps (see the POD). These structures would be built per sound engineering practices and BLM standards.

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 cumulatively, would 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. 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 the operator 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 the operator's 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: reduced road construction by placing the well on an existing location, near existing access roads. BLM approved fluids and drilling mud will be buried within the reserve pit. Subsoil will then be replaced in the pit before placing the topsoil over pit. The operator will stabilize and reclaim areas not needed for production during and within 30 days of the start of construction. 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. Vegetation and Ecological SitesDirect and Indirect Effects

The PRB FEIS discusses most direct and indirect effects to ecological sites and vegetation (p. 4-153 to 4-164). The proposed action would impact the common plant communities that occur on the site and the transition between the communities.

Other impacts anticipated to occur include those in the direct and indirect effects listed above under soils section. Direct effects to ecological sites would occur from ground disturbance caused by construction of well pads, ancillary facilities, associated pipelines, 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 would result in loss of vegetation and prevent reclamation for the life of the project.

Sagebrush may not regenerate easily after human disturbance such as urban or agricultural development, or even after natural occurrences such as wildfire. It may take years, even generations, for sagebrush to fully grow back. Sagebrush still has not returned to some areas of the Columbia Basin burned by a large fire 40 years ago (Pacific Northwest National Laboratory Shrub Steppe Ecology Series May 2010).

4.3.2. Cumulative Effects

The PRB FEIS discusses the cumulative effects to ecological sites (pp. 4-153 to 4-172). Cumulative effects to ecological sites include the further alteration of disturbance regimes from the increased disturbance, increase in noxious weeds, and alterations in vegetation community's diversity and cover.

4.3.3. Mitigation Measures

Implementation of the mitigation measures in the COAs, the projects POD, and its associated plans including the Integrated Weed and Pest Management Plan, the WMP, and the MSUP (specifically Plans for Reclamation of the Surface) will reduce surface disturbance impacts to ecological sites and vegetation. See the administrative record for some of these documents.

BLM and/or the operator selected seed mixes which contain native grasses and forbs could restore disturbed areas to properly functioning vegetation communities with the exception of sage-brush since it's not in the current seed mixes. BLM offers the same protections to privately owned surfaces that are disturbed as a result of federal mineral development as those administered by the BLM and therefore BLM developed a site specific seed mix for the access/pipeline corridors for the proposed project. BLM

can only require their use on BLM surface. The surface owner selects the seed mix for private land that may be more beneficial for grazing. The operator will follow the proposed Reclamation Plan and adapt to changing conditions and technologies (Reclamation Plan submitted 5/19/2012). Successful reclamation is expected in the disturbed areas with adequate moisture, sound management, and time. The Operator should follow the reclamation requirements in the BLM State Wide Reclamation Policy found at: http://www.blm.gov/wy/st/en/programs/reclamation. See mitigation section in the soils section above for a full description of the policy as it applies equally to ecological sites.

4.3.4. Residual Effects

Residual effects were also identified in the PRB FEIS, p. 4-408 such as the loss of vegetative cover, despite expedient reclamation, for several years until reclamation is successfully established. The alteration of biodiversity of ecological sites could result from disturbance, alterations in vegetation in reclaimed areas, and the spread and establishment of weed species. BLM developed a site specific seed mix for the proposed disturbance area. BLM can only require their use on BLM surface. The seed mix selected on private land is selected by the surface owner and may be designed to be more beneficial to cattle grazing than to soil stabilization. The BLM considers these residual effects from Alternative B, to be within the parameters for acceptable surface disturbance and surface disturbance reclamation in PRB FEIS ROD and Onshore Order Number 1.

4.4. Water Resources

In the Whitetail Federal A-1 well project, the operator intends to re-enter a plugged and abandoned oil well drilled to the target Minnelusa formation. The well will be cased across any water bearing zones, including the Fox Hills formation at 3,572 feet, to ensure that any groundwater formations are isolated and protected. Additionally, Slawson proposes to develop the Whitetail Federal A-1 Injector well to dispose of water produced in association with this project. The injector well will also be drilled to the Minnelusa formation, at a depth of approximately 9,800 feet. It will also be cased to prevent impacts to water bearing zones. For more information, see the Master Drilling Plan as submitted by the operator.

The operator intends to acquire water used for drilling the wells from commercial sources. Produced water will be disposed of in the Whitetail Federal A-1 Injector well. The volume of water produced by this federal mineral development is unknowable at the time of permitting. Slawson will have to produce the well for a time to be able to estimate the volume and quantity of water production. To comply with Onshore Order Oil and Gas Order No. 7 Disposal of Produced Water, Slawson will submit a representative water analysis to the BLM within 90 days of first production.

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 fresh water aquifers above the drilling target zone. Compliance with the drilling and completion plans and Onshore Oil and Gas Orders Nos. 2 and 7 will ensure there is no adverse impact on ground water.

4.4.1. Mitigation Measures

The Whitetail Federal A-1's surface use and drilling plans show adequate protection of surface lands and ground water, including the Fox Hills Formation, located at 3,572 feet total vertical distance (TVD). 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. With this design feature and its implementation BLM sees no cumulative and residual effects.

Channel crossings by road and pipelines will be constructed perpendicular to flow. Culverts will be installed at appropriate locations for streams and channels crossed by roads as specified in the BLM

Manual 9112, Bridges and Major Culverts and Manual 9113, Roads. Streams will be crossed perpendicular to flow, where possible, and all stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by the BLM. Channel crossings by pipelines will be constructed so that the pipe is buried at least 4 feet below the channel bottom.

4.5. Wetland/Riparian

No wetlands or riparian areas were shown in the National Wetlands Inventory in the project area.

4.6. Invasive Species

4.6.1. Direct and Indirect Effects

Although no noxious weeds were found at the onsite, the operator has committed to the control of noxious weeds and species of concern using the following measures identified in their Integrated Pest Management Plan (IPMP):

1. Control Methods, including frequency: The operator will follow recommend treatments from the landowner, BLM, Johnson County Weed and Pest and other proven treatments.
2. Preventive practices: Operator will use certified weed-free products, encourage the cleaning of vehicles used in the construction and production of this well and reseed all areas of disturbance
3. Education: The operator will distribute and review weed education materials to employees and contractors.

   For more information on Weed and Pest management, see the POD.

Cheatgrass or downy brome (*Bromus tectorum*) and to a lesser extent, Japanese brome (*B. japonicus*) exist in the affected environment. These 2 species are found in such high densities and numerous locations throughout NE Wyoming that a control program is not presently feasible. The use of existing facilities along with the surface disturbance associated with construction of proposed access roads, pipelines, and related facilities would present opportunities for weed invasion and spread. The activities related to the performance of the proposed project would create a favorable environment for the establishment and spread of noxious weeds/invasive plants such as salt cedar, Canada thistle, and perennial pepperweed. However, mitigation as required by BLM applied COAs will reduce potential impacts from noxious weeds and invasive plants.

4.6.2. Cumulative Effects

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

4.6.3. Mitigation Measures

See 4.6.1 above.

4.6.4. Residual Effects

Control efforts by the operator are limited to the disturbance associated with the project. Cheatgrass and /or downy brome and to a lesser extent, Japanese brome exist in the affected environment. These species are 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 to exist in the project area.

4.7. Fish and Wildlife

4.7.1. Threatened, Endangered, Candidate, Special Status (Sensitive) Species (SSS)

Based on the last species list for the Buffalo Field Office in 2012, the Ute Ladies'-tresses Orchid is the only listed species requiring an effects determination (ESA Section 7 (2)).

4.7.2. Threatened and Endangered Species - Ute ladies'-Tresses Orchid (ULT)

Suitable habitat is not present in the project area and implementation of the proposed project will have

"***no effect***" on ULT. The PRB FEIS discussed the cumulative effects to ULT, pp. 4-253 to 4-254. BLM proposes no ULT mitigation with Alternative B. BLM anticipates no residual effects to ULT.

4.7.3. Candidate Species – Greater Sage-Grouse (GSG)

4.7.3.1. Direct and Indirect Effects

Implementation of the proposed project will impact GSG habitat and individuals. Impacts to GSG are generally a result of loss and fragmentation of sagebrush habitats associated with roads and infrastructure. Research indicates that GSG hens also avoid nesting in developed areas.

Impacts to GSG associated with energy development are discussed in detail in the 12-Month Findings for Petitions to List the Greater Sage-Grouse (Centrocercus urophasianus) as Threatened or Endangered (FWS 2010) and chapters 15-21 of Greater Sage-grouse Ecology and Conservation of a Landscape Species and its Habitats (Knick and Connelly 2011).

The Whitetail A-1 well project area contains some suitable habitat mixed in with coniferous forest. The presence of coniferous woodland reduces the suitability of the project area as GSG habitat. The amount of disturbance to habitat is minimal because the well and injection wells are co-located on existing disturbances. The access road is an existing road that will have a minimal amount of work to get it in service. Noise and human disturbance associated with the road, construction, drilling, and completion will be disruptive to GSG. Allowing disruptive activities (such as those associated with well completion) to occur during the breeding/nesting season (March 15 – June 30) is not in compliance with WY BLM policy or the State of Wyoming's Greater Sage-Grouse conservation strategy, EO 2011-5 Greater Sage-grouse Core Area Protection). In order to be in compliance with EO 2011-5, the seasonal timing restrictions will be applied.

It is the policy of BLM WY to manage GSG habitats consistent with the provisions set forth by the State of Wyoming, and as described in Instruction Memorandum (IM) No. WY-2012-019, *Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management (BLM) Administered Public Lands Including the Federal Mineral Estate*. IM 2012-019 states that for areas in core and connectivity habitats surface disturbing and/or disruptive activities are prohibited from March 15–June 30 to protect sage-grouse nesting and early brood rearing habitats.

4.7.3.2. Cumulative Effects

The PRB FEIS (BLM 2003) states that "the synergistic effect of several impacts would likely result in a downward trend for the sage-grouse population, and may contribute to the array of cumulative effects that may lead to its federal listing. Local populations may be extirpated in areas of concentrated development, but viability across the Project Area [PRB] or the entire range of the species is not likely to be compromised (pg. 4-270)." Based on the impacts described in the PRB FEIS and the findings of more recent research, the proposed action may contribute to a decline in male attendance at the 1 lek that occur within four miles of the Whitetail A-1 project wells, and, potentially, extirpation of the local grouse population.

There are currently 22 wells (WOGCC, November 18, 2013) in the cumulative impact assessment area, an area of 50 square miles, which is a density of less than 1 well per square mile. Currently, there are about 10 proposed wells (Automated Fluid Minerals Support System [AFMSS] and WOGCC) (including those from this project) within 4 miles of the 1 lek. With the addition of the proposed wells, the well density within 4 miles of the lek is still less than 1well per square mile, which is within the 1 well per square mile recommendation by the State Wildlife Agencies' Ad Hoc Committee for Sage-Grouse and Oil and Gas Development.

In its Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (2009), WGFD categorized levels of oil and gas development into thresholds that correspond to moderate, high, and extreme impacts to habitat effectiveness for various species of wildlife, based on well pad densities and acreages of disturbance. All 3 levels of impact result in a loss of habitat function by directly eliminating habitat; disrupting wildlife access to, or use of habitat; or causing avoidance and stress to wildlife. Extreme impacts mean those where the function of an important wildlife habitat is substantially impaired or lost.

Declines in lek attendance associated with oil and gas development may be a result of a suite of factors including avoidance (Holloran et al. 2005, Holloran et al. 2007, Aldridge and Boyce 2007, Walker et al. 2007, Doherty et al. 2008, WGFD 2009), loss and fragmentation of habitat (Connelly et al. 2000, Braun et al. 2002, Connelly et al. 2004, WGFD 2004, Rowland et al. 2005, WGFD 2005, Naugle et al. 2011), reductions in habitat quality (Braun et al. 2002, WGFD 2003, Connelly et al. 2004, Holloran et al. 2005) and changes in disease mechanisms (Naugle et al. 2004, WGFD 2004, Walker et al. 2007.).

The Buffalo Resource Management Plan (BLM 2001) and the PRB FEIS Record of Decision (BLM 2003) included a 2-mile timing limitation on surface-disturbing activities around GSG leks. The 2-mile measure originated with the Western Association of Fish and Wildlife Agencies (WAFWA) (BLM 2004). Wyoming BLM adopted the 2-mile recommendation in 1990 (BLM 1990). The 2-mile recommendation was based on early research which indicated between 59% and 87% of GSG nests were located within 2 miles of a lek (BLM 2004). These studies were conducted in vast contiguous stands of sagebrush, such as those that occur in Idaho's Snake River plain.

Additional research across more of the GSG's range has since indicated that nesting may occur much farther than 2 miles from the breeding lek (BLM 2004). Holloran and Anderson (2005), in their Upper Green River Basin study area, reported that only 45% of their GSG hens nested within 1.9 miles of the capture lek. Moynahan and Lindberg (2004) found that only 36% of their GSG hens nested within 1.9 miles of the capture lek. Habitat conditions, and, thus, GSG biology, in the PRB area are more similar to Moynahan's north-central Montana study area than the Upper Green River area. Moynahan's study area occurred in mixed-grass prairie and sagebrush steppe, dominated by Wyoming big sagebrush (Moynahan et al. 2007). Recent research in the PRB suggests that impacts to leks from energy development are discernible out to a minimum of 4 miles, and that some leks in this radius have been extirpated as a direct result of energy development (Walker et al. 2007, Walker 2008, Naugle et al. 2011). BLM determined, based on these studies, that a 2-mile timing limitation is insufficient to reverse the population decline.

The 2012 population viability analysis for the NE Wyoming GSG found there remains a viable population of GSG 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.

Studies document the additive impacts of energy development and WNv as a threat to GSG 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 area will continue to impact the local GSG 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." (Taylor et al. 2012).

Current well densities reduce the effectiveness of PRB core areas (Taylor et al. 2012). Continued energy development around the core areas will reduce PRB core areas remaining value. WNv outbreaks combined with energy development reduce sage-grouse populations and 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 GSG, with an increased chance of extirpation with additional WNv outbreaks (Taylor et al. 2012).

A timing limitation does nothing to mitigate loss and fragmentation of habitat and changes in disease mechanisms. Rather than limiting mitigation to only timing restrictions, more effective mitigation strategies may include, at a minimum, burying power lines (Connelly et al. 2000b); minimizing road and well pad construction, vehicle traffic, and industrial noise (Lyon and Anderson 2003, Holloran 2005); and managing produced water to prevent the spread of mosquitoes with the potential to vector WNv in GSG habitat (Walker et al 2007). Walker et al. (2007) recommend maintaining extensive stands of sagebrush habitat over large areas (at least 1 mile in size) around leks to ensure GSG persistence. The size of such a no-development buffer would depend on the amount of suitable habitat around the lek and the population impact deemed acceptable. Connelly et al. (2000) recommended locating all energy-related facilities at least 2 miles from active leks.

Several guidance documents are available that recommend practices that would reduce impacts of development on GSG. These include Northeast Wyoming Sage-Grouse Conservation Plan (Northeast Wyoming Sage-grouse Working Group 2006), Sage-Grouse Habitat Management Guidelines for Wyoming (Bohne et al. 2007), Recommendations for Development of Oil and Gas Resources within Important Wildlife Habitats (WGFD 2009), Bureau of Land Management National Sage-Grouse Habitat Conservation Strategy (USDI 2004), Greater Sage-Grouse Comprehensive Conservation Strategy (Stiver et al. 2006), and BLM National Greater Sage-Grouse Land Use Planning Strategy (USDI 2011).

4.7.3.3. Mitigation Effects

Based on the summary of research describing the impacts of energy development on GSG, efforts to reduce habitat loss and fragmentation are likely to be the most effective in ensuring long-term lek persistence. In order to reduce the likelihood that noise, construction, and human disturbance impact nesting GSG, BLM will implement a timing limitation on all surface-disturbing activities within GSG habitat during the construction phase. The intent of this timing restriction is to decrease the likelihood that GSG will avoid these areas and increase habitat quality by reducing noise and human activities during the breeding season. The BLM will also implement a limitation on noise levels at the edge of occupied leks in the project area.

4.7.3.4. Residual Effects

A timing limitation restricting surface disturbance does not mitigate habitat loss, fragmentation or changes in disease mechanisms. Noise and human disturbance resulting from hydraulic fracturing, maintenance and production activities are likely to impact GSG in the area for the life of the project. Although there will be some negative impact to GSG in the project area, the WGFD stated in their DDCT response that the project that Whitetail A-1 well project will not cause declines in GSG populations (Letter in Appendix B). The BLM made a commitment to support the management objectives set by the State of Wyoming, to maintain populations and habitats. In addition, the BFO identified the following objectives in the current RMP: maintain a biological diversity of animal species, support the WGFD population objectives, maintain or improve quality of wildlife habitat, and provide habitat for special status habitat species (BLM 2001).

The PRB FEIS predicted that the PRB oil and gas development would have significant impacts to the GSG population. The impact of the Whitetail A-1 well project development cumulatively contributes to the potential for local extirpation. Alternative B and the COAs applied are consistent with current BLM and Wyoming GSG conservation strategies and the anticipated effects are within the parameters of the PRB FEIS/ROD. Current research does not identify specific components of energy development that measurably decrease impacts to GSG or their habitats. Even in areas where a variety of mitigation

measures were applied, negative population impacts were still measurable when well density exceeded 1 well per square mile. Management of energy development based on current core area configurations and associated lease stipulations, conditions of approval, and best management practices (BMPs), may not be sufficient to protect the population viability of PRB GSG.

4.7.4. Special Status (Sensitive) Species (SSS)

BLM supports the policies set forth in SSS policy (BLM Manual 6840). BLM Manual 6840.22A states that "The BLM should obtain and use the best available information deemed necessary to evaluate the status of special status species in areas affected by land use plans or other proposed actions and to develop sound conservation practices. Implementation-level planning should consider all site-specific methods and procedures which are needed to bring the species and their habitats to the condition under which the provisions of the ESA are not necessary, current listings under special status species categories are no longer necessary, and future listings under special status species categories would not be necessary." The PRB FEIS discusses impacts to SSS on pp. 4-257 to 4-265. The effects to sensitive species resulting from implementation of the project are in Table 3.2 in Chapter 3.

4.7.5. Big Game

4.7.5.1. Direct and Indirect Effects

The PRB FEIS discusses impacts, including direct and indirect effects, cumulative effects, and residual effects to big game on pp. 4-181 to 4-215. Winter/yearlong range for mule deer and elk would be directly disturbed with the construction of the wells and road. Long term disturbance would be direct habitat loss. Short-term disturbances also result in direct habitat loss; however, they should provide some habitat value as these areas are reclaimed and native vegetation becomes established.

In addition to the direct habitat loss, big game would likely be displaced from the project area during drilling and construction. A study in central Wyoming reported that mineral drilling activities displaced mule deer by more than 0.5 miles (Hiatt and Baker 1981). The WGFD indicates a well density of 8 wells per section creates a high level of impact for big game and that avoidance zones around mineral facilities overlap creating contiguous avoidance areas (WGFD 2004). A multi-year study on the Pinedale Anticline suggests not only do mule deer avoid mineral activities, but after 3 years of drilling activity the deer have not become accustomed to the disturbance (Madson 2005, Sawyer et al. 2006).

Big game animals are expected to return to the project area following construction; however, populations will likely be lower than prior to project implementation as the human activities associated with operation and maintenance continue to displace big game. Mule deer are more sensitive to operation and maintenance activities than pronghorn, and, as the Pinedale Anticline study suggests, mule deer do not readily habituate. A study in North Dakota stated, "although the population (mule deer) had over 7 years to habituate to oil and gas activities, avoidance of roads and facilities was determined to be long term and chronic" (Lustig 2003). Mule deer have been shown to avoid all types of well pads but tended to select areas farther from well pads associated with higher levels of traffic (Sawyer et al. 2009). Deer have even been documented to avoid dirt roads that were used only by 4-wheel drive vehicles, trail bikes, and hikers (Jalkotzy et al. 1997).

Winter big game diets are sub-maintenance, meaning they lose weight and body condition as the winter progresses. Survival below the maintenance level requires behavior that emphasizes energy conservation. Canfield et al. (1999) pointed out that forced activity caused by human disturbance exacts an energetic disadvantage, while inactivity provides an energetic advantage for animals. Geist (1978) further defined effects of human disturbance in terms of increased metabolism, which could result in illness, decreased reproduction, and even death.

Energy development activities that occur within big game habitats during the spring will likely displace

adult females and juveniles due to the human presence in the area. This may cause reduced survival rate of individuals that must expend increased energies to avoid such activities.

4.7.5.2. Cumulative Effects

Refer to the PRB FEIS for big game cumulative impacts, p. 4-211.

4.7.5.3. Mitigation Measures

No mitigation measures are proposed with Alternative B.

4.7.5.4. Residual Effects

No residual effects are anticipated.

4.7.6. Small Game Birds and Mammals (Sage-Grouse: see Candidate Species)

4.7.6.1. Non-Game Raptors

4.7.6.2.1. Direct and Indirect Effects

The PRB FEIS discussed direct and indirect effects to raptors (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.

This project will not disturb any known raptor nests. BLM recommends the location of all infrastructures requiring human visitation be designed 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 routine activities preclude flushing the raptors.

4.7.6.2.2. Cumulative Effects

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

4.7.6.2.3. Mitigation Measures

Because no raptor nest locations have been identified in the project area, no mitigation is needed.

4.7.6.2.4. Residual Impacts

Noise and presence of people associated with the construction and operation of the Whitetail A-1 well project may discourage raptors from foraging or roosting in the area, and may preclude raptors from nesting in the area in the future.

4.7.6.3. Migratory Bird

4.7.6.3.1. Direct and Indirect Effects

The PRB FEIS discussed direct and indirect effects to migratory birds on pp. 4-231 to 4-235. The PRB FEIS states on p. 4-231, "Surface disturbance associated with construction, operation, and abandonment of facilities, including roads, has the potential to result in direct mortality of migratory birds. Most birds would be able to avoid construction equipment; however, nests in locations subject to disturbance would be lost, as would any eggs or nestlings." Direct mortality of a bird or destruction of an active nest due to construction activities could result in a "take" as defined (and prohibited) by the MBTA, a nondiscretionary statute, and in turn a violation of the law. See also, FLPMA, Sec. 302(b) and Raptors – Direct and Indirect Effects (4.6.2.1.1).

Habitat disturbance and disruptive activities (i.e. drilling, construction, completion, operations, and maintenance) resulting from implementation of the project is likely to affect migratory birds in the entire area. Native habitats will be lost directly with the construction of the well pads and the access road. Surface disturbing activities that occur in the nesting season may kill migratory birds. Prompt re-vegetation of short-term disturbance areas should reduce habitat loss impacts. Pad construction, drilling, and to a lesser degree production, will displace edge-sensitive migratory birds from otherwise suitable habitat adjacent to the well pad. Drilling and construction noise can be troublesome for songbirds by interfering with the males' ability to attract mates and defend territory, and the ability to recognize calls from conspecifics (BLM 2003). Habitat fragmentation will result in more than just a quantitative loss in the total area of habitat available; the remaining habitat area will also be qualitatively altered (Temple and Wilcox 1986). Ingelfinger and Anderson (2004) identified that the density of breeding Brewer's sparrows declined by 36% and breeding sage sparrows declined by 57% within 100 meters of dirt roads in a natural gas field. Effects occurred along roads with light traffic volume (less 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.

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

Migratory bird species in the PRB nest in the spring and summer and are vulnerable to the same effects as GSG and raptor species. Though no timing restrictions are typically applied specifically to protect migratory bird breeding or nesting, where GSG 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. Surface disturbing activities associated with portions of the Whitetail A-1 project will have GSG timing limitations applied, thereby providing protection to migratory birds until June 30.

Heater treaters, and similar facilities with vertical open-topped stacks or pipes, can attract birds. Facilities without exclusionary devices pose a mortality risk. Once birds crawl into the stack, escape is difficult and the bird may become trapped (U.S. v. Apollo Energies Inc., 611 F.3d 679 (10th Cir. 2010); see also Colorado Oil and Gas Commission, Migratory Bird Policy, accessed February 13, 2012). To minimize these effects, the operator will equip all open-top pits, tanks, and pipes containing hydrocarbons with nets, screens, or other avian exclusion devices to prevent injury or death to migratory birds (SUPO, p. ??).

4.7.6.3.2. Cumulative Effects

The cumulative effects associated with alternative B are within the analysis parameters and impacts described in the PRB FEIS. Refer to the PRB FEIS, p. 4-235, for details on expected cumulative impacts.

4.7.6.3.3. Mitigation Measures

GSG timing limitations on surface disturbing activities will also serve to mitigate impacts to nesting migratory birds. Specific conservation measures to protect migratory birds are not included in the current land use plan, as updated and amended. Although the PRB FEIS ROD addressed the potential impacts from oil and gas development to migratory birds, it did not specifically identify activities to help mitigate those impacts. The RMP is currently under revision, and a change in management for migratory birds is

being considered among the alternatives. Until the revision is complete, the BFO will provide project level site-specific analysis of conservation measures implemented for migratory bird protection, and compliance with the MBTA.

BLM provided some level of protection for migratory bird nesting through timing limitations applied to CBNG plans of development for GSG and raptor nesting. Many CBNG projects (consisting of multiple wells) covered large areas that either encompassed GSG nesting habitat or raptor nests. Timing limitations applied as COAs for those projects were likely to also protect migratory birds during the nesting season by effectively limiting the development in a project area during grouse and raptor breeding seasons. Operators were likely to wait to construct facilities until limitations had been lifted for the entire area, in order to cut down on labor costs and difficulties from completing only small portions of the project at a time. With conventional oil projects, where less wells are proposed and development is more complicated, operators will most likely start construction as soon as possible, which could be during the migratory bird nesting season if the proposed area is not within 2 miles of a GSG lek or no active raptor nests are located. The shift in proposed projects from multi-well CBNG projects to single conventional wells, and in turn reducing secondary protections to migratory birds, constitutes a "change in circumstances" (43 CFR 1610.5-6) that should be addressed at the project level until issues can be resolved in a land use plan.

Nesting in Brewer's sparrows (a BLM SSS) typically occurs mid-May to mid-July. Some young fledge in late July. Sage thrashers (BLM sensitive species) may lay a second clutch of eggs as late as mid-July. Lark sparrows in northern latitudes lay eggs from early May to mid-July (information on breeding habits available on the Birds of North America Online website: http://bna.birds.cornell.edu/bna). GSG timing limitations on surface disturbing activities will mitigate impacts to nesting migratory birds from March 15 to June 30. However, several species of birds, listed above, are likely to still have eggs or nestlings into July. BLM biologists have observed active Brewer's sparrow nests containing eggs during the last week of June. Only a percentage of known nests are active any given year, so the protections for migratory birds from June 30 to July 31 will depend on how many raptor and mountain plover nests are active. The least restrictive measures (in this case only applying GSG timing limitations) are inadequate to protect all nesting migratory birds that may inhabit the project area.

Timing limitations for GSG (2 well pads; March 15 to June 30), begins prior to timing limitations for sagebrush obligates, and thus may provide additional protection where migratory bird nesting periods and habitats overlap.
The BLM also recommends that measures are taken to ensure that migratory birds are excluded from all facilities that pose a mortality risk, including, but not limited to, heater treaters, flare stacks, secondary containment, and standing water or chemicals where escape may be difficult or hydrocarbons or toxic substances are present.

Nests initiated after the first week in July may be destroyed by construction after August 1st. Migratory birds nesting adjacent to the well pad or road may be disturbed by construction and production activities. A timing limitation does nothing to mitigate loss and fragmentation of habitat. Suitability of the project area for migratory birds will be negatively affected due to habitat loss and fragmentation and proximity of human activities associated with oil and gas development.

4.7.6.3.4. Residual Effects

No further impacts are identified.

4.7.6.4. Plains Sharp-tailed Grouse

Direct and indirect effects to sharp-tailed grouse are described in the PRB FEIS pp. 4-221 to 4-226 and expected are similar to those described in section 4.7.3.1 (Greater Sage-Grouse). BLM does not expect

any impacts to sharp-tailed grouse from the Whitetail A-1 well project. The PRB FEIS described the cumulative effects to sharp-tailed grouse, pp. 4-221 to 4-226. BLM proposes no sharp-tailed grouse mitigation with Alternative B and anticipates no residual effects on grouse from this proposal.

4.8. West Nile Virus

4.8.1. Direct and Indirect Effects

This project is likely to result in minor standing surface water which may increase mosquito breeding habitat.

4.8.2. Cumulative Effects

There are many sources of native standing water throughout the PRB that add mosquito habitat. Summer thunderstorms, that pool water for more than 4 days in hot weather, can result in large Culex mosquito hatches. Other sources of water include: natural flows, livestock watering facilities, coal mining operations, and human outdoor water use and features in and around communities.

4.8.3. Mitigation Measures

There is little evidence that treatment, either through the use of larvicides or malathion, on a site specific or basin-wide scale will have any effect on the overall spread of the disease; however, one study, conducted by Big Horn Environmental Consultants in 2008, showed that landscape level larvacide applications can decrease the number of hatching mosquitoes in an area.

4.8.4. Residual Effects

BLM anticipates no residual effects.

4.9. Cultural Resources

4.9.1. Direct and Indirect Effect

BLM policy states that a decision maker's first choice should be avoidance of historic properties (BLM Manual 8140.06(C)). If historic properties cannot be avoided, mitigation measures must be applied to resolve the adverse effect. Sites 48CA 828, 48CA1444 and 48CA1517 are outside the area of potential effect (APE) of the project. No historic properties will be impacted by the proposed project. Following the *State Protocol Between the Wyoming Bureau of Land Management State Director and The Wyoming State Historic Preservation Officer*, Section VI(A)(1), the BLM notified the Wyoming State Historic Preservation Officer (SHPO) on May 30, 2013 that no historic properties exist in the APE. If any cultural values (sites, features or artifacts) are observed during operation, they will be left intact and the Buffalo Field Manager notified. If human remains are noted, the procedures described in Appendix L of the PRB FEIS and ROD must be followed. Further discovery procedures are in Standard COA (General)(A)(1).

4.9.2. 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.

4.9.3. Mitigation Measures

If 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. Standard COA (General)(A)(1) further explains discovery procedures.

4.9.4. 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:

BLM consulted or coordinated with the following on this project:

Contact	Organization	Onsite Presence?
Bud Stewart	WGFD	Y
Agent (see administrative record)	Bishop Land & Cattle	Y
Agent (see administrative record)	Slawson	Y

List of Preparers (BFO unless otherwise noted)

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Associate Field Manager	Chris Durham	Legal Assistant	Connie Modzelewski
Hydrologist	Brent Sobotka	Field Manager	Duane Spencer
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Appendix A. Tables

Table 3.2. Species Status Species Presence in the Whitetail A-1 Well Project Area

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Amphibians				
Northern leopard frog (*Rana pipiens*)	Beaver ponds and cattail marshes from plains to montane zones.	NP	NI	Habitat is not present.
Columbia spotted frog (*R*anus pretiosa)	Ponds, sloughs, small streams, and cattails in foothills and montane zones. Confined to headwaters of the S Tongue R drainage and tributaries.	NP	NI	Habitat not present.
Fish				
Yellowstone cutthroat trout (*Oncoryhynchus clarki bouvieri*)	Cold-water rivers, creeks, beaver ponds, and large lakes in the Upper Tongue sub-watershed	NP	NI	Habitat not present.
Birds				
Baird's sparrow (*Ammodramus bairdii*)	Shortgrass prairie and basin-prairie shrubland habitats; plowed and stubble fields; grazed pastures; dry lakebeds; and other sparse, bare, dry ground.	NP	NI	Habitat not present.
Bald eagle (*Haliaeetus leucocephalus*)	Mature forest cover often within one mile of large water body with reliable prey source nearby.	K	MIIH	Bald eagles are not likely to use the mature trees in the project area for nesting or winter roosting. Surface disturbing and maintenance activities may impact foraging eagles and the species may avoid the area.
Brewer's sparrow (*Spizella breweri*)	Sagebrush shrubland	NS	MIIH	Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Ferruginous hawk (*Buteo regalis*)	Basin-prairie shrub, grasslands, rock outcrops	NS	NI	Habitat not present.
Loggerhead shrike (*Lanius ludovicianus*)	Basin-prairie shrub, mountain-foothill shrub	S	MIIH	Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Long-billed curlew (*Numenius americanus*)	Grasslands, plains, foothills, wet meadows	NP	NI	Habitat not present.
Mountain Plover	Short-grass prairie with slopes < 5%	NP	NI	Habitat not present.
Northern goshawk (*Accipiter gentilis*)	Conifer and deciduous forests	S	MIIH	Foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Peregrine falcon (*Falco peregrinus*)	Cliffs	NP	NI	Habitat not present.
Sage sparrow (*Amphispiza billneata*)	Basin-prairie shrub, mountain-foothill shrub	NS	MIIH	Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Sage thrasher (*Oreoscoptes montanus*)	Basin-prairie shrub, mountain-foothill shrub	NS	MIIH	Nesting and foraging habitat may be impacted by dust, noise, human activities, and direct loss. Species may avoid area.
Trumpeter swan (*Cygnus buccinator*)	Lakes, ponds, rivers	NP	NI	Habitat not present.
Western Burrowing owl (*Athene cunicularia*)	Grasslands, basin-prairie shrub	NP	MIIH	Habitat not present.
White-faced ibis (*Plegadis chihi*)	Marshes, wet meadows	NP	NI	Habitat not present.
Yellow-billed cuckoo (*Coccyzus americanus*)	Open woodlands, streamside willow and alder groves	NS	NI	Habitat not present.
Mammals				
Black-tailed prairie dog (*Cynomys ludovicianus*)	Prairie habitats with deep, firm soils and slopes less than 10 degrees.	NP	NI	Habitat not present.

Common Name (scientific name)	Habitat	Presence	Project Effects	Rationale
Fringed myotis (*Myotis thysanodes*)	Conifer forests, woodland chaparral, caves and mines	S	MIIH	Foraging habitat may be impacted by dust, noise, human activities during the construction and drilling phase. Species may avoid area.
Long-eared myotis (*Myotis evotis*)	Conifer and deciduous forest, caves and mines	S	MIIH	Foraging habitat may be impacted by dust, noise, human activities during the construction and drilling phase. Species may avoid area.
Swift fox (*Vulpes velox*)	Grasslands	NS	NI	A lack of suitable denning habitat reduces the likelihood that foxes will occur.
Townsend's big-eared bat (*Corynorhinus townsendii*)	Caves and mines.	NP	NI	Habitat not present.
Plants				
Limber Pine (*Pinus flexilis*)	Mountains, associated with high elevation conifer species	NP	NI	Habitat not present.
Porter's sagebrush (*Artemisia porteri*)	Sparsely vegetated badlands of ashy or tufaceous mudstone and clay slopes 5300-6500 ft.	NP	NI	Habitat not present.
William's wafer parsnip (*Cymopterus williamsii*)	Open ridgetops and upper slopes with exposed limestone outcrops or rockslides, 6000-8300 ft.	NP	NI	Habitat not present.

Presence

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

Project Effects

NI - No Impact.
MIIH - May Impact Individuals or Habitat, but will not likely contribute to a trend towards Federal listing or a loss of viability to the population or species.
WIPV - Will Impact Individuals or Habitat with a consequence that the action may contribute to a trend towards Federal listing or cause a loss of viability to the population or species.
BI -Beneficial Impact

Appendix B. Wyoming Game and Fish Department Density Disturbance Calculation Tool Analysis

WYOMING GAME AND FISH DEPARTMENT

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August 23, 2013

WER 12654
Bureau of Land Management
Buffalo Field Office
Governor's Sage Grouse Executive Order 2011-5
2013 Density Disturbance Calculation Tool Analysis
Whitetail Federal A 1 Water Injection Well,
Whitetail WSW #1 Water Well, and
Whitetail Federal A 1 Re-entry Oil Well
Slawson Exploration Company, Inc
Campbell County

Don Brewer
Bureau of Land Management
Buffalo Field Office
1425 Fort Street
Buffalo, WY 82834-2436

Dear Mr. Brewer:

The staff of the Wyoming Game and Fish Department (WGFD) has reviewed the Governor's Sage Grouse Executive Order 2011-5, Density Disturbance Calculation Tool (DDCT) Analysis for the Slawson Exploration Company, Inc's proposed Whitetail Federal A 1 Water Injection Well, Whitetail WSW #1 Water Well, and Whitetail Federal A 1 Re-entry Oil Well in Campbell County. We offer the following comments for your consideration.

DDCT Review

The well pads and access road in T46N R69W Sections 4, 5, 7, 8, 9 are located in the Thunder Basin sage-grouse core area as defined by the State of Wyoming Greater Sage-Grouse Core Area Protection Executive Order 2011-5. New disturbance associated with the proposed development totals ~2.63 acres. The Whitetail Federal A1 project is located on federal minerals and private surface.

The DDCT process was conducted per Executive Order 2011-5 guidelines. The DDCT process was completed by ICF International on behalf of the proponent using the DDCT web application and reviewed by the WGFD. In our review of the submitted DDCT, we found that the disturbance calculation exceeds Executive Order 2011-5 guidelines:

"Conserving Wildlife - Serving People"

- Disturbance = 15.49%
- Density = 0.41/640

The DDCT area contains two large, overlapping wildfire burns that contribute to the disturbance exceedance. The burn areas have not been evaluated for transitional or suitable sage-grouse habitat and so are counted as disturbance. The proposed oil well pad is co-located with a plugged and abandoned pad (proposed project is a re-entry). The proposed water injection pad is co-located within a wildfire burn area, as is a majority of the access road, which is currently an existing two-track. Through co-location, the proponent has reduced the disturbance footprint of the proposed project by ~9 acres.

At the request of WGFD, ICF International completed a habitat assessment within 0.6mi of the proposed project disturbance. The assessment identified that 30% of the analysis area could be suitable habitat (i.e., the model ruled out areas that were too steep, forested, or non-vegetated). However, an on-the-ground site visit indicates that the project area is located in unsuitable sage-grouse habitat. The topography is rough breaks, steep terrain, and the area is interspersed with conifers. There are no documented, occupied leks within 4mi of the project area. Despite the disturbance exceedance, the WGFD does not feel the development of the project as proposed (i.e., siting and design) will cause declines in sage-grouse populations.

Stipulations for Development

In addition to meeting Executive Order disturbance/density guidelines, we recommend all stipulations for development outlined in Attachment B of the Executive Order be applied by the proponent to the proposed project and, if possible, included in the conditions of the associated permit(s) by the permitting agency or agencies. These include general stipulations on surface disturbance, surface occupancy, seasonal use, transportation, overhead lines, noise, vegetation removal, sagebrush treatment, monitoring/adaptive response, and reclamation, and specific stipulations pertaining to oil and gas, mining, and connectivity area. The submitted *Sage-Grouse Executive Order 2011-5 Worksheet* indicates implementation of the proposed project will comply with Attachment B stipulations for development.

Water Well

With regard to the proposed water well, the State Engineer's Office provides three options to proponents of projects in sage-grouse core area. In brief, a proponent may 1) move the project outside of core area, 2) conduct the DDCT process to demonstrate that development of the project will not adversely impact local sage-grouse populations, or 3) co-locate the project within a previously disturbed area.

A DDCT has been conducted and the proponent has co-located the water well location within a burn area. If appropriate reclamation occurs on this site, there are no concerns with development of a water well and storage at this location. We recommend the proponent take steps to minimize the disturbance footprint associated with water storage by using above-ground, removable tanks.

The proponent should consider preventative measures for West Nile virus as outlined in the BLM IM No. WY-2012-019 *Greater Sage-Grouse Habitat Management Policy on Wyoming Bureau of Land Management (BLM) Administered Public Lands Including the Federal Mineral Estate*, Policy Statement #7.

Thank you for the opportunity to comment. If you have any questions or concerns, please contact Amanda Withroder, Staff Biologist, at (307) 473-3436.

Sincerely,

for Scott Gauer

Mark Konishi
Deputy Director

MK/mf/gb

Enclosures
1) Sage-Grouse Executive Order 2011-5 Worksheet
2) Final Results

cc: USFWS
Erika Peckham – WGFD, Sheridan Region
Lynn Jahnke – WGFD, Sheridan Region
Bud Stewart – WGFD, Buffalo
Jessica Maycock – ICF International
Don Smith – Slawson Exploration Company, Inc.
Nicholas Graf - WyGISC
James Neely – Wyoming SEO
Gary Strong – Wyoming Oil and Gas Conservation Commission
Mark Watson – Wyoming Oil and Gas Conservation Commission

WER: 12654
DUE: 9-10-13
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HABITAT PROGRAM PROTECTION WGFD

Version 3.0 January 2013

Submit by E-Mail | Print Form

Sage-Grouse Executive Order 2011-5 Worksheet

This worksheet is a tool for reviewers and preparers of the Greater Sage-Grouse (*Centrocercus urophasianus*) Core Area Protection Executive Order 2011-5 (SGEO) Density/Disturbance Calculation Tool (DDCT) (Attachment B-Permitting Process & Stipulations for Development) to help determine project compliance with the SGEO based on DDCT inputs and outputs, and other pertinent project information.

Please describe the following aspects of the project proponent:

Who is the project proponent? Slawson Exploration Company, Inc.

Contact Name: Don Smith Phone: (720) 457-2815 E-mail dsmith@slawsoncompanies.com

Address to send Executive Order 2011-2 Compliance Letter

Street Address: Jessica Maycock, ICF International
405 W. Boxelder Road, Ste A-5

City: Gillette State: Wyoming Zip Code: 82718

Agencies for whom a permit is required (Please check all that apply)

- ☐ Wyoming Department of Environmental Quality - Air Quality Division
- ☐ Wyoming Department of Environmental Quality - Land Quality Division
- ☐ Wyoming Department of Environmental Quality - Solid and Hazardous Waste Division
- ☐ Wyoming Department of Environmental Quality - Water Quality Division
- ☐ Wyoming Office of State Lands and Investments
- ☐ Wyoming Oil and Gas Conservation Commission
- ☐ Wyoming State Engineer's Office
- ☐ Other State Agency
- ☒ United States Bureau of Land Management
  Name: Don Brewer Phone: (307) 686-1119 E-mail dcbrewer@blm.gov
- ☐ United States Bureau of Reclamation
- ☐ United States Forest Service
- ☐ Other Federal Agency

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Sage-Grouse Executive Order 2011-5 Worksheet

Please describe the following aspects of the proposed project (or provide a project narrative with this worksheet):

What is the proposed project? Please describe all aspects of the project, including proposed surface disturbance acreage, and actions related to the implementation of the project that may result in disturbance or disruption within sage-grouse core area.

The proposed project includes drilling one new water injection well with a 2.4 acre well pad, and re-entering an old plugged and abandoned vertical oil well (Whitetail Fed A1) with a 1.7 acre well pad. A total of approximately 3.1 miles of access road (existing two-track road) will be improved to access the Whitetail Fed A1 oil well and water injection well.

Where will the proposed project occur? Please provide information such as county or locality, township/range/section(s), surface and/or mineral ownership, etc.

Approximately 20 miles south of Rozet, Campbell County, Wyoming. Water injection well is located in NW SE Section 4, T46N:R69W, the Whitetail Fed A1 re-entry oil well is located in SW NE Section 4, T46N:R69W.
Private surface/federal minerals.

Does the proposed project description include all current and foreseeable future development activities associated with the proposed project? ☒ Yes ☐ No

Please provide all disturbance activities associated with the development of your project, including additional water wells, anticipated expansion, transmission, distribution and electrical lines, pipelines, roads, etc.

Does the proposed project involve an application for permit to drill (APD)? ☒ Yes ☐ No

What is the API Number? -0 | What is the name of the well? Whitetail Federal A1 | What is the bottom formation? Minnelusa

Bottom Hole Location: Township 46 N | Range 69 W | Section 4 | Quarter Section SW | Quarter Quarter Section NE

When will the development of the proposed project begin? asap | What is the expected life of the project? Indefinite

When will the development of the proposed project end? 12/31/13

Who has been your main point of contact with WGFD Habitat Protection Program? Bud Stewart

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Sage-Grouse Executive Order 2011-5 Worksheet
Part 1 - Project Location and Large Disturbance Features

Question	Reference	Answer	Comments
1. Is the project located is a northeast WY core or connectivity area (i.e., Buffalo, North Gillette, Thunder Basin, Newcastle, Douglas, North Glenrock, or Natrona north of Hwy 20/26 and north of Casper Mtn.)?	SGEO Pages 11, 14-15	☒ Yes ☐ No	
1a. If **yes**, has the pre-1994 habitat conversion/treatment disturbance been accurately accounted for and removed from the disturbance (i.e., set to exempt)?		☒ Yes ☐ No	
2. Were there any large sagebrush disturbing wildfires or treatments within the DDCT area?	SGEO Page 14	☒ Yes ☐ No	
2a. If **yes** and included as disturbance, has a management plan been implemented to restore the area to functional sage-grouse habitat?	must provide documentation and/or land management agency contact	☐ Yes ☒ No	
2b. Is the wildfire/treatment area (pre-2011) being considered transitional sage-grouse habitat (i.e., the proponent and local agency personnel have agreed to count the burn or treatment area as non-disturbed habitat based on an implemented management plan and trend data)?		☐ Yes ☒ No	
3. Is the project (proposed disturbance and the permit area) within a Federal oil and gas unit established prior to August 1, 2008?	SGEO Pages 2 & 12	☐ Yes ☒ No	
4. Is the DDCT area overlapped by a pre-August 1, 2008 unit, but the project lies outside the unit?		☐ Yes ☒ No	

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Sage-Grouse Executive Order 2011-5 Worksheet
Part 2 - Disturbance Guidelines and Stipulations for Development

Question	Reference	Answer	Comments
1. Is the DDCT disturbance calculation output within the 5% surface disturbance threshold?	SGEO Pages 8-9	☐ Yes ☒ No	
1a. If **no**, would the disturbance calculation exceed 5% without the addition of the proposed project?		☒ Yes ☐ No	
2. Is all surface occupancy >0.6mi from the perimeter of occupied leks?	SGEO Page 9	☒ Yes ☐ No	
3. Are seasonal stipulations for development activities (March 15 - June 30) being applied to the project?	SGEO Page 9	☒ Yes ☐ No	
3a. Have sage-grouse winter concentration areas been identified in the project area and are seasonal stipulations (Dec. 1 - March 14) being applied to the project?	proponent may check with BLM or WGFD	☐ Yes ☒ No	
4. Are main roads associated with the project located >1.9 miles and access/maintenance roads located >0.6mi from the perimeter of occupied leks?	SGEO Page 9	☒ Yes ☐ No	
5. Will there be new transmission or distribution lines constructed as a result of the project?	SGEO Pages 4 & 9	☐ Yes ☒ No	
6. March 1 - May 15: Will noise (activity) associated with the project occur between 6PM and 8AM during any phase of project implementation (i.e., development through production), including traffic to and from the project location?	SGEO Page 9	☐ Yes ☒ No	
7. Is vegetation removal associated with the project planned between March 15 and June 30 within 4mi of an occupied lek?	SGEO Pages 9-10	☐ Yes ☒ No	

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Sage-Grouse Executive Order 2011-5 Worksheet
Part 2 - Disturbance Guidelines and Stipulations for Development

Question	Reference	Answer	Comments
8. Does the project include vegetation treatment?	SGEO Pages 10 & 14	☐ Yes ☒ No	
9. Has the proponent agreed to monitor affected and surrounding (control) leks?	SGEO Page 10	☒ Yes ☐ No	They were monitored in 2013.
9a. If **yes**, will they coordinate with the permitting agency and local WGFD biologist to determine monitoring/data needs?		☒ Yes ☐ No	
9b. Does the proponent indicate a willingness to use adaptive management if there are declines on monitored leks determined to be caused by the project?		☐ Yes ☒ No	
10. Does the reclamation plan comply with Executive Order 2011-5?	SGEO Page 10	☒ Yes ☐ No	

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Sage-Grouse Executive Order 2011-5 Worksheet
Part 3 - Density Guidelines and Specific Stipulations

Question	Reference	Answer	Comments
1. If the project includes oil and gas development and/or mining activity, is the 1 /640 density calculation within Executive Order 2011-5 guidelines?	SGEO Page 12	☒ Yes ☐ No	
2. Is the project located in a sage-grouse connectivity corridor?	SGEO Pages 12-13	☐ Yes ☒ No	

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Sage-Grouse Executive Order 2011-5 Worksheet
Part 4 - Deviations and Mitigation

Question	Reference	Answer	Comments
1. Are there any deviations from Executive Order 2011-5 process or stipulations?	SGEO Pages 4, 12-13	☒ Yes ☐ No	
1a. If **yes**, does the proposed project meet at least one of the following conditions: No suitable habitat is present in one contiguous block of land that includes at least a 0.6mi buffer between the project area and suitable habitat. No sage-grouse use occurs in one contiguous block of land that includes at least a 0.6mi buffer between the project area and adjacent occupied habitat, as documented by total absence of sage-grouse droppings and an absence of sage-grouse activity for the previous ten years. Provision of a development/mitigation plan that has been implemented and demonstrated by previous research not to cause declines in sage-grouse populations. The demonstration must be based on monitoring data collected and analyzed with accepted scientific based techniques.		☒ Yes ☒ Yes ☐ Yes ☐ Yes ☐ No	Our analysis showed that 30% of the 0.6mi buffer was "suitable habitat" based on the criteria we set for vegetation type and topography (see attachment). However, the majority of these pockets of "suitable habitat" are bordered by forested habitats and steep terrain, which renders them unlikely to be used by sage-grouse.
2. Are there additional mitigation efforts being proposed by the proponent or recommended by the biologist that could be implemented to offset anticipated impacts to sage-grouse?		☐ Yes ☒ No	

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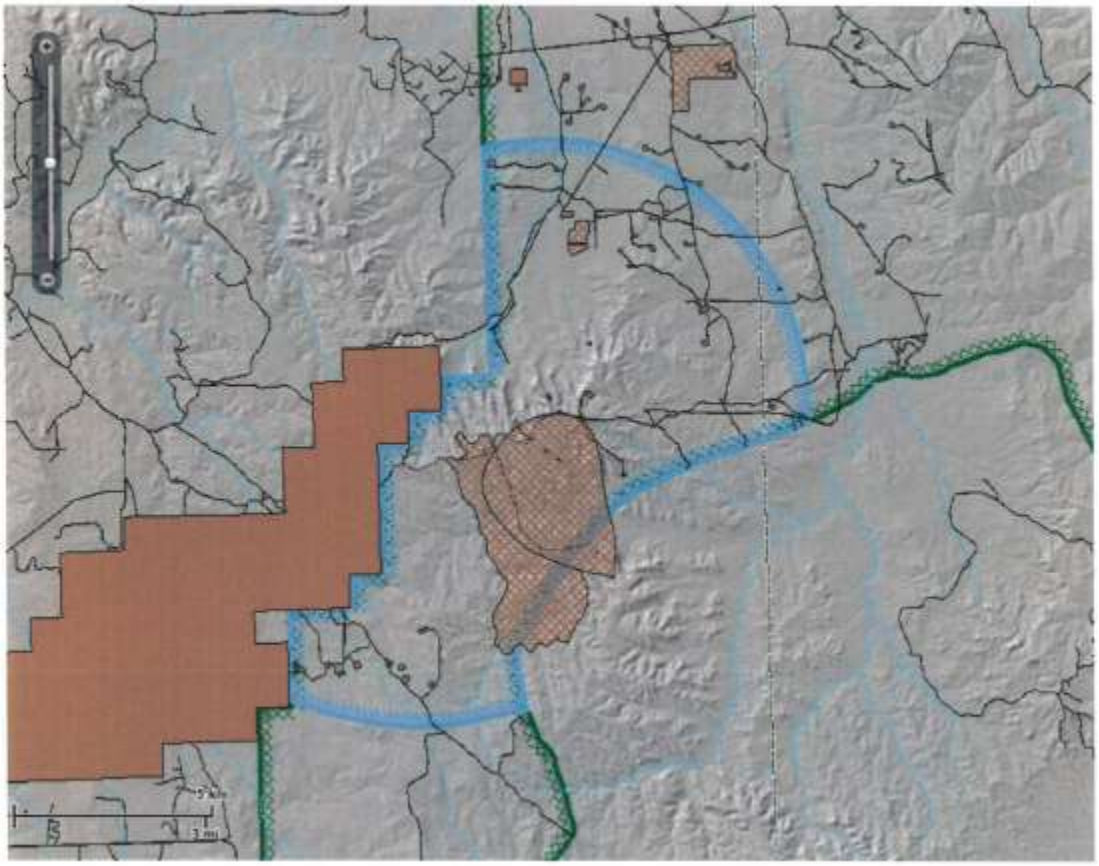
20120928_1 **Whitetail Federal A1**

08/12/2013 **JessicaMaycock**

Core Area: **Thunder Basin**

Category	Acres	Percent
Overall DDCT Boundary	23,532.03	100
Total Disturbed	3,644.99	15.49
Total Undisturbed	19,887.04	84.51
Disturbed - Project Only	2.63	0.01
Disturbed - Prior to Project	3,642.36	15.48
Disruptions	0.41 Dis/640 Ac	

Owner	Total Acres	Pre-Acres	Pre-Percent	Post-Acres	Post-Percent
Bureau of Land Management	6,223.62	1,029.76	16.55	1,031.68	16.58
Private	15,477.64	1,946.52	12.58	1,947.23	12.58
State	1,830.77	666.08	36.38	666.08	36.38

LekID	Total Acres	Pre-Acres	Pre-Percent	Post-Acres	Post-Percent