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***Moneta Divide Natural Gas and Oil Development Project  
Final Environmental Impact Statement***

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***Appendix F***

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Resource Protection Measures

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January 2020



## **TABLE OF CONTENTS**

1.0	Resource Protection Measures.....	F-1
2.0	Field Office Checklists .....	F-48
2.1	Lander Field Office .....	F-48
2.2	Casper Field Office .....	F-64
3.0	References .....	F-71

## **LIST OF TABLES**

Table F-1.	Resource Protection Measures.....	F-3
Table F-2.	Lander Field Office Best Management Practices and Required Design Feature Checklist.....	F-48
Table F-3.	Lander Field Office Resource Management Plan Mandated Resource Protections .....	F-57
Table F-4.	Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations .....	F-64
Table F-5.	Casper Field Office General Habitat Management Area Required Design Feature Checklist .....	F-69

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## APPENDIX F

### RESOURCE PROTECTION MEASURES

Changes to this appendix are shown in gray shading. Changes are the result of updates or changes from responding to public comments.

#### 1.0 RESOURCE PROTECTION MEASURES

Throughout the development of the Moneta Divide Natural Gas and Oil Development Project Environmental Impact Statement (EIS), the Bureau of Land Management (BLM), cooperating agencies, and the project proponents, Aethon Energy Operating LLC (Aethon) and Burlington Resources Oil & Gas Company LP (Burlington) (referred to collectively as the Companies), identified or developed resource protection measures that could reduce or eliminate potential adverse impacts from the Moneta Divide Project. Resource protection measures listed in this appendix include Applicant-Committed Measures (ACMs) identified in the Plan of Development (POD), as well as the BLM Resource Management Plan (RMP) stipulations. Some of the ACMs refer to BLM best management practices (BMPs). Appendix G, *Laws, Ordinances, Regulations, and Standards*, lists the laws and regulations which also provide statutory protections for resources. In some instances, there may be an overlap between an ACM proposed by the Companies and BLM RMP stipulations. Under those circumstances, the BLM RMP stipulations would govern. If impacts were identified in the EIS that could not be minimized or avoided through application of these resource protection measures, mitigation measures were recommended in the applicable resource section of the EIS.

Section 2, *Field Office Checklists*, of this appendix includes Required Design Features (RDFs) and other BMPs identified by the Lander Field Office (LFO), Casper Field Office (CFO), and Rawlins Field Office (RFO) RMPs that should be included in BLM authorizations, as applicable by field office.

Table F-1 below describes the resource protection measures, the source of the measure, and the resource associated with the measure. Unless otherwise specified, the resource protection measures identified in this appendix apply to all alternatives where activities fall within the jurisdiction of the BLM. Certain resource protection measures apply project-wide, while others, including RMP stipulations, may apply only to a specific BLM field office. Measures will be implemented where applicable and subject to valid existing rights. After a final alternative is selected in the Moneta Divide Project Record of Decision (ROD), some resource protection measures would be included as conditions of approval (COAs) during permitting for site-specific development of the Moneta Divide Project, as applicable, while some measures would be treated as guidelines for voluntary compliance by the Companies. COAs would apply to the Companies and their contractors and would be binding in the event that the facilities or infrastructure are transferred or operated by another entity. The BLM may augment this list of protection measures and include additional COAs during site-specific National Environmental Policy Act (NEPA) review.

Sources of these resource protection measures include:

- **The 2014 Lander Approved RMP, as amended, the 2007 Casper Approved RMP, as amended, and the 2008 Rawlins Approved RMP, as amended:** RMPs provide programmatic level management guidance for resource and resource uses on BLM-administered land, including environmental constraints applied to fluid mineral activities and restrictions on surface-disturbing activity. In addition to environmental constraints, Appendix E of the LFO RMP ROD

(BLM 2014), Appendix X of the CFO RMP ROD (BLM 2007a), and Appendix 15 of the Rawlins RMP ROD (BLM 2008) include a range of BMPs that could be applied to limit potential adverse impacts from oil and gas development and surface-disturbing activity.

- **Plan of Development – Moneta Divide Gas and Oil Development Project:** The POD (Encana and Burlington 2012) submitted to the BLM in June 2012 contains the initial proposal from the Companies (Aethon’s predecessor Encana Oil & Gas (USA), Inc., and Burlington prepared the POD) for the Moneta Divide Project development. The POD contains a table of ACMs that the Companies have indicated they would comply with beyond regulatory requirements to minimize or eliminate impact on resources. In addition to ACMs, the POD also describes development processes that would be used to minimize resource impacts, such as designing facilities to minimize visual impact.
- **Standards and Guidelines identified in the Gold Book and other sources:** The Gold Book (BLM 2007b) provides operators and the BLM guidance for ensuring compliance with agency policies and operating requirements including design standards, BMPs, stipulations, and other resource protection measures.
- **Other resource protection measures identified by cooperating agencies, BLM Interdisciplinary Team, and other entities as part of the EIS process:** Throughout the Moneta Divide EIS process, the BLM received a variety of recommendations for resource protection measures during scoping, the alternatives development process, resource-specific coordination with cooperating agencies, and other input. The BLM tracked these recommendations as they were received and identified appropriate measures to carry forward.

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
<b><i>Applicant Committed Measure</i></b>				
1001	Air Quality	During dry periods, all appropriate measures shall be taken to control fugitive dust. These measures may include, but are not limited to, the application of water or chemical dust suppressants.	43 Code of Federal Regulations (CFR) 3101.1-2 (as cited in Casper Field Office [CFO] and Lander Field Office [LFO] Best Management Practices [BMP] lists)/Clean Air Act, as amended, and the Federal Land Policy and Management Act	Plan of Development (POD)
1002	Air Quality	In accordance with Wyoming Air Quality Standards and Regulations Chapter 3, Section 2(f), the emission of fugitive dust will be limited by all persons handling, transporting, or storing any material to prevent unnecessary amounts of particulate matter from becoming airborne to the extent that ambient air standards described in these regulations are exceeded.	Wyoming Air Quality Standards and Regulations Chapter 3, Section 2(f)	POD
1003	Air Quality	Necessary air quality permits to construct, test, and operate facilities will be obtained from the Wyoming Department of Environmental Quality (DEQ)-Air Quality Division. All internal combustion equipment will be kept in good working order.		POD
1004	Air Quality	Completion operations will use flare-less flow back technologies to reduce Nitrogen Oxide (NOx) and Volatile Organic Compound (VOC) emissions for all traditional wells; flare-less flowback may not be practical or possible for wells drilled to the deeper, Madison Formation.		POD
1005	Air Quality	The Proponents will continue to meet or exceed Bureau of Land Management (BLM) minimum standards of performance when conducting drilling and operations involving oil or gas that are known or could reasonably be expected to contain hydrogen sulfide (H <sub>2</sub> S), or that result in the emission of sulfur dioxide as a result of flaring H <sub>2</sub> S. <sup>1</sup>		POD
1006	Air Quality	Operators will comply with all applicable local, state, tribal, and federal air quality laws, statutes, regulations, standards, and implementation plans, including Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS).	Clean Air Act, as amended, and the Federal Land Policy and Management Act and Wyoming Air Quality Standards	POD

<sup>1</sup> Refer to Onshore Oil and Gas Order No 6 (Hydrogen Sulfide Operations)

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1007	Cultural	The Operator shall avoid known cultural properties where possible for all surface-disturbing activities conducted in connection with a federal action.	Resource Management Plan (RMP) Appendix 2, 43 CFR 3101.1-2 (as cited in CFO and LFO BMP lists)/BLM Regulations (36 CFR 800) implementing Section 106; National Historic Preservation Act (NHPA) (16 United States Code [U.S.C.] 470, et seq.)	POD
1008	Cultural	When a proposed discretionary land use has potential for affecting the characteristics which qualify a cultural property for the National Register of Historic Places (NRHP), mitigation will be considered. In accordance with Section 106 of the NHPA, procedures specified in 36 CFR 800 will be used in consultation with the Wyoming State Historic Preservation Office (SHPO) and the Advisory Council on Historic Preservation in arriving at determinations regarding the need and type of mitigation to be required.	RMP Appendix 2, 43 CFR 3101.1-2 (as cited in CFO and LFO BMP lists)/BLM Regulations (36 CFR 800) implementing Section 106; NHPA (16 U.S.C. 470, et seq.)	POD
1009	Cultural	The BLM and the Operator shall pursue the renewal of the prehistoric cultural resources protection Memorandum of Agreement (MOA). <sup>2</sup> In the interim the Operator will continue to implement measures to identify, evaluate, and protect prehistoric cultural resources according to existing MOAs.	43 CFR 3101.1-2 (as cited in CFO and LFO Best Management Practices [BMP] lists)	POD
1010	Cultural	Any cultural and/or paleontological resource (historical or prehistoric site or object or fossil) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the BLM Authorized Officer (AO). Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the AO. An evaluation of the discovery will be made by the AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures shall be made by the AO after consulting with the holder. An evaluation of the discovery will be made by the AO to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures shall be made by the AO after consulting with the holder.	43 CFR 3101.1-2 (as cited in CFO and LFO FO BMP lists)/BLM Regulations (36 CFR 800) implementing Section 106; NHPA (16 U.S.C. 470, et seq.)	POD

<sup>2</sup> BLM is not aware of a prehistoric cultural MOA currently in effect with Aethon, Burlington, or its predecessors related to development in the Moneta Divide Project Area. As described in Section 4.10, Cultural Resources, of Chapter 4 of the EIS, a Programmatic Agreement is being prepared to guide site avoidance, minimization, and mitigation measures of historic properties during project development.



**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1011	Cultural	Operators will follow the NHPA Section 106 compliance process prior to any surface-disturbing activity and will either avoid or protect cultural resources properties.	BLM Regulations (36 CFR 800) implementing Section 106; NHPA (16 U.S.C. 470, et seq.)	POD
1012	Cultural	In culturally sensitive soils, if cultural resources are located within frozen soils or sediments precluding the ability to adequately record or evaluate the find, construction work will cease and the site will be protected for the duration of frozen soil conditions. Following natural thaw, recordation, evaluation, and recommendations concerning further management will be made to the BLM AO, who will consult with affected parties. Construction work will be suspended until management of the threatened site has been finalized.	BLM Regulations (36 CFR 800) implementing Section 106; NHPA (16 U.S.C. 470, et seq.)	POD
1013	Cultural	Should future work identify any traditional Native American religious or sacred sites, consultation among the BLM, the affected Native American group, the Wyoming SHPO and the project proponent will occur to resolve conflicts. This consultation will occur on a case-by-case basis.		POD
1014	Cultural	Operators should inform their employees, contractors, and subcontractors about relevant federal regulations intended to protect archaeological and cultural resources. All personnel should be informed that collecting artifacts (including arrowheads) is a violation of federal law.		POD
1015	Cultural	Equipment operators should be informed that a cultural resource could be found anywhere; and if they uncover a site during construction, surface-disturbing activities at the site must be immediately halted and the BLM notified.		POD
1016	Cultural	Historical trails will be protected in accordance with the applicable MOA between each respective oil and gas operator and appropriate State of Wyoming and federal agencies.		POD
1017	Cultural	In the Proponents' proposal, each operator will fully evaluate existing data to consider the mitigating effects of reduced surface disturbance and the possibility of directional drilling, especially in the area around the Bridger Trail to maintain compliance with the applicable MOA.		POD
1018	Hazardous Materials, Materials, Waste Disposal	A Material Safety Data Sheet for every chemical or hazardous material brought on-site will be kept on file at the Operator's field office.	29 CFR 1910.1200	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1019	Hazardous Materials, Materials, Waste Disposal	Chemical and hazardous materials will be inventoried and reported in accordance with the SARA Title III (40 CFR 335). If quantities exceeding 10,000 lbs or the threshold planning quantity are to be produced or stored, the appropriate Section 311 and 312 forms will be submitted at the required times to the State and County Emergency Management Coordinators and the local fire departments.	Regulations (40 CFR 335) implementing Title III, Superfund and Reauthorization Act (SARA) of 1986 (42 U.S.C. 103)	POD
1020	Hazardous Materials, Materials, Waste Disposal	Any hazardous wastes, as defined by the Environmental Protection Agency (EPA) Resource Conservation and Recovery Act of 1976, as amended, will be transported and/or disposed of in accordance with all applicable federal, state, and local regulations.	EPA Resource Conservation and Recovery Act (42 U.S.C. 6901, et seq.) Department of Transportation (DOT) (49 CFR 177)	POD
1021	Hazardous Materials, Materials, Waste Disposal	Owners or operators of onshore facilities (any facility of any kind, or drilling or workover rigs) that, due to their location, could reasonably be expected to discharge oil in harmful quantities (as defined in 40 CFR 110 and 40 CFR 112.3), into or upon navigable waters of the United States (U.S.) or adjoining shorelines, will prepare a Spill Prevention Containment and Countermeasures (SPCC) Plan in accordance with 40 CFR 112.7. Owners or operators of drilling or workover rigs need not prepare a new SPCC Plan each time the facility is moved to a new site. The SPCC Plan may be a general plan, using good engineering practice (40 CFR 112.3[a], [b], and [c]). Owners or operators of a facility for which an SPCC Plan is required will maintain a complete copy of the Plan at such facility if the facility is normally attended at least eight hours per day, or at the nearest field office if the facility is not so attended (40 CFR 112.3[e]).	EPA Spill Prevention, Control, and Countermeasure (SPCC) Regulations (40 CFR 112)	POD
1022	Hazardous Materials, Materials, Waste Disposal	Operators will utilize Wyoming DEQ-approved portable sanitation facilities at drill sites; place warning signs near hazardous areas and along roadways; place dumpsters at each construction site to collect and store garbage and refuse; ensure that all refuse and garbage is transported to a State-approved sanitary landfill for disposal; and institute a Hazard Communication Program for its employees and require subcontractor programs in accordance with Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.1200).	OSHA regulations (29 CFR 1910.1200)	POD
1023	Hazardous Materials, Materials, Waste Disposal	SPCC Plans will be implemented and adhered to in a manner such that spills or accidental releases of oil will be remediated. An orientation will be conducted by the Operators to make project personnel aware of the potential impacts that can result from accidental spills, and that they know the appropriate response when a spill occurs. Where applicable and/or required by law, streams at pipeline crossings will be protected from	EPA SPCC Regulations (40 CFR 112)	POD

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		contamination by pipeline shutoff valves or other systems capable of minimizing accidental release. If reserve pit leakage is detected, operations at the site will be curtailed, as directed by the BLM, until the leakage is corrected.		
1024	Livestock Grazing	All pits and open cellars will be fenced to limit access by livestock. Fencing will meet BLM specifications.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in CFO and LFO BMP lists)	POD
1025	Livestock Grazing	To facilitate re-vegetation, the operator shall install a temporary fence around the outer disturbed perimeter of the well site. The fence shall conform to BLM standards and shall be maintained until successful re-vegetation as determined by the AO has occurred.	43 CFR 3101.1-2, 2 (as cited in CFO and LFO BMP lists)	POD
1026	Livestock Grazing	All range improvements (stock water tanks, pipelines, corrals, etc.) will be avoided by 500 feet unless no other alternative is available and impacts can be mitigated per the BLM AO and/or consent of the grazing lessee or surface owner as appropriate.		POD
1027	Paleontological	<p><b>Reconnaissance:</b> The paleontologist will be on site at least one working day prior to initiating construction to conduct pre-construction reconnaissance activities. The paleontologist will notify the authorized officer (AO) prior to beginning reconnaissance activities. If potentially significant paleontological resources are identified during the reconnaissance, the paleontologist shall consult with the AO to determine if construction should be suspended. The AO will evaluate, or will have evaluated, such discoveries not later than five working days after being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant paleontological resources will be made by the AO after consulting with the operator. The operator shall be responsible for the cost of any investigations necessary for the evaluation, and for any mitigative measures.</p> <p><b>Monitoring:</b> Following results of the reconnaissance inventory, the paleontologist will monitor ground-disturbing activities in those areas identified as having the potential to contain buried paleontological resources. Construction methods shall be utilized which will allow the identification of paleontological resources without endangering the personnel monitoring the construction activities. If potentially significant paleontological resources are identified, and the paleontologist determines that further operations will affect the resource, the holder shall suspend all activities in the vicinity of such a discovery until notified to proceed by the AO. The AO will evaluate, or will have evaluated, such discoveries not later than five working days after</p>	43 CFR 3101.1-2 (as cited in CFO and LFO BMP list)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		being notified, and will determine what action shall be taken with respect to such discoveries. The decision as to the appropriate measures to mitigate adverse effects to significant paleontological resources will be made by the AO after consulting with the holder. The holder shall be responsible for the cost of any investigations necessary for the evaluation, and for any mitigative measures.  A report of all paleontological activities will be submitted to the AO within 30 days of completion of the fieldwork.		
1028	Paleontological	If effects to paleontological values, objects of historical or scientific interest, are observed, the Operator will be required to immediately contact the BLM, and the Operator will be required to cease any operations that will result in adverse impact to or the destruction of these values.		POD
1029	Paleontological	In areas where paleontological resources are likely to be found and disturbed by oil and gas operations, a determination will be made by the BLM as to whether a survey by a qualified paleontologist is necessary prior to the disturbance. In some cases, construction monitoring, project relocation, data recovery, or other mitigation will be required to protect significant paleontological resources during construction.		POD
1030	Recreation	Operators will notify employees and contractors regarding restrictions for off-road vehicle activity by employees and contract workers to the immediate area of authorized activity or existing roads and trails.		POD
1031	Soils and Geology	Minimize the disturbance to highly erosive soils. Proposed surface-disturbing activities will be modified (located) to avoid areas of highly erosive soils to the greatest extent practicable.	Decision Record 1020 RMP (as cited in CFO BMP list)	POD
1032	Soils and Geology	Complete reclamation activities (final contouring, replacing topsoil, reseeding, and surface treatment) on all disturbed areas within three growing seasons.	Decision Record 1024 RMP (as cited in CFO BMP list)	POD
1033	Soils and Geology	To the extent practical, locations selected for surface-disturbing activities including but not limited to well sites, access roads, tank batteries, pits, pipelines, power lines, and compressor stations shall be planned to minimize long-term disruption of the surface resources and promote successful reclamation.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1034	Soils and Geology	Interim reclamation shall be initiated on exposed soils on portions of the disturbance no longer needed for operations (e.g., cut-and-fill slopes, reserve pits, portions of well pads not needed for production operations) within one growing season of the time the disturbance is no longer needed for operations. Interim reclamation (i.e., site stabilization/soil retention seeding)	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		shall be conducted on disturbed areas that are needed for future planned operations but will not be occupied for one or more growing seasons.		
1035	Soils and Geology	Prior to any surface-disturbing activity, topsoil depth will be determined and the appropriate amount of topsoil shall be stockpiled for future use. Prior to reseeded, the Operator shall re-spread topsoil to a uniform depth on all areas of the well site not needed for production operations. Where feasible, topsoil stockpiles will be designed to maximize surface area to reduce impacts to soil microorganisms.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1036	Soils and Geology	No surface disturbance is permitted on slopes in excess of 25%.	RMP Appendix 2 (as cited in LFO BMP list)	POD
1037	Soils and Geology	The Operator is responsible for all erosion control resulting from surface-disturbing activities.	LFO and CFO BLM lists (no source cited)	POD
1038	Soils and Geology	Operator will avoid adverse impacts to soils by: <ul style="list-style-type: none"> <li>• using appropriate erosion and sedimentation control techniques, including but not limited to silt fencing, riprap, and matting; and</li> <li>• applying biodegradable mulch, netting, or soil stabilizers.</li> </ul>	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1039	Soils and Geology	No vehicle travel, construction, or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support vehicles and/or construction equipment as determined by the BLM AO. Vehicle travel must be confined to the approved access road and well pad at all times.	RMP Appendix 2, (as cited in LFO and CFO BMP lists)	POD
1040	Soils and Geology	Surface-disturbing activities are prohibited during periods when the soil is frozen, and watershed damage is likely to occur.	RMP Appendix 2, (as cited in LFO and CFO BMP lists)	POD
1041	Soils and Geology	Prior to the application of topsoil and reseeded the Operator shall rip the soils to a depth of at least 12 inches to break up compaction.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1042	Soils and Geology	All roads shall be constructed in accordance with the BLM 9113 Road Standards Manual and guidelines provided in the BLM Gold Book to prevent sediment movement off-site.	Gold Book 4th Edition, BLM 9113 Road Standards Manual, 43 CFR 3101.1-2 (as cited in CFO and LFO BMP lists)	POD
1043	Soils and Geology	Site Stabilization: <ul style="list-style-type: none"> <li>• All bare ground on a well pad that does not have active development (drilling, completion, and construction) and is not required for production activities will have at least 70% protective cover that may include but not be limited to organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric.</li> <li>• Access road(s) leading to the temporarily stabilized well pad will have protective cover to the same levels required on the well pad.</li> </ul>		POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1044	Soils and Geology	Where appropriate, operators will consult with private surface owners within the Project Area and coordinate reclamation efforts to accommodate and meet the expectations and requirements of private surface owners. <sup>3</sup>		POD
1045	Soils and Geology	Disturbed channel beds will be reshaped to their approximate original configuration.		POD
1046	Vegetation	During reclamation, a variety of native forage species will be used to return disturbed areas to conditions similar to those that existed before the proposed project or to a desired plant community designated in the Natural Resources Conservation Service Ecological Site Description.	Gold Book 4th Edition, 43 CFR 3101.1-2) (as cited in LFO and CFO BMP lists)	POD
1047	Vegetation	During interim reclamation, native plant species and natural revegetation are emphasized in the support of sustaining ecological functions and site integrity. Where reseeding is required, on land treatment efforts, emphasis will be placed on using native plant species. Seeding of non-native plant species will be considered based on local goals, native seed availability and cost, persistence of non-native plants and annuals and noxious weeds on the site, and composition of non-natives in the seed mix.	Gold Book 4th Edition, 43 CFR 3101.1-2) (as cited in LFO and CFO BMP lists)	POD
1048	Vegetation	Any weeds resulting from disturbance associated with the proposed Project would be controlled in accordance with guidelines established by the EPA, BLM, or appropriate authorities. Prior to the use of any herbicide, the applicator must have a valid certified applicators license and have a current approved Pesticide Use Proposal (PUP) for the chemical being applied, submitted to and approved by the BLM.	43 CFR 3101.1-2 (as cited in LFO and CFO BLM lists)	POD
1049	Vegetation	On all areas to be reclaimed, seed mixtures will be required to be site-specific, composed of native or other appropriate BLM-approved species, and will be required to include species promoting soil stability. Livestock palatability and wildlife habitat needs will be given consideration in seed mix formulation. BLM guidance for native seed use is BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants), and Executive Order No. 11987 (Exotic Organisms).	Executive Order No. 11987; BLM Manual 1745	POD
1050	Vegetation	Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives. During rehabilitation or areas in important wildlife habitat, provision will be made for the establishment of native species, if determined to be beneficial for the habitat affected. Follow-		POD

<sup>3</sup> On split-estate lands where federal mineral estate underlies private or state surface, the Companies would be required to adhere to Onshore Order No. 1, part VI.

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		up seeding or corrective erosion control measures may be required on areas of surface disturbance which experience reclamation failure.		
1051	Vegetation	Any mulch and mineral material (sand and gravel) used will be certified weed free and free from mold or fungi. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, and rock. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover.		POD
1052	Vegetation	Operators will monitor noxious weed occurrence on the Project Area and implement a noxious weed control program in cooperation with the BLM and Fremont and Natrona Counties to ensure noxious weed invasion does not become a problem. Weed-free certification by county extension agents will be required for grain or straw used for mulching re-vegetated areas. Gravel and other surfacing materials used for the Project will be reasonably free of noxious weeds.		POD
1053	Vegetation	Herbicide applications will be kept at least 500 feet from known special status plant species populations or other distance deemed safe by the BLM AO.		POD
1054	Vegetation	Aerial application of chemicals will be prohibited within 0.25 mile of special status plant locations.		POD
1055	Visual	Excavations and other disturbed areas will be re-contoured to existing grades.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as specified in LFO and CFO BMPs)	POD
1056	Visual	Every reasonable attempt will be made to allow for visual absorption of facility features into the background and to minimize sky lining of structures.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as specified in LFO and CFO BMPs)	POD
1057	Visual	Roads, pipeline corridors, drill rigs, wellheads, and production facilities will be screened to the extent feasible, as specified by the BLM. All permanent aboveground structures that will remain longer than six months will be painted Covert Green (18-0617 TPX) or another standard color required by the BLM. This measure will not apply to structures that require safety coloration, as prescribed by OSHA.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as specified in LFO and CFO BMPs)	POD
1058	Visual	Materials needed for resurfacing of the roadway and for installation of the production facilities will be purchased from suppliers having a permitted source of materials and will have a color blended to match the surrounding terrain.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as specified in LFO and CFO BMPs)	POD
1059	Visual	Within Visual Resource Management (VRM) Class III and IV areas, the BLM and Operators will utilize existing topography to screen roads, pipeline corridors, drill rigs, wells, and production facilities from view, where practical.		POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1060	Visual	New roads and pipeline corridors, to the extent practicable, will follow contours and use topography as screening. New pipelines will be combined with existing or proposed roads, where practical and feasible.		POD
1061	Groundwater and Surface Water	Channel crossings will be designed according to BLM standards to minimize changes to channel geometry, subsequent alteration in flow hydraulics, and prevent soil erosion.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1062	Groundwater and Surface Water	Disturbed channels will be re-graded to the original geometric configuration and will contain the same or similar bed material.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1063	Groundwater and Surface Water	Where pipelines cross channels, pipe will be buried below the scouring depth.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1064	Groundwater and Surface Water	To minimize impacts to aquifers, wells will be cased during drilling and cemented in accordance with Onshore Order No. 2. Well casings and welding will be of sufficient integrity to contain all fluids under high pressure during drilling and well completion.	Onshore Order #2 (as cited in LCO and CFO BMP lists)	POD
1065	Groundwater and Surface Water	Any changes in the produced water disposal method or location will be approved in writing by the BLM before the changes take place.	Onshore Order #7 (as cited in LFO and CFO BMP lists)	POD
1066	Groundwater and Surface Water	Reserve pit liners must be installed so they will not leak and must be composed of materials compatible with all substances to be placed in the pit. Synthetic liners shall be a minimum 16 <sup>4</sup> mil in thickness and must be resistant to ultraviolet radiation, weathering, chemicals, punctures, and tearing. Suitable bedding material, such as sand, clay, or felt liners should be used in areas where the base rock might puncture the liner.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1067	Groundwater and Surface Water	All water wells put to beneficial use, including produced water associated with this Project, will be under the jurisdiction of the Wyoming State Engineer's Office as required by applicable Wyoming law.		POD
1068	Groundwater and Surface Water	All water used for the drilling of the surface casing must comply with all requirements concerning water quality as set forth by the Wyoming Oil and Gas Conservation Commission (WOGCC) Regulations.		POD
1069	Groundwater and Surface Water	Operators will prepare Stormwater Pollution Prevention Plans (SWPPPs) for their respective areas of field development as required by Wyoming DEQ National Pollutant Discharge Elimination System permit requirements.		POD
1070	Groundwater and Surface Water	Notice of any spill or leakage, as defined in BLM Notice to Lessee (NTL) 3A, will be immediately reported by the Operator to the AO and other such	BLM NTL 3A; Wyoming DEQ Solid Waste Guidelines #2	POD

<sup>4</sup> Changed from 12 to 16 mils to be consistent with Page 9 of the Plan of Development.



**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		federal and state officials (e.g., Wyoming DEQ) as required by law. Verbal notice will be given as soon as possible, but within 24 hours, and verbal notices will be confirmed in writing within 72 hours of any such occurrence. Any accidental soil contamination by spills of petroleum products or waste materials will be cleaned up and the soil disposed of or rehabilitated according to Wyoming DEQ Solid Waste Guidelines (#2) for petroleum-contaminated soils. <sup>5</sup>		
1071	Groundwater and Surface Water, Produced Water	Water for hydrostatic testing and drilling operations will be obtained from valid existing water rights, usually by groundwater pumping or treated produced water. The Proponents will voluntarily evaluate a wide range of options pertaining to the reuse/recycling of water for drilling and completion operations as part of the Application for Permit to Drill (APD) process. If viable and/or alternative uses are identified and proven to be successful, the BLM may consider these as preferred design features.		POD
1072	Wetlands, Riparian Areas, and Floodplains	All surface disturbance, permanent facilities, etc., will remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site-specific analysis, approved in writing by the BLM AO, that there is no practicable alternative to the proposed project. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures will be determined on a case-by-case basis and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.	LFO RMP Appendix 2 (as cited in LFO BMP list)	POD
1073	Wetlands, Riparian Areas, and Floodplains	All surface disturbance, permanent facilities, etc., will have a 500-foot No Surface Occupancy (NSO) for Class I and II waters as determined in the RMP.	Record of Decision (ROD) 1035 RMP (as cited in CFO BMP list)	POD
1074	Wetlands, Riparian Areas, and Floodplains	If the head of the agency finds that the only practicable alternative consistent with the law and the policy set forth in the Order requires siting in a floodplain, the agency will, prior to taking action, (1) design or modify its action in order to minimize potential harm, and (2) prepare and circulate a notice containing an explanation of why the action proposed is to be located in the floodplain.	Floodplain Executive Order 11988 (Section 2.a.[2]) (as cited in Operators BMP list)	POD
1075	Wetlands, Riparian Areas, and Floodplains	Agencies will, if facilities are to be located in a floodplain (i.e., no practicable alternative), apply flood protection measures to new construction or rehabilitate existing structures, elevate structures rather than fill the land, provide flood height potential markings on facilities to be used by the public,	Floodplain Executive Order 11988 (Section 3) (as cited in Operators BMP list)	POD

<sup>5</sup> Also refer to BLM-WY IM 2009-021, *Guidance and Standards for Response to Oil and Gas-Related Spills and Clean-Up Criteria*.

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		and when the property is proposed for lease, easement, right-of-way (ROW), or disposal, the agency has to attach restriction on uses in the conveyance, etc., or withhold from such conveyance.		
1076	Wetlands, Riparian Areas, and Floodplains	Floodplains by their very nature are unsafe locations for permanent structures. With an inundation of flood waters, soils disturbed by construction could experience a rate of erosion greater than undisturbed sites. There is an additional concern over the potential for flood waters to aid in the dispersal of materials that may be stored within such structures. Therefore, federally managed 100-year floodplains will have no permanent structures constructed within their boundaries unless it can be demonstrated on a case-by-case basis that there is no physically practical alternative. In cases where floodplain construction is approved, additional constraints could be applied.		POD
1077	Wetlands, Riparian Areas, and Floodplains	Any disturbances to wetlands and/or waters of the U.S. will be coordinated with the U.S. Army Corps of Engineers, and Section 404 permits will be secured as necessary prior to disturbance.	Clean Water Act, Section 404	POD
1078	Wetlands, Riparian Areas, and Floodplains	Operators will evaluate all Project facility sites for occurrence of waters of the U.S., special aquatic sites, and wetlands, per U.S. Army Corp of Engineer requirements. All Project activities will be located outside of these sensitive areas, to the greatest extent practicable.	Clean Water Act, Section 404	POD
1079	Wetlands, Riparian Areas, and Floodplains	Where disturbance of wetlands, riparian areas, streams, and ephemeral/intermittent stream channels cannot be avoided, U.S. Army Corp of Engineer Section 404 permits will be obtained by the Operator as necessary.	Clean Water Act, Section 404	POD
1080	Wetlands, Riparian Areas, and Floodplains	Streams, wetlands, and riparian areas disturbed during Project construction will be restored to as near pre-project conditions as practical, and if impermeable soils contributed to wetland formation, soils will be compacted to reestablish impermeability.		POD
1081	Wetlands, Riparian Areas, and Floodplains	Wetland topsoil will be selectively handled.		POD
1082	Wetlands, Riparian Areas, and Floodplains	Reclamation activities will begin on disturbed wetland areas immediately after completion of project activities.		POD
1083	Wildlife, Threatened and Endangered (T&E), and Special Status (SS) Species	All production facilities shall be equipped to sufficiently restrict noise to 49 A-weighted decibels (dBA) at a distance of 2,500 feet from the facility.	43 CFR 3101.1-2, as cited in LFO and CFO BMP lists)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1084	Wildlife, T&E, and SS Species	All pits containing fluids will be flagged or netted to minimize access by migratory birds and wildlife. Production pits will require netting. Pits containing oil or hazardous substances, as defined in the Comprehensive Environmental Response, Compensation, and Liability Act, Section 101 (14), as determined by visual evaluation or testing will require netting.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists), U.S. Migratory Bird Treaty Act (16 U.S.C. 703-712)	POD
1085	Wildlife, T&E, and SS Species	All pits and open cellars will be fenced to limit access by wildlife. Fencing will meet BLM specifications.	Gold Book 4th Edition, 43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1086	Wildlife, T&E, and SS Species	Unless otherwise agreed to by the AO in writing, power lines shall be constructed in accordance with the Avian Power Line Interaction Committee (APLIC) Suggested Practices for Avian Protection on Power Lines—The State of the Art in 2006 (APLIC 2006).	APLIC (APLIC 2006) (as cited in LFO and CFO BMP lists)	POD
1087	Wildlife, T&E, and SS Species	Surface-disturbing activities in crucial winter range for antelope will be prohibited during the period of November 15 to April 30. The operator may request an exception in writing to the condition at any time. Any exception to the condition must be approved in writing by the AO prior to conducting any surface-disturbing activities or prior to conducting activities disruptive to wildlife. The exception request must explain the reason(s) for the exception and explain why the proposed activities will not impact the species or their habitat.	RMP Appendix 2, 43 CFR 3101.1-2, (as cited in LFO BMP list)	POD
1088	Wildlife, T&E, and SS Species	No surface-disturbing or wildlife-disturbing activities are allowed from November 15 through April 30 on all crucial big game winter ranges. This restriction will not apply to the Salt Creek and Wind River management areas. The AO can grant exceptions (ROD 4043 RMP).	ROD 4043 RMP (as cited in CFO BMP list)	POD
1089	Wildlife, T&E, and SS Species	A habitat review will be conducted for special status species before construction activities begin.	BLM 6840 Manual – Special Status Species Management (as cited in LFO and CFO BMP list)	POD
1090	Wildlife, Plants, T&E, and SS Species	If threatened, endangered, candidate, or proposed species are discovered at any time during construction, all construction activities will be stopped and the BLM will be immediately notified. Work will not resume until a Notice to Proceed is issued by the BLM.	Endangered Species Act (ESA) (as cited in LFO and CFO BMP lists)	POD
1091	Wildlife, Plants, T&E, and SS Species	If, while conducting operations, substantial unanticipated environmental affects to listed, proposed, or candidate species are observed (whether effects are direct or indirect), formal consultation with U.S. Fish and Wildlife Service (USFWS) will be initiated immediately in addition to cessation of all such operations.	ESA (as cited in LFO and CFO BMP lists)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1092	Wildlife, Plants, T&E, and SS Species	Surveys for threatened and endangered (T&E) and candidate wildlife species will be implemented in areas of potential habitat prior to disturbance. If T&E and/or candidate species are found in the area, consultation with the USFWS will be initiated, and construction activities will be curtailed until there is concurrence between the BLM and USFWS and the BLM issues a Notice to Proceed.	BLM 6840 Manual – Special Status Species Management (as cited in CFO and LFO BMP lists)	POD
1093	Wildlife, Plants, T&E, and SS Species	Site-specific surveys for special status plant species will be conducted prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species. These surveys will be completed by a qualified botanist and data from these surveys will be provided to the BLM.	BLM 6840 Manual – Special Status Species Management (as cited in CFO and LFO BMP lists)	POD
1094	Wildlife, Plants, T&E, and SS Species	USFWS and BLM consultation and coordination will be conducted for all mitigation activities relating to raptors and T&E species and their habitats, and all permits required for movement, removal, and/or establishment of raptor nests will be pursued if they meet USFWS migratory bird office requirements.		POD
1095	Wildlife, T&E, and SS Species	Well locations and associated road and pipeline routes will be selected and designed to avoid disturbances to areas of high wildlife value (e.g., raptor nest sites, wetland areas).		POD
1096	Wildlife, T&E, and SS Species	Companies will avoid activities and facilities that create barriers to the seasonal movements of big game and livestock.		POD
1097	Wildlife, T&E, and SS Species	Reserve, workover, and production pits potentially hazardous to wildlife will be adequately protected (e.g., fencing, netting, flagging) to prohibit wildlife access as directed by the BLM.	Gold Book 4th Edition, U.S. Migratory Bird Treaty Act (16 U.S.C. 703-712)	POD
1098	Wildlife, T&E, and SS Species	Wildlife-proof fencing may be utilized on reclaimed areas, in accordance with standards specified in BLM Fencing Handbook 1741-1, if it is determined that wildlife species are impeding successful vegetation establishment.		POD
1099	Wildlife, T&E, and SS Species	All new production facilities construction which has open-vent exhaust stacks will be equipped to prevent bird and bat entry or perching on the stack.		POD
1100	Wildlife, T&E, and SS Species	All secondary containment structures specifically used for methanol containment will be designed to prevent bird, animal, or livestock entry.		POD
1101	Wildlife, T&E, and SS Species	ROW fencing associated with this Project will be kept to a minimum and, if necessary, fences will consist of four-strand barbed wire meeting Wyoming Game and Fish approval and BLM Fencing Handbook 1741-1 standards for facilitating wildlife movement.		POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1102	Wildlife, Plants, T&E, and SS Species	Unless otherwise agreed between a particular operator and the BLM with respect to certain operations or designated areas, operators will finance site-specific surveys for T&E and BLM sensitive species prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (BLM Manual 6840). Data from these surveys will be provided to the BLM, and if any occupied habitats for T&E and BLM sensitive species are found, BLM recommendations for avoidance or mitigation will be implemented.		POD
1103	Raptors and Migratory Birds	Potential (active) mountain plover nesting habitats will be avoided during project activities within 0.25 mile from April 10 to July 10. The operator may request an exception in writing to the condition at any time. Any exception to the condition must be approved in writing by the AO prior to conducting any surface-disturbing or prior to conducting activities disruptive to wildlife. The exception request must explain the reason(s) for the exception and explain why the proposed activities will not impact the species or their habitat. Surveys to determine presence/absence of the plover will be conducted and data supporting the exception must accompany the written request.	43 CFR 3101.1-2 (as cited in LFO and CFO BMP lists)	POD
1104	Raptors and Migratory Birds	Avoid surface-disturbing activities occupancy within either 0.25 mile or 0.50 mile depending on the species. To protect special status raptor nesting habitats, activities, or surface use will not be allowed from February 1 through July 31 within certain areas. The BLM AO, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be 0.25 to 0.5 mile. The operator may request an exception in writing to the condition.	ROD 4047 and 4058 RMP (as cited CFO BMP list)	POD
1105	Raptors and Migratory Birds	Surface-disturbing activities within 0.75 mile of known active raptor nests shall be prohibited during the nesting period from February 1 to July 31. The operator may request an exception in writing to the condition at any time. Any exception to the condition must be approved in writing by the AO prior to conducting any surface-disturbing activities or prior to conducting activities disruptive to wildlife. The exception request must explain the reason(s) for the exception and explain why the proposed activities will not impact the species or their habitat. Data supporting the exception must accompany the written request.	RMP Appendix 2, 43 CFR 3101.1-2 (as cited in LFO BMP list)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1106	Raptors and Migratory Birds	Prohibit surface development on public lands in an area from 0.5 to 1.0 mile of known or discovered bald eagle nests. The specific distance and dimensions of the area on which surface development will be prohibited will be determined on a case-by-case basis after consultation with the USFWS in accordance with the ESA. <sup>6</sup> As specified in the Bald Eagle Habitat Management Plan all roosts outside the Jackson Canyon Area of Critical Environmental Concern are withdrawn from locatable mineral entry and closed to disposal of mineral materials. Develop, revise, update, and consolidate Habitat Management Plans to include management objectives and prescriptions for wildlife.	ROD 4012 and 4013 RMP (as cited in CFO BMP list)	POD
1107	Raptors and Migratory Birds	If detected during preconstruction surveys, burrowing owls nests will be avoided to the extent possible.	BLM 6840 Manual – Special Status Species Management (as cited in LFO BMP list)	POD
1108	Raptors and Migratory Birds	USFWS consultation and coordination will be conducted for all permits required for movement, removal, and/or establishment of raptor nests.	BLM 6840 Manual – Special Status Species Management (as cited in LFO and CFO BMP lists)	POD
1109	Raptors and Migratory Birds	Unless otherwise approved by the BLM, all surface-disturbing activity, including construction of roads, pipelines, well pads, drilling, completion, or workover operations, will be seasonally restricted from February 1 through August 15 within 1.0 mile of all active bald eagle nests.	LFO RMP	POD
1110	Raptors and Migratory Birds	Except for bald eagles which are discussed above, raptor nest surveys will be conducted for active nests within a 0.5- to 1.0-mile radius of proposed surface use or activity areas if such activities are proposed to be conducted between February 1 and July 31, unless otherwise approved by the BLM.		POD
1111	Raptors and Migratory Birds	Unless otherwise approved by the BLM, all surface-disturbing activity (e.g., road, pipeline, well pad construction, drilling, completion, workover operations) will be seasonally restricted from February 1 through July 31 within a 0.5-mile radius of all occupied raptor nests, except ferruginous hawk nests, for which the seasonal buffer will be 1.0 mile. The seasonal buffer distance and exclusion dates applicable may vary depending on such factors as the activity status of the nest, species involved, prey availability, natural topographic barriers, line-of-site distance(s), and other conflicting issues such as cultural values, steep slopes, etc. The operator may request an exception in writing to the condition. Any exception to the condition must be approved in writing by the AO prior to conducting any surface disturbing activities or		POD

<sup>6</sup> The bald eagle was delisted under ESA in 2007. Coordination with USFWS would occur in compliance with the Bald and Golden Eagle Protection Act.

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		prior to conducting activities disruptive to wildlife. The exception request must explain the reason(s) for the exception and explain why the proposed activities will not impact the species or their habitat. Data supporting the exception must accompany the written request. USFWS consultation and coordination will be conducted.		
1112	Raptors and Migratory Birds	Unless otherwise approved by the BLM, surface-disturbing and disruptive activity will be prohibited within 0.5 mile of occupied burrowing owl nests from April 1 through August 15. Surveys may be required to determine nesting status.		POD
1113	Raptors and Migratory Birds	Unless otherwise approved by the BLM, for surface-disturbing activities, surveys will be conducted as necessary within suitable plover habitat by a qualified biologist in accordance with USFWS 1999 guidelines (a copy of the guidelines may be obtained from the USFWS, BLM, or Wyoming Game and Fish Department [WGFD]). Two types of surveys may be conducted: (1) surveys to determine the presence/absence of breeding plovers (i.e., displaying males and foraging adults), or (2) surveys to determine nest density. Unless otherwise approved by the BLM, if surface-disturbing activity is requested to take place in mountain plover habitat between April 10 and July 10, presence/absence surveys are required. Survey results will determine when activities are allowed.		POD
1114	Greater Sage-Grouse	Raptor perching deterrents will be used on power lines structures within 0.5 mile of active sage-grouse leks to minimize raptors perching in the immediate area of the lek and reduce the potential for increased raptor predation during the sage-grouse breeding season.	43 CFR 3101.1-2, (as cited in CFO and LFO BMP lists)	POD
1115	Greater Sage-Grouse	A 0.25-mile buffer zone will be established around known sage-grouse leks, and all construction and surface occupancy will not be allowed within this buffer zone.	RMP Appendix 2 (as cited in LFO BMP list)	POD
1116	Greater Sage-Grouse	A 2-mile buffer zone will be established around known sage-grouse leks, and construction activity in this buffer zone will be restricted between March 15 and July 15 to minimize effects to nesting sage-grouse. The operator may request an exception in writing to the condition at any time. Any exception to the condition must be approved in writing by the AO prior to conducting any surface-disturbing activities or prior to conducting activities disruptive to wildlife. The exception request must explain the reason(s) for the exception and explain why the proposed activities will not impact the species or their habitat.	RMP Appendix 2, 43 CFR 3101.1-2 (as cited in CFO and LFO BMP lists)	POD

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1117	Greater Sage-Grouse	If existing information is not current, field evaluations for Greater Sage-Grouse leks and/or nests may be conducted by a qualified biologist prior to the start of activities in potential Greater Sage-Grouse habitat. These field evaluations for leks and/or nests will be conducted if Project activities are planned in potential Greater Sage-Grouse habitat between March 15 and July 15. BLM wildlife biologists will ensure that such surveys are conducted using proper survey methods.		POD
1118	Greater Sage-Grouse	To avoid potentially significant noise impacts, regional compressor stations will be located 2,500 feet or more from active sage-grouse leks.		POD
1119	Prairie Dog	If detected during preconstruction surveys, white-tailed prairie dog colonies will be avoided to the extent possible.	BLM 6840 Manual – Special Status Species Management (as cited in LFO BMP list)	POD
1120	Prairie Dog	<p>Prairie dog control within the planning area may be initiated as follows:</p> <ol style="list-style-type: none"> <li>1) The Animal and Plant Health Inspection Services or their authorized agent carry out prairie dog control actions.</li> <li>2) No prairie dog control measures will be carried out on prairie dog towns that are more than 0.5 mile from private land, unless a human health or safety concern is documented, or where resource damage occurs and is documented by the BLM.</li> <li>3) Treatment of prairie dog towns will be considered only if a written request is received from the owner of adjacent property. The BLM will not conduct treatment unless adjacent private lands are treated concurrently.</li> <li>4) No treatment will occur in areas identified for black-footed ferret reintroduction, except when public health and safety risks warrant control.</li> </ol> <p>Surface-disturbing and disruptive activities should be designed in a manner that avoids prairie dog towns and complexes. Where this is impractical, the disturbance should be located in a manner where it will have the least amount of impact to prairie dogs. NSO or use is allowed on designated critical habitat for threatened or endangered species. Areas known or suspected to contain essential habitat for special status species will be subject to a Controlled Surface Use (CSU) restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species.</p>	CFO ROD 4015 and 4060 RMP (as cited in CFO BMP list)	POD
1121	Prairie Dog	Proposed construction sites in the development Area will be examined prior to surface-disturbing activities to confirm the presence or absence of prairie dog colonies, where appropriate. To the extent not already block-cleared by the USFWS and/or the WGFD, confirmation will be made of white-tailed prairie dog colony/complex size, burrow density, and any other data to		POD



Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		indicate whether the criteria for black-footed ferret habitat, established in the USFWS guidelines, are present.		
1122	General	Existing roads will be incorporated into access road planning to the maximum extent practicable and upgraded as necessary.		POD
1123	Water	The Wyoming DEQ-approved <i>Channel Stability Monitoring and Mitigation Protocol</i> will be implemented to maintain long-term channel stability of discharge outfalls into Alkali Creek.		POD
<b>BLM Resource Management Plan Stipulations and Best Management Practices</b>				
1124	Air Quality	Work cooperatively to estimate potential impacts from potential emission reduction.	CFO ROD #1006	BLM RMP
1125	Air Quality	Enhance existing criteria pollutant and Air Quality Related Value (AQRV) monitoring on a project-specific or as-needed basis. Locations of AQRV monitors will be determined through a cooperative process. Suggest Wyoming DEQ AQD consider adding new criteria pollutant monitors.	CFO ROD #1013	BLM RMP
1126	Air Quality	Enhance the existing cooperative process that shares air quality information to agencies, stakeholders, and the public.	CFO ROD #1014	BLM RMP
1127	Air Quality	<p>The BLM will consider implementing mitigations within its authority to reduce emissions from current levels in the planning area.</p> <p>The BLM will facilitate discussions with stakeholders to implement mitigations beyond the BLM's authority to reduce emissions from current levels in the planning area, such as:</p> <ul style="list-style-type: none"> <li>• Consider a program to offset emissions proposed by the RMP.</li> <li>• Reduce emissions from existing sources (by techniques such as more stringent Best Available Control Technologies).</li> </ul>	CFO ROD #1015	BLM RMP
1128	Paleontological Resources	<p>Allow standard development and BLM-authorized activities to proceed in accordance with resource protections identified in regulations and guidelines.</p> <p>For significant paleontological resources, require the recovery of scientific data if an activity would cause adverse effects. Identify resources that would be useful for public interpretation and pursue funding to allow visitation and interpretation.</p> <p>When disturbing formations considered to have “very high” and “high” potential fossil yield classification, and as needed in “moderate” potential fossil yield classification areas, survey and/or monitor for the discovery of significant paleontological resources. Protect paleontological resources</p>	LFO ROD #5054	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		considered to be significant (vertebrate fossils and invertebrate or plant fossils considered scientifically important by professional paleontologists) from the effects of development projects. Protection also includes data recovery through scientific collection or excavation, and/or protection/stabilization. Develop special management plans for areas of unusual or concentrated significant paleontological resources.		
1129	Paleontological Resources	Mineral management in areas with “very high” or “high” potential fossil yield classification is as follows (unless other, more restrictive management would apply, such as an Area of Critical Environmental Concern designation): <ul style="list-style-type: none"> <li>• Open to oil and gas subject to CSU stipulations</li> <li>• Open to geophysical exploration</li> <li>• Open to geothermal</li> <li>• Open to solid mineral leasing</li> <li>• Open to locatable minerals</li> </ul> Open to mineral material disposals with restrictions on location	LFO ROD #5058	BLM RMP
1130	Paleontological Resources	ROW management in areas with “very high” or “high” potential fossil yield classification is avoided for major and minor ROWs.	LFO ROD #5059	BLM RMP
1131	Paleontological Resources	Identify areas that contain high paleontological values. Protect those areas from undue degradation by limiting surface-disturbing activities in number and scope as allowable.	CFO ROD #5015	BLM RMP
1132	Paleontological Resources	Require an on-the-ground survey prior to approval of surface-disturbing activities or land-disposal actions for Class 4 and 5 formations. Monitor during surface-disturbing activities only as appropriate. Apply, as deemed necessary, for Class 3 formations (see Probable Fossil Yield Classification in the glossary).	CFO ROD #5018	BLM RMP
1133	Paleontological Resources	Utilize on-the-ground survey prior to approval of surface disturbing activities or land disposal actions for Class 4 and Class 5 formations to avoid resource-bearing strata on a case-by-case basis. Monitor during surface disturbing activities in potential resource bearing strata on a case-by-case basis. Survey and monitor on a case-by-case basis following discovery for Class 3 formations.	Rawlins Field Office (RFO) ROD p. 2-24	BLM RMP
1134	Leasable Minerals – Oil and Gas	The planning area is open to geophysical exploration except for lands identified as closed to mineral leasing or NSO to oil and gas leasing or as otherwise provided in other decisions. Geophysical exploration is subject to motorized travel limitations and restrictions on surface-disturbing activities.	LFO RFD #2013	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1135	Leasable Minerals – Oil and Gas	Those lands currently open to oil and gas leasing will continue to be open to geophysical operations. Those lands open to oil and gas leasing, but subject to an NSO restriction, may be open to geophysical operations should site-specific National Environmental Policy Act (NEPA) analysis disclose a finding of no significant impact. No geophysical operations are allowed in areas administratively unavailable for oil and gas leasing.	CFO ROD #2019	BLM RMP
1136	Leasable Minerals – Oil and Gas	All lands open to oil and gas leasing consideration will also be open to geophysical exploration, subject to appropriate resource surveys, surface protection measures, adequate bonding, and adherence to State of Wyoming standards for geophysical operations.	RFO ROD p. 2-20	BLM RMP
1137	Leasable Minerals – Oil and Gas	Designated Development Areas (DDAs): Wildlife seasonal protections for maintenance and operation actions determined to be detrimental to wildlife will not be applied inside DDAs. Refer to Appendix F.	LFO ROD #2020	BLM RMP
1138	Soils	Surface-disturbing activities may be authorized with conditions of approval in areas with limited reclamation potential soils. Avoid surface disturbing activities in areas with limited reclamation potential soils outside of DDAs whenever possible.	LFO ROD #1013	BLM RMP
1139	Soils	Conduct assessment of soil limitations analysis using automated soil survey or field investigations on any surface-disturbing activity causing more than 20 acres of disturbance per year. Surface-disturbing activities causing less than 20 acres of disturbance per year will be assessed as warranted.	CFO ROD #1018	BLM RMP
1140	Soils	Inspect disturbed and reclaimed areas for signs of accelerated erosion on projects disturbing more than 20 acres per year. Surface-disturbing activities causing less than 20 acres of disturbance per year will be assessed as warranted.	CFO ROD #1019	BLM RMP
1141	Soils	Minimize the disturbance to highly erosive soils (575,788 acres of BLM federal mineral estate of which 256,240 acres are BLM surface). Proposed surface-disturbing activities will be modified (located) to avoid areas of highly erosive soils to the greatest extent practicable.	CFO ROD #1020	BLM RMP
1142	Soils	Prohibit surface-disturbing activities on slopes greater than 25% (Map 7). Avoid or control surface-disturbing activities on slopes between 15 and 24%. Oil and gas management on slopes between 15 and 24% is open with CSU stipulations. ROWs authorized in Designated Corridors will require a construction and mitigation plan to prevent soil loss on slopes greater than 15%. See Decision Record 4009 for limits of slope related to timber harvest.	LFO ROD #1014	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1143	Soils	Surface disturbance or development on slopes greater than 25% is prohibited, unless individual site plans are submitted to and approved by the AO meeting the following requirements.	CFO ROD #1022	BLM RMP
1144	Soils	Surface disturbing activities will be avoided on unstable areas, such as landslides, slopes of greater than 25%, slumps, and areas exhibiting soil creep.	Rawlins Field Office (RFO) ROD p. 2-50	BLM RMP
1145	Soils	Require that surface-disturbing activities minimize the surface disturbance footprint to the maximum extent possible to limit the areas requiring reclamation. Limit disturbance of desirable vegetative communities established during interim reclamation when implementing final reclamation.	LFO ROD #1017	BLM RMP
1146	Soils	Re-treat reclaimed areas that do not have at least 30% of predisturbance vegetative cover three growing seasons after final reclamation. Re-treating will vary by site and initial reclamation success, but may include invasive species control, reseeding the site with other native species or the same native species under more favorable environmental conditions. Re-treatment also may involve additions of fertilizers or soil amendments and protective cover, such as mulch, matting, or netting. Livestock grazing also may be limited until reclamation success has been established. Grazing controls will vary by site, but might include herding, fencing, deferred use, or supplemental feeding.  Re-treat reclaimed areas that do not have at least 50% of predisturbance vegetative cover five growing seasons after final reclamation.	CFO ROD #1026	BLM RMP
1147	Soils	Allow limited or no topsoil salvage when alternative soil-handling methods may be appropriate. Some examples include salvage of topsoil on the pipeline trench only, instead of full ROW salvage, or scalping temporary work areas leaving the soil in place, followed by soil ripping when the work is completed.	CFO ROD #1027	BLM RMP
1148	Soils	Limit total long-term surface disturbance from all BLM-authorized activities to no more than 80 acres per square mile. Applies to BLM surface only.	CFO ROD #1028	BLM RMP
1149	Soils	The requirement to measure cumulative annual short- and long-term disturbance is applied on a case-by-case basis as project conditions warrant.	CFO ROD #1030	BLM RMP
1150	Reclamation	Require a detailed site analysis and reclamation plan before development, if soil in limited reclamation potential areas (Map 8) will be disturbed.	LFO ROD # 1012	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1151	Reclamation	On BLM-administered surface, conduct onsite soil investigations on highly controversial projects, or in areas of highly erosive soils, to evaluate the impacts of surface-disturbing activities. Onsite soil investigations may include mapping the soils to a series level, evaluating current erosion conditions, and prescribing mitigation and reclamation practices.	CFO ROD #1017	BLM RMP
1152	Reclamation	Reclamation management practices will select native plant species based on site characteristics and ecological site descriptions. Reclamation success will be determined based on the criteria and standards identified in Appendix B (p. 159).	LFO ROD #1025	BLM RMP
1153	Reclamation	Re-seed all disturbed areas with native species adapted to the site conditions and capable of providing protective soil cover. All seed must be certified weed-free. Nonnative species may be used on a case-by-case basis when resource objectives will not be met through the use of native species and the nonnative plants have no invasive properties. When practical, reseeding of disturbed areas should include the use of locally harvested seed from comparable areas in Wyoming and surrounding states.	CFO ROD #1025	BLM RMP
1154	Water	Avoid the authorization of activities likely to cause accelerated channel erosion and adverse adjustments in channel geometry (dimension, pattern, or profile).	LFO ROD #1034	BLM RMP
1155	Water	Do not authorize permanent facilities, including roads, in 100-year floodplains (where mapped) and riparian-wetland areas (Map 5) except to benefit watershed health or vegetation. Linear watercourse crossings are considered on a case-by-case basis and authorized only with mitigation such as crossing at right angles or temporary bridges.	LFO ROD #1048	BLM RMP
1156	Water	Surface disturbing activities will be avoided in the following areas: (1) identified 100-year floodplains.	RFO ROD p. 2-50	BLM RMP
1157	Water	In DDAs, prohibit surface-disturbing activities within 500 feet of surface water, riparian-wetland areas, and playas unless on a site-specific basis a lesser distance is shown to provide equivalent protection (Map 4). Outside of DDAs, prohibit surface-disturbing activities within 500 feet of surface water, riparian-wetland areas, and playas unless activities are determined to be necessary and when impacts can be mitigated (Map 4).	LFO ROD #4031	BLM RMP
1158	Water	On perennial and intermittent streams, control the number of on-channel reservoirs through project-level planning. This could involve removing existing structures or building new structures to achieve desired flow regime.	CFO ROD #1031	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1159	Water	On BLM-authorized drilling activities, require use of pitless drilling technology where there is potential for adverse impact to surface water, groundwater, or soils.	CFO ROD #1034	BLM RMP
1160	Water	Class 1 and Class 2 waters – (Wyoming DEQ water quality standard): NSO within 500 feet. Wildlife and livestock watering facilities and recreation facilities will be allowed when no other alternatives exist and only when they meet management objectives. Waters other than Class 1 and Class 2 will be considered on a case-by-case basis.  Class 1 and Class 2 waters – (Wyoming DEQ water quality standard): CSU from 500 feet to ¼-mile. Within the CSU area, use best available technology and (or) BMPs to minimize impacts. Waters other than Class 1 and Class 2 will be considered on a case-by-case basis.	CFO ROD #1035	BLM RMP
1161	Water	CSU within 500 feet of water wells, springs, or artesian and flowing wells.	CFO ROD #1036	BLM RMP
1162	Water	Surface disturbing activities will be avoided in the following areas: (2) areas within 500 feet of perennial waters, springs, and wetland and riparian areas.  Surface disturbing activities will be avoided in the following areas: areas within 100 feet of the inner gorge of ephemeral channels.	RFO ROD p. 2-50	BLM RMP
1163	Water	Convert suitable abandoned oil and gas development water-supply wells and suitable abandoned oil and gas wells where there is a need for additional water supplies to livestock and wildlife water supply use on BLM-administered lands.	CFO ROD #1042	BLM RMP
1164	Water	Evaluate the impacts and mitigate the adverse impacts of all proposed and existing oil- and gas-produced water discharge on stream channel and streambank stability on all BLM-administered lands.	CFO ROD #1043	BLM RMP
1165	Vegetation	Avoid surface disturbance in unique plant communities.	LFO ROD #2035	BLM RMP
1166	Vegetation	Require that equipment and vehicles used for BLM-authorized activities be cleaned for seeds of noxious weeds and invasive nonnative species before moving onto BLM-administered lands. Prohibit project vehicles accessing BLM-administered lands via cross-county travel from driving through infestations during access to the site. If the area on which BLM-authorized activities take place is identified as being a high risk for invasive and/or noxious weeds, require that vehicles be cleaned before leaving the worksite and include prescriptions for the disposal of wash water.	LFO ROD #4023	BLM RMP
1167	Vegetation	Use produced water, where reasonable and practical, to develop and enhance waterfowl and special status species waterfowl habitats.	CFO ROD #4002	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1168	Vegetation	Apply, where surface development or disturbance occurs, appropriate mitigation measures to minimize impacts to vegetative resources. Emphasize the use of native plants appropriate to the site for reclamation activities. Nonnative species may be used on a case-by-case basis when resource objectives will not be met through the use of native species.	CFO ROD #4003	BLM RMP
1169	Vegetation	Develop a drought contingency plan to maintain adequate habitat components for viable fish, wildlife, and special status species populations.	CFO ROD #4004	BLM RMP
1170	Vegetation	Manage lotic and lentic wetland/riparian areas toward proper functioning condition.	CFO ROD #4007	BLM RMP
1171	Vegetation	Manage actively, where invasive, nonnative plant species occurs, to contain or eradicate them using an integrated management approach and cooperative agreements with county weed and pest control districts, industry, and private landowners across all vegetative communities.	CFO ROD #4008	BLM RMP
1172	Vegetation	Utilize an integrated management approach (i.e., mechanical, chemical, biological, prescribed fire, or livestock grazing) to manipulate seral stages within vegetative communities to achieve objectives defined by the range, forestry, wildlife, watershed, and invasive, nonnative plant species programs.	CFO ROD #4009	BLM RMP
1173	Vegetation	NSO or use is allowed on designated critical habitat for threatened or endangered species. Areas known or suspected to contain essential habitat for special status species will be subject to a CSU restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species.	CFO ROD #4015	BLM RMP
1174	Vegetation	The blocks of public land identified as mapped in the CFO Field Office Geographic Information System (GIS) database will be managed to retain intact blocks of native vegetation (192,545 acres, of which 131,879 acres are BLM-administered surface). In these areas, the following restrictions apply:  All allowed surface-disturbing activities within the designated blocks are subject to a CSU restriction, minimizing surface disturbance to meet management objectives.	CFO ROD #4024	BLM RMP
1175	Vegetation	In unique plant communities (Map 3-10a), such as the Muddy Gap Cushion Plant Community area. Intensive management actions will be taken to protect the unique plant communities where necessary.  Occupied habitat for T&E and proposed and candidate species is open to oil and gas leasing with an NSO stipulation.	RFO ROD p. 2-47	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1176	Vegetation	Manage 630,183 acres of sagebrush communities toward desired plant community (DPC).	CFO ROD #4037	BLM RMP
1177	Vegetation	Protect and (or) enhance riparian, wetland, and streamside areas, as necessary, with special management, including, but not limited to, fencing, development of alternative water supplies, livestock herding, placement of supplements (feed and mineral), pasture boundary adjustments, and season of use.	CFO ROD #4039	BLM RMP
1178	Vegetation	Inventory and develop a treatment plan to reduce or eliminate salt cedar stands over the life of the plan.	CFO ROD #4040	BLM RMP
1179	Fish and Wildlife Resources – Wildlife	Utilize a full range of mitigation options (including offsite mitigation) when developing mitigation for project-level activities in order to reduce impacts to wildlife and special status species habitats.	CFO ROD #4021	BLM RMP
1180	Fish and Wildlife Resources – Wildlife	Outside of DDAs, wildlife seasonal protections for surface-disturbing and disruptive activities apply to maintenance and operations actions when the activity is determined to be detrimental to wildlife (see Appendix F [p. 201]). Reclamation of surface disturbance will be in accordance with Appendix B (p. 159) for non-DDAs.	LFO ROD #4056	BLM RMP
1181	Fish and Wildlife Resources – Wildlife	Prohibit surface-disturbing and disruptive activities within identified big game crucial winter range (Maps 18-22) from November 15 to April 30 and within identified big game parturition areas (Maps 18-22) from May 1 to June 30 unless an exception, waiver, or modification is granted by the AO. Authorize exceptions for reclamation seeding when appropriate.	LFO ROD #4061	BLM RMP
1182	Fish and Wildlife Resources – Wildlife	Prohibit surface-disturbing and disruptive activities within identified elk winter range from November 15 to April 30 (Map 51). For the benefit of mule deer and their habitat, close the area in Townships 29 and 30 in Range 99 and all of Townships 40 and 41 to phosphate leasing (75,622 acres [Map 41]).	LFO ROD #4062	BLM RMP
1183	Fish and Wildlife Resources – Wildlife	No surface-disturbing and wildlife disturbing activities are allowed from November 15 through April 30 (Timing Limitation Stipulation [TLS]) on all crucial big game winter ranges. The AO can grant exceptions. This restriction will not apply to the Salt Creek and Wind River Management Actions (MAs).	CFO ROD #4043	BLM RMP
1184	Fish and Wildlife Resources – Wildlife	Surface disturbing and disruptive activities within big game crucial winter range will not be allowed during the period of November 15 to April 30 (Maps 2-53, 2-54, and 2-55).	RFO ROD p. 2-53	BLM RMP
1185	Fish and Wildlife Resources – Wildlife	Surface disturbing and disruptive activities will be managed, on a case-by-case basis, in identified big game migration and transitional ranges to maintain their integrity and function for big game species in these areas.	RFO ROD p. 2-54	BLM RMP



**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1186	Fish and Wildlife Resources – Wildlife	Prohibit surface-disturbing and disruptive activities within identified big game crucial winter range (Maps 50-54) from November 15 to April 30 and within identified big game parturition areas (Maps 50-54) from May 1 to June 30 unless an exception, waiver, or modification is granted by the AO. Authorize exceptions for reclamation seeding when appropriate.	LFO ROD #4061	BLM RMP
1187	Fish and Wildlife Resources – Wildlife	Surface disturbing and disruptive activities within identified big game parturition areas will not be allowed during the period of May 1 to June 30 (Maps 2-55 and 2-56).	RFO ROD p. 2-53	BLM RMP
1188	Fish and Wildlife Resources – Wildlife	Avoid authorizing road development in big game crucial winter range and parturition areas.	LFO ROD #4069	BLM RMP
1189	Fish and Wildlife Resources – Wildlife	Minimize adverse impacts to fish and wildlife during the life of projects through project placement and maintenance of connectivity between large contiguous blocks of undisturbed habitat in cooperation with interested stakeholders. Require seasonal restrictions or other identified mitigation as needed to minimize impacts to migratory birds and their habitats protected by the Migratory Bird Treaty Act.	LFO ROD #4034 and 4077	BLM RMP
1190	Fish and Wildlife Resources – Wildlife	Prohibit surface-disturbing and disruptive activities within ¾ mile of active raptor nests, except ferruginous hawk nests where surface-disturbing and disruptive activities are prohibited within 1 mile, during the following time periods: <ul style="list-style-type: none"> <li>February 1 to July 31 for all raptors except northern goshawk and burrowing owl</li> <li>April 1 to August 31 for northern goshawk</li> <li>April 1 to September 15 for burrowing owl</li> </ul> See Decision Record 4093 for management of bald eagle nests. Distances and dates may vary based on raptor species, chick fledging, topography, and other pertinent factors.	LFO ROD #4071	BLM RMP
1191	Fish and Wildlife Resources – Wildlife	Avoid surface disturbance or occupancy within a ½-mile buffer of raptor nests, except for the species listed below, for which a ¼-mile buffer will be required: <ul style="list-style-type: none"> <li>Red-tailed hawk</li> <li>Swainson's hawk</li> <li>American kestrel</li> <li>Osprey</li> <li>Great horned owl</li> </ul>	CFO ROD #4047	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		<ul style="list-style-type: none"> <li>• Long-eared owl</li> <li>• Northern saw-whet owl</li> <li>• Common barn owl</li> <li>• Western screech owl</li> </ul> <p>The seasonal restriction will be February 1 to July 31, or until young birds have fledged (TLS).</p>		
1192	Fish and Wildlife Resources – Wildlife	To protect special status raptor nesting habitats, activities or surface use will not be allowed from February 1st through July 31st within certain areas (TLS). The BLM AO, who will consider topography and special status raptor prey (excluding bald eagles) habitats surrounding the nest site will determine the size of a buffer zone on a case-by-case basis. Usually the buffer zone will be ¼ to ½ mile.	CFO ROD #4058	BLM RMP
1193	Fish and Wildlife Resources – Wildlife	<p>Surface disturbing and disruptive activities potentially disruptive to nesting raptors are prohibited within the following distances during the following time periods:</p> <ul style="list-style-type: none"> <li>• 1-mile buffer: Golden eagle, ferruginous hawk</li> <li>• Three-quarter-mile buffer: All others <ul style="list-style-type: none"> <li>o February 1 – July 15: Golden eagle, barn owl, red-tailed hawk, great-horned owl, other raptors</li> <li>o April 1 – July 31: Osprey, merlin, sharp-shinned hawk, kestrel, prairie falcon, northern harrier, Swainson’s hawk, Cooper’s hawk</li> <li>o March 1 – July 31: Short-eared owl, long-eared owl, ferruginous hawk, peregrine falcon, screech owl</li> <li>o April 15 – September 15: Burrowing owl</li> <li>o April 1 – August 31: Goshawk</li> </ul> </li> </ul>	RFO ROD p. 2-53	BLM RMP
1194	Fish and Wildlife Resources – Wildlife	Implement conservation measures, terms and conditions (T&C), appropriate BMPs, Required Design Features and reasonable and prudent measures within existing state programmatic biological opinions for the bald eagle. Surface-disturbing and disruptive activities are prohibited within 1 mile of a bald eagle nest from February 1 to August 15.	LFO ROD #4093	BLM RMP
1195	Fish and Wildlife Resources – Wildlife	Prohibit surface development on public lands in an area from ½- to 1-mile of known or discovered bald eagle nests. The specific distance and dimensions of the area on which surface development will be prohibited will be determined on a case-by-case basis after consultation with the USFWS in accordance with the ESA.	CFO ROD #4013	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1196	Fish and Wildlife Resources – Wildlife	To provide for long-term protection of artificial nesting structure sites, a combination of NSO and TLS buffer zones will be applied around the nesting structures. The TLS restriction will be from February 1st through July 31st, or until the young fledge. For ferruginous hawk artificial nesting structures, apply a ½-mile NSO buffer with an additional ½-mile seasonal buffer (total of a 1-mile buffer). For golden eagle artificial nesting structures, apply a ½-NSO buffer without an additional seasonal buffer (total ½- mile buffer). This restriction is intended to preclude the placement of permanent facilities within the NSO buffers.	CFO ROD #4057	BLM RMP
1197	Fish and Wildlife Resources – Wildlife	Well locations, roads, ancillary facilities, and other surface structures requiring a repeated human presence will not be allowed within 825 feet of active raptor nests (ferruginous hawks, 1,200 feet). Distance may vary depending on factors such as nest activity, species, natural topographic barriers, and line-of-sight distances.	RFO ROD p. 2-53	BLM RMP
1198	Fish and Wildlife Resources – Wildlife	Avoid surface-disturbing activities in occupied white-tailed prairie dog colonies where possible.	LFO ROD #4092	BLM RMP
1199	Fish and Wildlife Resources – Wildlife	Surface-disturbing and disruptive activities should be designed in a manner that avoids prairie dog towns and complexes (CSU). Where this is impractical, the disturbance should be located in a manner where it will have the least amount of impact to prairie dogs.	CFO ROD #4060	BLM RMP
1200	Fish and Wildlife Resources – Wildlife	Surface disturbing and disruptive activities in white-tailed and black-tailed prairie dog towns will be avoided.	RFO ROD p. 2-55	BLM RMP
1201	Fish and Wildlife Resources – Wildlife	If prairie dog towns/complexes suitable as black-footed ferret habitat are present, attempts will be made to avoid locating surface disturbing activities within 164 feet (50 meters) of a town. If a black-footed ferret non-block cleared town/complex cannot be avoided, then a black-footed ferret survey is required (Appendix 14).	RFO ROD p. 2-54	BLM RMP
1202	Fish and Wildlife Resources – Wildlife	Prohibit surface-disturbing and disruptive activities within ¼ mile of identified bat maternity roosts and hibernation areas that would adversely impact bats and their habitat.	LFO ROD #4095	BLM RMP
1203	Fish and Wildlife Resources – Wildlife	For the protection of reptiles and their habitat, prohibit surface-disturbing activities within 200 feet of identified hibernacula (den) sites.	LFO ROD #4057	BLM RMP
1204	Fish and Wildlife Resources – Wildlife	Any action that would result in stream channel instability, erosion, and sedimentation within known Western boreal toad habitat will be avoided.	RFO ROD p. 2-55	BLM RMP
1205	Fish and Wildlife Resources – Wildlife	To minimize incidental harm to wildlife, project personnel (including contractors) will be instructed on applicable wildlife laws and penalties	Not applicable	Cooperating Agency Input

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		associated with unlawful take and harassment, general wildlife conservation practices including no feeding of or collecting wildlife for pets, and measures to minimize vehicle collisions with wildlife. Pets will not be allowed on job sites in order to minimize harassment or killing of wildlife and to prevent the introduction of destructive domestic animal diseases to native wildlife populations.		
1206	Fish and Wildlife Resources – Fish	Apply timing limitations to surface-disturbing activities within water channels that will adversely affect spawning, egg incubation, and fry areas in fish-bearing streams (Map 17). Surface-disturbing activities are prohibited from March 15 to July 31 to protect fish that spawn in the spring and from September 15 to November 30 to protect fish that spawn in the fall. Dates may vary by species and location.	LFO ROD #4053	BLM RMP
1207	Special Status Species	Develop site-specific measures for BLM-authorized activities to protect threatened, endangered, and sensitive species. Reduce the footprint of development and facilities to the smallest practical to protect special status species and their habitat. Incorporate Required Design Features and BMPs such as those identified in Appendix E (p. 187) as Conditions Of Approvals (COAs) as appropriate for authorized activities to address adverse impacts to special status species.	LFO ROD #4076	BLM RMP
1208	Special Status Species	NSO or use is allowed on designated critical habitat for threatened or endangered species.  Areas known or suspected to contain essential habitat for special status species will be subject to a CSU restriction, requiring the proponent to conduct inventories or studies to verify the presence or absence of special status species.	CFO ROD #4015	BLM RMP
1209	Special Status Species	Surface disturbing and disruptive activities that would potentially affect the habitat of Special Status Species will be intensively managed on a case-by-case basis (Appendices 1, 10, and 15).	RFO ROD p. 2-54	BLM RMP
1210	Special Status Species	Surface disturbing and disruptive activities will be intensively managed to minimize impacts on identified crucial habitat for sensitive species for the purpose of protecting these species and their associated habitats (Appendices 1 and 15).	RFO ROD p. 2-55	BLM RMP
1211	Special Status Species – Plants	Apply specific measures to protect known special status plant populations from BLM-authorized activities and motorized travel on a case-by-case basis.	LFO ROD #4082	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1212	Special Status Species – Plants	On a case-by-case basis, require inventory of potential habitats for BLM sensitive plant species prior to authorizing an activity. If a sensitive species is present, apply appropriate protective measures where possible.	LFO ROD #4083	BLM RMP
1213	Special Status Species – Wildlife	Prohibit surface-disturbing or surface occupancy on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse (GRSG) leks in Core Area and on or within a 0.25-mile radius of the perimeter of occupied Greater Sage-Grouse leks outside Core Area (Map 24).	LFO ROD #4104	BLM RMP
1214	Special Status Species – Wildlife	Areas Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface disturbance or occupancy within ¼ mile of the perimeter of occupied sage-grouse leks.	CFO ROD #4054	BLM RMP
1215	Special Status Species – Wildlife	Surface disturbing activities or occupancy are prohibited on and within ¼ mile of the perimeter of an occupied Greater Sage-Grouse or sharp-tailed grouse lek (Map 3-13).	RFO ROD p. 2-55	BLM RMP
1216	Special Status Species – Wildlife	Sage-grouse leks inside Priority Habitat Management Areas (PHMAs): Surface occupancy and surface disturbing activities will be prohibited on or within a 0.6 mile radius of the perimeter of occupied sage-grouse leks (Map 2-8). The AO may grant an exception if an environmental record of review determines that the action, as proposed or conditioned, will not impair the function or utility of the site for the current or subsequent seasonal habitat, life-history, or behavioral needs of GRSG.	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 5 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1217	Special Status Species – Wildlife	Sage-grouse leks outside PHMAs: Surface occupancy and surface disturbing activities will be prohibited on or within a 0.25 mile radius of the perimeter of occupied sage-grouse leks (Map 2-8). The AO may grant an exception if an environmental record of review determines that the action, as proposed or conditioned, will not impair the function or utility of the site for the current or subsequent seasonal habitat, life-history, or behavioral needs of GRSG.	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 6 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1218	Special Status Species – Wildlife	In Core Area, keep any new roads or road upgrades 1.9 miles from the perimeter of the lek.	LFO ROD #4104	BLM RMP
1219	Special Status Species – Wildlife	Core Area: Prohibit disruptive activities between 6 p.m. and 8 a.m. from March 1 to May 15 on or within a 0.6-mile radius of the perimeter of occupied Greater Sage-Grouse leks in Core Area (Map 65).	LFO ROD #4107	BLM RMP
1220	Special Status Species – Wildlife	Avoid human activity between 8 p.m. and 8 a.m. from March 1 to May 15 (TLS) within ¼ mile of the perimeter of occupied sage-grouse leks.	CFO ROD #4054	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1221	Special Status Species – Wildlife	Disruptive activities are prohibited between 6:00 p.m. and 9:00 a.m. from March 1 to May 20 on and within ¼ mile of the perimeter of an occupied Greater Sage-Grouse or sharp-tailed grouse lek.	RFO ROD p. 2-55	BLM RMP
1222	Special Status Species – Wildlife	Core Area: Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 in Core Area.  Outside of Core Area: Prohibit surface-disturbing and/or disruptive activities from March 15 to June 30 within 2 miles of the perimeter of occupied leks (Map 65).  Where credible data support different timeframes for these seasonal restrictions, dates may be expanded 14 days prior to or subsequent to the above dates.	LFO ROD #4105	BLM RMP
1223	Special Status Species – Wildlife	Surface disturbance or disruption defined as notice-level activity pursuant to 43 CFR 3809.21 in Core Area during the period March 15 to June 30 is considered to be unnecessary or undue degradation unless the proponent is able to establish that it is not, based on site-specific information.	LFO ROD #4106	BLM RMP
1224	Special Status Species – Wildlife	Areas Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface-disturbing and disruptive activities in suitable sage-grouse nesting and early brood-rearing habitats within 2 miles of an occupied lek, or in identified sage-grouse nesting and early brood-rearing habitats outside the 2-mile buffer from March 15 to July 15 (TLS).	CFO ROD #4055	BLM RMP
1225	Special Status Species – Wildlife	Nesting/early brood-rearing habitat: Avoid surface disturbing and disruptive activities, geophysical surveys, and organized recreational activities (events) that require a special use permit in suitable Greater Sage-Grouse and sharp-tailed grouse nesting and early brood rearing habitat within 2 miles of the perimeter of an occupied Greater Sage-Grouse lek, and within 1 mile of the perimeter of a sharp-tailed grouse lek, or in identified Greater Sage-Grouse and sharp-tailed grouse nesting and early brood rearing habitat, from March 1 to July 15.	RFO ROD p. 2-55	BLM RMP
1226	Special Status Species – Wildlife	Sage-grouse breeding, nesting, and early brood-rearing habitat inside PHMAs (core only): Surface disturbing and/or disruptive activities will be prohibited from March 15 to June 30 to protect sage-grouse breeding, nesting, and early brood rearing habitat. This timing limitation will be applied throughout the PHMAs (core only). Activities in unsuitable habitats will be evaluated under the exception and modification criteria and shall be allowed on a case by case basis.  Where credible data support different timeframes for this seasonal	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 7 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		restriction, dates may be expanded by up to 14 days prior to or subsequent to the above dates.		
1227	Special Status Species – Wildlife	Sage-grouse breeding, nesting, and early brood-rearing habitat outside PHMAs: Surface disturbing and/or disruptive activities will be prohibited from March 15 to June 30 to protect sage-grouse nesting and early brood rearing habitats within 2 miles of the lek or lek perimeter of any occupied lek located outside PHMAs. Where credible data support different timeframes for this restriction, dates can be shifted by 14 days prior or subsequent to the above dates.	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 9 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1228	Special Status Species – Wildlife	Core Area: In Greater Sage-Grouse Core Area, limit the density of disturbances to an average of one oil and gas or mining location per 640 acres. The one location and cumulative value of existing disturbances will not exceed 5% of habitat. Utilize the most current Greater Sage-Grouse density disturbance process or other state and/or federal agreed-upon process for compliance evaluations.	LFO ROD #4109	BLM RMP
1229	Special Status Species – Wildlife	If the new disturbance for a ROW in Greater Sage-Grouse Core Area coupled with existing disturbance would exceed 5% (see current guidance with respect to disturbance calculations), then additional effective mitigation is necessary to offset the resulting loss of Greater Sage-Grouse habitat. Interim reclamation following construction of the ROW and final reclamation following the relinquishment of the ROW will ensure reestablishment of the pre-disturbance Greater Sage-Grouse habitat, with the reclamation bond amount set in consideration of this reclamation obligation.	LFO ROD #4110	BLM RMP
1230	Special Status Species – Wildlife	Prohibit surface-disturbing and disruptive activities in Greater Sage-Grouse winter concentration areas, as they are identified, from December 1 to March 14 unless data indicate a date modification is necessary to better protect wintering Greater Sage-Grouse.	LFO ROD #4108	BLM RMP
1231	Special Status Species – Wildlife	In PHMAs (core only), the density of disturbance of an energy or mining facility (Appendix D) will be limited to an average of one site per square mile (640 acres) within the Wyoming Density and Disturbance Calculation Tool (DDCT), subject to valid existing rights. The one location and cumulative value of existing disturbances will not exceed 5% of suitable habitat of the DDCT area. Inside PHMAs, all suitable habitat disturbed (any program area) will not exceed 5% within the DDCT area using the DDCT process.	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 2 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1232	Special Status Species – Wildlife	Areas Outside of Bates Hole and Fish Creek/Willow Creek: Avoid surface-disturbing and disruptive activities in sage-grouse winter habitats from November 15 to March 14 (TLS).	CFO ROD #4056	BLM RMP
1233	Special Status Species – Wildlife	Surface disturbing and disruptive activities potentially disruptive to delineated Greater Sage-Grouse and sharp-tailed grouse winter concentration areas are prohibited during the period of November 15 to March 14 for the protection of Greater Sage-Grouse and sharp-tailed grouse winter concentration areas.	RFO ROD p. 2-55; p. 2-66	BLM RMP
1234	Special Status Species – Wildlife	In Core Area, major overhead powerlines will not be authorized unless within 0.5 mile of an existing 115 kilovolt or greater powerline or in a designated corridor authorized for overhead powerlines. Distribution lines may be authorized when adequately mitigated to protect Greater Sage-Grouse and the AO determines that overhead installation is the action alternative with the fewest adverse impacts. Mitigation will be considered adequate if constructed at least 0.6 mile from the lek perimeter with appropriate timing constraints and installation of raptor deterrents.	LFO ROD #4111	BLM RMP
1235	Special Status Species – Wildlife	New permanent, high-profile structures within Greater Sage-Grouse nesting habitat will be allowed on a case-by-case basis. Require the installation of anti-perching devices on appropriate structures to reduce predation opportunities.	LFO ROD #4116	BLM RMP
1236	Special Status Species – Wildlife	High-profile structures (e.g., buildings, storage tanks, overhead powerlines, wind turbines, towers, windmills) will be authorized on a case-by-case basis from ¼ mile to 1 mile of an occupied Greater Sage-Grouse and sharp-tailed grouse lek.	RFO ROD p. 2-55	BLM RMP
1237	Special Status Species – Wildlife	Within PHMAs, specific to management for GRSG, all RMPs are amended as follows: Maintenance/replacement of existing structures will be allowed subject to valid and existing rights. Upgrades will be considered, subject to mandatory RDFs (Appendix C). Existing guy wires shall be removed or appropriately marked with bird flight diverters to make them more visible to sage-grouse in flight. Power lines (distribution and transmission) will be designed to minimize wildlife related impacts and constructed to the latest APLIC standards.	2015 Wyoming Greater Sage-Grouse Amendments MD LR 4 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1238	Special Status Species – Wildlife	Limit noise sources to 10 decibels with an A-weighted scale above natural ambient noise measured at the perimeter of occupied Greater Sage-Grouse leks from March 1 to May 15, unless scientific findings indicate a different	LFO ROD #4117	BLM RMP



Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		noise level is appropriate. In addition, limit noise sources in other important Greater Sage-Grouse habitats if research and/or policy indicate the need.		
1239	Special Status Species – Wildlife	New project noise levels, either individual or cumulative, should not exceed 10 dBA (as measured by L50) above baseline noise at the perimeter of the lek from 6:00 pm to 8:00 am during the breeding season (March 1 to May 15). Specific noise protocols for measurement and implementation will be developed as additional research and information emerges.	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 12 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1240	Special Status Species – Wildlife	Allow above ground low voltage utility lines or require burying lines in Greater Sage-Grouse, prairie dog, mountain plover, and pygmy rabbit habitats on a case-by-case basis. Evaluate and take advantage of opportunities such as the renewal of existing ROWs to remove or modify existing powerlines, prioritizing Greater Sage-Grouse Core Area.	LFO ROD #4119	BLM RMP
1241	Special Status Species – Wildlife	Placement of power poles within prairie dog towns will be avoided; however, in the event that power poles are required to be placed within these towns, raptor anti-perch devices will be required.	RFO ROD p. 2-55	BLM RMP
1242	Special Status Species – Wildlife	Surface occupancy or use within ¼ mile of a sharp-tailed grouse strutting/dancing ground will be restricted or prohibited unless the operator/proponent and the AO arrive at an acceptable plan for mitigation of anticipated impacts (CSU).	CFO ROD #4045	BLM RMP
1243	Special Status Species – Wildlife	Surface disturbing activities or occupancy are prohibited on and within ¼ mile of the perimeter of an occupied sharp-tailed grouse lek (Map 3-13).	RFO ROD p. 2-55	BLM RMP
1244	Special Status Species – Wildlife	No surface use is allowed within 1¼ miles from the ¼ mile protection zone between March 1 and June 15 so that the nesting area around the sharp-tailed grouse strutting/dancing ground can be protected. The AO may authorize exceptions to the time and distance limitations (TLS) in any particular year.	CFO ROD #4046	BLM RMP
1245	Special Status Species – Wildlife	In undertaking BLM management actions, and, consistent with valid existing rights and applicable law, in authorizing third-party actions that result in habitat loss and degradation in PHMAs, the BLM will require and ensure mitigation that provides a net conservation gain to the species including accounting for any uncertainty associated with the effectiveness of such mitigation. This will be achieved by avoiding, minimizing, and compensating for impacts by applying beneficial mitigation actions. In Wyoming, the USFWS has found that “the core area strategy, if implemented by all landowners via regulatory mechanism, would provide adequate protection for sage-grouse and their habitats in the state.” The BLM will implement actions to achieve the goal of net conservation gain consistent with the	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 4 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		Wyoming Strategy (EO2015-4) that includes “compensatory mitigation as a strategy that should be used when avoidance and minimization are inadequate to protect Core Population Area Greater sage-grouse.”		
1246	Special Status Species – Wildlife	<p>The GRSG adaptive management plan (Appendix D) provides a means of addressing and responding to unintended adverse impacts to GRSG and its habitat will be addressed before consequences become severe or irreversible. The Wyoming GRSG Approved RMP Amendment will include the requirement for projects requiring an Environmental Impact Statement to develop adaptive management strategies in support of the population management objectives for GRSG set by the State of Wyoming. Wyoming ADPPs will include an adaptive management plan, as reviewed by the BLM WO, Solicitor (SOL), and USFWS, which includes: Upon determination that a hard trigger is tripped, the BLM will immediately defer issuance of discretionary authorizations for new actions for a period of 90 days. In addition, within 14 days of a determination, the Adaptive Management Working Group will convene to develop an interim response strategy and initiate an assessment to determine the causal factors.</p> <p>Adaptive management triggers are essential for identifying when potential management changes are needed in order to continue meeting GRSG conservation objectives. With respect to sage-grouse, all regulatory entities in Wyoming, including the BLM, use soft and hard triggers. Soft and hard triggers are focused on three metrics: 1) number of active leks, 2) acres of available habitat, and 3) population trends based on annual lek counts.</p> <p>In making amendments to this plan, the BLM will coordinate with the USFWS as the BLM continues to meet its objective of conserving, enhancing and restoring GRSG habitat by reducing, minimizing or eliminating threats to that habitat. The hard and soft trigger data will be analyzed as soon as it becomes available after the signing of the ROD and then at a minimum, analyzed annually thereafter.</p>	2015 Wyoming Greater Sage-Grouse Amendments MD SSS 13 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1247	Special Status Species – Wildlife	<p>Within PHMAs, specific to management for GRSG, all RMPs are amended as follows:</p> <p>In cases where federal oil and gas leases have been issued with stipulations varying from those in Appendix B for the protection of sage-grouse or their habitats, as provided in the applicable RMP decision, as revised or amended, their inclusion as APD COAs will be considered when approving exploration and development activities through completion of the environmental record of review (43 CFR 3162.5 and 36 CFR 228.108), including appropriate</p>	2015 Wyoming Greater Sage-Grouse Amendments MD MR 3 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		<p>documentation of compliance with NEPA.</p> <p>Overall consideration shall be given to minimizing the impact to sage-grouse through a project design that avoids, minimizes, reduces, rectifies, and/or adequately compensates for direct and indirect impacts to PHMAs or use and includes applicable and technical COAs. Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas. For proposed operations in PHMAs, the Surface Use Plan of Operations (see 43CFR 3162.3-1(f)) shall address, at a minimum, the anticipated noise, density and amount of disturbance, mechanical movement (e.g., pump jacks), permanent and temporary facilities, traffic, phases of development over time, offsite mitigation, and expected periods of use associated with the proposed project. Seasonal habitats or project features related to potential sage-grouse impacts that are not addressed in the Surface Use Plan of Operations based on site-specific or project-specific considerations shall be noted in the project file, along with a rationale for not including them.</p> <p>In this process the BLM will evaluate, among other things:</p> <ul style="list-style-type: none"> <li>• Whether the conservation measure is “reasonable” (43 CFR 3101.1-2) and consistent with valid existing rights</li> <li>• Whether the action is in conformance with the approved Land Use Plan; and the effectiveness of the proposed mitigation measures.</li> </ul> <p>The BLM will work with project proponents in these situations to promote measurable sage-grouse conservation objectives such as, but not limited to, consolidation of project related infrastructure to reduce habitat fragmentation and loss and to promote effective conservation of seasonal habitats and PHMAs (connectivity only) that support population management objectives set by the state.</p> <p>The BLM will continue to work with project proponents and the WGFD to site their projects in locations that meet the purpose and need for their project, but have been determined to contain the least sensitive habitats (based on vegetation, topography, or other habitat features) and resources whether inside or outside of PHMAs (utilizing DDCT analysis process). Valid existing rights will be recognized and respected.</p>		
1248	Special Status Species – Wildlife	Where the federal government owns the mineral estate, and the surface is in non-federal ownership, apply the same stipulations, COAs, and/or conservation measures and RDFs applied if the mineral estate is developed	2015 Wyoming Greater Sage-Grouse Amendments MD MR 10 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		on BLM-administered lands in that management area, to the maximum extent permissible under existing authorities, and in coordination with the landowner.		
1249	Special Status Species – Wildlife	Within PHMAs where the federal government owns the surface and the mineral estate is in non-federal ownership, apply appropriate surface use COAs, stipulations, and mineral RDFs through ROW grants or other surface management instruments, to the maximum extent permissible under existing authorities, in coordination with the mineral estate owner/lessee.	2015 Wyoming Greater Sage-Grouse Amendments MD MR 11 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1250	Special Status Species – Wildlife	Exceptions waivers, and modifications to lease stipulations, COAs, and T&C, for sage-grouse will continue to be considered on a case-by-case basis consistent with approved Land Use Plans and other BLM policy and regulations as they relate to exceptions within PHMAs and General Habitat Management Areas.	2015 Wyoming Greater Sage-Grouse Amendments MD MR 19 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1251	Special Status Species – Wildlife	Specific to management for GRSG, all RMPs are amended as follows: PHMAs will be managed as ROW avoidance areas for new ROW or Special Use Authorization (SUA) permits (Map 2-7). Within PHMAs where new ROWs/SUAs are necessary, new ROWs/SUAs will be located within designated RMP corridors or adjacent to existing ROWs/SUAs where technically feasible. Subject to valid existing rights including non-federal land inholdings, required new ROWs/SUAs will be located adjacent to existing ROWs/SUAs or where it best minimizes sage-grouse impacts. Consider the likelihood of development of not-yet-constructed surface-disturbing activities, as defined in Table 2 of the Monitoring Framework (Appendix D) under valid existing rights.	2015 Wyoming Greater Sage-Grouse Amendments MD LR 1 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1252	Special Status Species – Wildlife	Specific to management for Greater Sage-Grouse, all RMPs are amended as follows: Within General Habitat Management Areas where new ROWs/SUAs are necessary, new ROWs/SUAs will be co-located within existing ROWs/SUAs where technically feasible. Appropriate sage-grouse seasonal timing constraints will be applied.	2015 Wyoming Greater Sage-Grouse Amendments MD LR 2 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1253	Special Status Species – Wildlife	Within PHMAs, specific to management for GRSG, all RMPs are amended as follows: New Electric Distribution Lines (less than 115 kilovolt [kV]): New electric distribution lines will be buried where feasible and economically feasible. If not economically feasible, distribution lines may be authorized when effectively designed/mitigated to protect GRSG and the AO determines that	2015 Wyoming Greater Sage-Grouse Amendments MD LR 3 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		<p>overhead installation is the action alternative with the fewest adverse impacts while still meeting the project need. Agricultural and residential lines will be considered to be adequately mitigated for GRSG if constructed at least 0.6 mile from the lek perimeter with appropriate timing constraints and constructed to the latest APLIC guidance. These ROW authorizations will be subject to approval by the State Director.</p> <p>Pipelines: New pipelines through PHMAs will be allowed: (1) within an RMP corridor currently authorized for that use or designated through future RMP amendments; or (2) constructed in or adjacent to existing utilities (buried and above-ground) or roads. Pipelines constructed in RMP corridors or adjacent to existing utilities or roads will require completion of a DDCT analysis for baseline data collection but the project is not required to meet the threshold of 5%. However, within 6 months of the completion of construction, the project proponent will provide the AO with as-built drawings so that total disturbance within core area can be calculated annually.</p>		
1254	Special Status Species – Wildlife	New local or collector roads (as defined in BLM Manual 9113) will be avoided within 1.9 miles of the perimeter of occupied sage-grouse leks within PHMAs. All new roads will be prohibited within 0.6 miles of the perimeter of occupied sage-grouse leks within PHMAs.	2015 Wyoming Greater Sage-Grouse Amendments MD Travel and Transportation Management 3 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1255	Special Status Species – Wildlife	<p>Specific to management for GRSG or PHMAs, all RMPs are amended as follows:</p> <p>In PHMAs, locate new roads that will have relatively high levels of activity (accessing multiple wells, housing development) greater than 1.9 miles from the perimeter of occupied GRSG leks. Locate new other roads used to provide facility site access and maintenance &gt;0.6 miles from the perimeter of occupied GRSG leks.</p>	2015 Wyoming Greater Sage-Grouse Amendments MD Travel and Transportation Management 6 (applies to CFO and RFO RMPs) <sup>1</sup>	BLM RMP
1256	Special Status Species – Wildlife	To protect mountain plover habitat, including a ¼-mile buffer, prohibit surface-disturbing and disruptive activities from April 10 to July 10 unless surveys indicate the absence of breeding/nesting mountain plovers.	LFO ROD #4094	BLM RMP
1257	Special Status Species – Wildlife	Surface disturbing and disruptive activities located in potential mountain plover habitat are prohibited during the reproductive period of April 10 to July 10 for the protection of breeding and nesting mountain plover. Additional protection measures will be applied if this area is later determined to be within occupied habitat (Appendix 16). Occupied habitat is defined as areas where broods and adults have been found.	RFO ROD p. 2-52	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1258	Special Status Species – Wildlife	Prohibit surface-disturbing activities within 200 feet of occupied pygmy rabbit habitat.	LFO ROD #4088	BLM RMP
1259	Special Status Species – Wildlife	Surface disturbing and disruptive activities potentially disruptive to Western yellow-billed cuckoos are prohibited within ½ mile of identified habitat from April 15 to August 15 for the protection of nesting Western yellow-billed cuckoos.	RFO ROD p. 2-54	BLM RMP
1260	Special Status Species – Wildlife	Powerlines shall be constructed to conform to the Avian Power Line Interaction Committee's <i>Suggested Practices for Avian Protection on Powerlines: the State of the Art in 2006</i> and <i>Reducing Avian Collisions with Power Lines: The State of the Art in 2012</i> .	Not applicable	Cooperating Agency Input
1261	Special Status Species – Fish	Avoid activities that contribute sediment to waterbodies that support Yellowstone cutthroat trout, burbot, and sauger unless determined that additional sediment will not harm species or adequate mitigations can be applied.	LFO ROD #4087	BLM RMP
1262	Cultural Resources	<p>Authorize National Historic Trail (NHT) crossings by new major utility systems only in following designated utility corridors:</p> <ul style="list-style-type: none"> <li>• Beaver Creek Corridor (Map 108). This corridor is for below ground ROW only.</li> <li>• Pathfinder Corridor (Map 108). This corridor is for below ground ROW only.</li> <li>• Bison Basin Corridor (Map 108). This corridor is for below ground lines only, and must follow the criteria listed in Appendix C (p. 165).</li> <li>• Lost Creek Corridor (Map 108). This corridor is for above and below ground ROW.</li> </ul> <p>For all of the above designated corridors, where a proposed project is close enough to adversely impact the NHTs, the project shall employ every feasible practice to limit disturbance to as small an area as possible. Additional cost associated with these practices is not a basis for determining that the practices cannot be incorporated. These practices include, but are not limited to:</p> <ul style="list-style-type: none"> <li>• Reducing the amount of surface disturbance as much as possible;</li> <li>• Co-locating the project ROW unless the proponent can clearly demonstrate that it cannot be safely co-located</li> <li>• Confining new disturbance within existing disturbance areas, unless the proponent can clearly demonstrate that it cannot be safely confined</li> <li>• Locating the new project within or immediately adjacent to existing</li> </ul>	LFO ROD #7006	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		<p>disturbance zones, unless the proponent can clearly demonstrate why it cannot be done</p> <ul style="list-style-type: none"> <li>• Bore under high-quality ruts</li> <li>• Additional mitigation and BMPs will be developed in response to site-specific proposals.</li> </ul>		
1263	Cultural Resources	For the Cherokee Trail, Overland Trail, and RFO to Fort Washakie Road an area within ¼ mile of a cultural property or the visual horizon, whichever is closer, would be an avoidance area/buffer for surface disturbing and disruptive activities, if the setting contributes to National Register of Historic Places (NRHP) eligibility.	RFO ROD p. 2-13, 2-23, 2-75	BLM RMP
1264	Cultural Resources	A proposed plan is that an area within ¼ mile or the visual horizon of the trails, whichever is closer, would be open to oil and gas leasing with an NSO stipulation. Surface disturbing and disruptive activities on existing leases would be managed according to BMPs.	RFO ROD p. 2-75	BLM RMP
1265	Cultural Resources	<p>Mineral development in the established protection zones around the following sites:</p> <p>48FR301 (2,940 acres), 48FR311 (555 acres), 48FR3997 (1,045 acres), 48FR4070 (3,378 acres), 48FR4489 (930 acres), 48FR773 (588 acres), 48FR6125 (770 acres), (10,206 total acres) and new sites as they are identified and then verified by tribes and the BLM (collectively referred to as the Sites in this section), are managed with the following restrictions:</p> <ul style="list-style-type: none"> <li>• Open to oil and gas leasing subject to NSO stipulations</li> <li>• Closed to geophysical exploration</li> <li>• Closed to solid mineral leasing</li> <li>• Open to locatable minerals</li> <li>• Closed to salable minerals</li> </ul>	LFO ROD #5050	BLM RMP
1266	Cultural Resources	ROW management in the Sites is excluded to major ROWs and avoided for minor ROWs.	LFO ROD #5051	BLM RMP
1267	Cultural Resources	<p>NSO onsite and CSU within 300 feet of the following sites:</p> <p>48NA227, 48NA940, and 48NA84. Maintenance No. 2011-06; Three sites added; Hell Gap (48GO305) and Patten Creek (48PL32 &amp; 48PL68).</p>	CFO ROD #5009	BLM RMP
1268	Cultural Resources	<p>Mineral development in the Cedar Ridge Traditional Cultural Property (TCP) is managed as follows:</p> <ul style="list-style-type: none"> <li>• Open to oil and gas leasing subject to NSO stipulations</li> <li>• Closed to geophysical exploration</li> </ul>	LFO ROD #5024	BLM RMP

**Table F-1. Resource Protection Measures**

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		<ul style="list-style-type: none"> <li>• Closed to solid minerals leasing</li> <li>• Closed to locatable mineral entry in order to pursue a withdrawal</li> <li>• Closed to mineral material disposal</li> </ul>		
1269	Cultural Resources	<p>Mineral development in the Cedar Ridge periphery is managed as follows:</p> <ul style="list-style-type: none"> <li>• Open to oil and gas leasing subject to CSU stipulations</li> <li>• Open to geophysical exploration subject to CSU stipulations</li> <li>• Open to solid minerals leasing for 5 acres or less, subject to limits on surface use comparable to the CSU for oil and gas.</li> <li>• Open to mineral material disposals subject to limits on locations similar to a CSU stipulation for oil and gas</li> </ul>	LFO ROD #5025	BLM RMP
1270	Cultural Resources	<p>ROW management in the Cedar Ridge TCP is:</p> <ul style="list-style-type: none"> <li>• Excluded to major ROWs</li> <li>• Avoided for minor ROWs</li> </ul> <p>ROW management in the periphery is:</p> <ul style="list-style-type: none"> <li>• Avoided for major ROWs</li> <li>• Avoided for minor ROWs</li> </ul>	LFO ROD #5027	BLM RMP
1271	Cultural Resources	NSO or use is allowed in the TCP. Cedar Ridge TCP.	CFO ROD #7028	BLM RMP
1272	Cultural Resources	The Cedar Ridge periphery area is defined as the viewshed as far south as the Arminto/Lost Cabin Road and as far north as Badwater Road. Surface-disturbing activities in this area are subject to a CSU stipulation, restricting or prohibiting surface occupancy unless the proponent and surface management agency arrive at an acceptable plan for mitigation of impacts. Surface-disturbing activities will be minimized by using techniques such as directional drilling and well twinning wherever practicable in the periphery area.	CFO ROD #7029	BLM RMP
1273	Cultural Resources	<p>Inside DDAs, maintain and develop MOAs for Regional Historic Trail and Early Highways (RHT&amp;EHs) management within DDAs. Where MOAs are not developed, mineral and realty actions are managed with the standard protocol and NHPA measures (Map 28).</p> <p>Outside of DDAs, protect the foreground of RHT&amp;EHs up to 2 miles where setting is an important aspect of the integrity for the trail and use BMPs (Appendix E [p. 187]) to avoid or mitigate adverse effects. Pursue site-specific protection plans or MOAs to protect the setting. Oil and gas in the area within 2 miles of RHT&amp;EHs is open to leasing subject to CSU stipulations.</p>	LFO ROD #5018	BLM RMP



Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1274	Cultural Resources	<p>NHTs and Other Historic Trails Where Setting Does Not Contribute to NRHP Eligibility.</p> <ol style="list-style-type: none"> <li>Existing physical features and associated sites will be protected from physical impacts. There will be no surface disturbance on trail traces. As mapped in the CFO GIS database.</li> <li>CSU within ¼ mile or the visual horizon, whichever is closer to ensure that surface-disturbing activities avoid trail remains and the lands immediately surrounding them. The protective zones are as mapped in the CFO GIS database.</li> <li>ROW crossings at previously disturbed areas at right angles.</li> <li>The setting associated with these historic trails will be managed in accordance with objectives for the VRM Class established for the areas (as mapped in the Casper Field Office GIS database).</li> </ol> <p>Where Historic Setting Contributes to NRHP Eligibility.</p> <ol style="list-style-type: none"> <li>Existing physical features and associated sites will be managed so that the trail trace and associated sites will be protected from physical impacts.</li> <li>CSU will extend to the viewshed foreground (out to a maximum of 3 miles) or the visual horizon, whichever is closer to ensure that surface-disturbing activities avoid trail remains and the lands immediately surrounding them. The protective zones are as mapped in the Casper Field Office GIS database. Management guidelines are summarized below: <ul style="list-style-type: none"> <li>ROW crossing at previously disturbed areas at right angles</li> <li>Mineral leasing will continue with a CSU stipulation</li> <li>Fences and range improvements will be permitted if impacts mitigated.</li> </ul> </li> <li>The historic setting associated with these trails will be managed to maintain the existing character of the landscape. Accordingly, the viewshed foreground (out to a maximum of 3 miles) will be managed as follows: <ul style="list-style-type: none"> <li>VRM Class II</li> <li>Mineral leasing will continue with CSU stipulation.</li> </ul> </li> <li>NHTs will be managed as VRM Class II until inventories are completed. Segments not contributing overall eligibility will be managed as Class III.</li> </ol>	CFO ROD #7072	BLM RMP
1275	Visual Resources	Prohibit surface-disturbing activities within important scenic areas (VRM Classes I and II). Grant exceptions if it can be demonstrated through a visual simulation and contrast rating worksheet (from all key observation points	LFO ROD #5066	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
		within the area) that the project or identified mitigation will meet or exceed VRM Class I or II objectives. This restriction does not apply to temporary structures such as drilling rigs.		
1276	Visual Resources	Surface-disturbing activities within VRM Classes III and IV that cannot be seen from the Congressionally Designated Trails will be evaluated based on the VRM class designation at the site of the surface disturbance.  Surface-disturbing activities out of scale with the surrounding landscape that are within view of the Congressionally Designated Trails will be evaluated based on VRM Class II standards.	LFO ROD #5069	BLM RMP
1277	Visual Resources	Through consultation with the surface owner, if it is determined that visual values are a concern on split estate locations. The BLM will provide consultation to the surface owner on the visual resource management process which could result in additional visual resource mitigation measures.	Oakleaf 2014	LFO Policy
1278	Comprehensive Trails and Travel Management	Road density will be considered during the analysis process and during authorization of surface disturbing and disruptive activities (Appendix 26).	RFO ROD p. 2-46	BLM RMP
1279	Livestock Grazing	The proponent will designate a grazing contact to act as a liaison with grazing permittees in the area to facilitate proactive communications and provide coordination with permittees on fencing and other grazing concerns that may arise.	Not applicable	Cooperating Agency Input
1280	Livestock Grazing	The Companies will hold an annual meeting with the BLM livestock grazing permittees to discuss planned development in the coming year, any issues that need to be resolved, and BMPs the Companies will require of their employees and subcontractors to reduce conflicts with livestock grazing.	Not applicable	Cooperating Agency Input
1281	Rights-of-Way and Corridors	Major ROWs will not be authorized outside of designated corridors unless the proponent establishes that the siting in a designated corridor is not possible. Additional expense does not, by itself, render the location within a designated corridor “not possible.” Additional management prescriptions are found in the other sections including Special Designations, Wildlife and the National Trails Management Corridor. Minor ROWs outside of designated corridors are co-located in existing disturbance unless the proponent establishes that co-location is not possible or that the new location minimizes adverse impacts to other resources compared to co-location.	LFO ROD #6023	BLM RMP
1282	Rights-of-Way and Corridors	Manage 1,282,773 acres as ROW avoidance areas (Map 104). See Appendix C (p. 165) for avoidance criteria. Manage 567,476 acres as ROW exclusion areas (Map 104). Manage 543,961 acres as open to ROW (Map 104).	LFO ROD #6016	BLM RMP

Table F-1. Resource Protection Measures

Record #	Resource	Resource Protection Measure	Citation (if applicable)	Source
1283	Rights-of-Way and Corridors	When placement of a major facility within a designated corridor is not possible, and for smaller ROW facilities, placement will be adjacent to existing facilities or disturbances. Cross-country ROW placements will be allowed only when placement in a designated corridor or adjacent to an existing facility is not practical or feasible (from the ROD, resource management units 14, March 8, 2004 version).	CFO ROD #6072	BLM RMP
1284	Rights-of-Way and Corridors	Areas with important resource values will be avoided where possible in planning for new facility placement (600,290 acres). If it becomes necessary for facilities (i.e., linear ROWs) to be placed within avoidance areas, effects will be intensively managed. Avoidance and exclusion areas are identified on Map 2-33b and Table 2-5.	RFO ROD p. 2-18	BLM RMP

<sup>1</sup>Only applies to the CFO and RFO RMPs. If there are inconsistencies or discrepancies between the existing plans and the 2015 Wyoming Greater Sage-Grouse Amendments (BLM 2015), the more restrictive decision will be implemented.

%	percent	kV	kilovolt	ROD	Record of Decision
AO	Authorized Officer	LFO	Lander Field Office	ROW	Right-of-Way
APD	Application for Permit to Drill	MA	Management Action	SARA	Superfund and Reauthorization Act
APLIC	Avian Power Line Interaction Committee	MOA	Memorandum of Agreement	SHPO	State Historic Preservation Office
AQRV	Air Quality Related Value	NAAQS	National Ambient Air Quality Standards	SOL	Solicitor
BLM	Bureau of Land Management	NEPA	National Environmental Policy Act	SPCC	Spill Prevention, Control, and Countermeasure
BMP	Best Management Practices	NHPA	National Historic Preservation Act	SUA	Special Use Authorization
COA	Conditions of Approval	NHT	National Historic Trail	SWPPP	Stormwater Pollution Prevention Plan
CFO	Casper Field Office	NOx	Nitrogen Oxide	T&C	Terms and Conditions
CFR	Code of Federal Regulations	NRHP	National Register of Historic Places	T&E	Threatened and Endangered
CSU	Controlled Surface Use	NSO	No Surface Occupancy	TCP	Traditional Cultural Property
dBA	A-weighted Decibels	NTL	Notice to Lessee	TLS	Timing Limitation Stipulation
DDA	Designated Development Area	OSHA	Occupational Safety and Health Administration	U.S.	United States
DDCT	Wyoming Density and Disturbance Calculation Tool	PHMA	Priority Habitat Management Area	U.S.C.	United States Code
DEQ	Department of Environmental Quality	POD	Plan of Development	USFWS	U.S. Fish and Wildlife Service
DOT	Department of Transportation	PUP	Pesticide Use Proposal	VOC	Volatile Organic Compound
EPA	Environmental Protection Agency	RDF	Required Design Features	VRM	Visual Resource Management
ESA	Endangered Species Act	RFO	Rawlins Field Office	WAAQS	Wyoming Ambient Air Quality Standards
GIS	Geographic Information System	RHT&EH	Regional Historic Trail and Early Highway	WGFD	Wyoming Game and Fish Department
GRSG	Greater Sage-Grouse	RMP	Resource Management Plan	WO	Washington Office
H <sub>2</sub> S	Hydrogen Sulfide			WOGCC	Wyoming Oil and Gas Conservation Commission

## **2.0 FIELD OFFICE CHECKLISTS**

In addition to the RMP decisions identified in Table F-1, the LFO, CFO, and RFO RMPs identify RDFs and other BMPs that should be included in all BLM authorizations (e.g., Application for Permit to Drill or right-of-way [ROW] application). The BLM Lander and Casper Field Offices have developed checklists that field office staff use to ensure compliance with the RDFs and BMPs. Copies of these checklists are provided in the following sections. During the site-specific NEPA analysis of Applications for Permit to Drill or ROWs for the Moneta Divide Project, the BLM would use these, or updated checklists, to document compliance with the RMP list of RDFs and BMPs prior to authorizing surface-disturbing activity.

### **2.1 Lander Field Office**

The 2014 Lander ROD and Approved RMP identified RDFs that need to be included in every authorization. Some of these may be waived if the proponent can show that the protection is infeasible or should not be applied on a site-specific basis. Some of these protections have been incorporated in to oil and gas stipulations that will be applied to future leasing activities. If so, the Lander RMP has identified exception, waiver, and modification criteria that will be applied. The RDFs must be a part of every authorization in order to show compliance with the RMP (Table F-2). As such, these resource protections should be part of every alternative and are not considered “mitigation” or “operator committed protections.” Table F-3 includes a list of the RMP Decisions that must be considered before authorizing any federal action on BLM-managed lands.

In addition to the RDFs, the RMP identified other BMPs to consider on a site-specific basis. In the case of Greater Sage-Grouse protections, in order to provide regulatory certainty that the resource protection measures will be incorporated, the BMP must be required of every project. If any protection is not made a mandatory condition of approval, the NEPA document must clearly explain why with a justification supported by site-specific factors.

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Authorization contains a monitoring protocol to evaluate effectiveness.			
If development involves an oil and gas lease, are RDFs “reasonable”?			
If in Core Area, if development results in long-term loss of habitat, does mitigation have sufficient term to constitute replacement habitat?			
Is there a monitoring protocol to evaluate impacts to Greater Sage-Grouse?			
If mitigation is not in Core Area, is it in general sage-grouse habitat with the ability to increase Greater Sage-Grouse populations?			
Has the Bureau of Land Management (BLM) approved the proponent’s designated wildlife biologist to oversee compliance with resource protections?			
Does project design minimize or avoid impacts to Greater Sage-Grouse habitat or use?			
Is a phased approach with interim reclamation evaluated?			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

Best Management Practice (BMP) or Required Design Feature (RDF)	Analyzed in NEPA?	Incorporated?	Explanation
Have facilities been placed to minimize disruption to animal movement patterns and habitat connectivity?			
Is any portion that is located in Core Area in an area with the least harm to Greater Sage-Grouse?			
Are new developments co-locate with existing disturbance or where reclamation has not been fully achieved?			
Have facilities been designed to minimize impacts to Greater Sage-Grouse?			
Have moving facilities (such as pump jacks) or ones requiring human use be located in a manner to minimize impacts to Greater Sage-Grouse?			
Are compressor stations outside of priority habitat? Is noise directed towards priority habitat reduced?			
Is there a requirement to store refuse properly and remove it promptly?			
Have drilling mats and mats on roadways been considered to reduce vegetation disturbance?			
Have the number of tall facilities, distribution lines and other infrastructure been limited to the fewest needed?			
Have facilities such as tanks which could be used as predator perches been placed outside of Core Area?			
Are aboveground facilities required to have anti-perching and anti-nest devices?			
Have linear features been minimize and located in a way that would reduce disturbance and fragmentation?			
Are Greater Sage-Grouse safe fences required around sumps, pits, and other trenching?			
If powerlines are needed, evaluate whether the burying of the lines would outweigh any loss of habitat.			
Has the proponent shown that burying powerlines is not technically feasible?			
Are remote sensing devices required?			
Is there a plan to reduce traffic and human presence?			
Is covering all fluid containing pits and open tanks with 1.5 inch mesh size or less required?			
Is all residential development located out of Core Area?			
Are subsurface markers or buried plates, rather than above-ground dry hole markers required when the well is plugged and abandoned?			
<b>Reclamation</b>			
Are native shrubs on lands proposed to be disturbed unique and desirable for interim and final reclamation purposes? If so, require seeds be collected in the area and stored using the procedures of the Seeds of Success programs.			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Require seedlings or plugs of common dominant species locally propagated locally to be used in reclaimed areas and to expedite vegetation recovery.			
Maximize the area of interim reclamation on long-term access roads and well pads and other surface disturbance (cut-and-fill slopes, etc.).			
Identify areas of sustainable plant communities and populations appropriate for the project as sources for native plant material and manage for use in reclamation and restoration work. Prioritize native seed allocation for use in priority greater sage-grouse habitat in years when preferred native seed is in short supply.			
Utilize enhanced reclamation if needed to support more rapid interim and final reclamation including irrigation, mulching, soil amendments, and erosion blankets.			
When reseeding, use appropriate seed mixes and consider the use of appropriate subspecies of sagebrush seed. Continue to evaluate seed mixtures over time, considering potential changes in climate (Miller et al. 2011) when proposing seedlings are used. Consider seed collections from the warmer component within a species' current range for selection of native seed (Kramer and Havens 2009).			
Include reclamation or post-fire restoration objectives requiring that greater sage-grouse habitat needs are adequately addressed. Establish monitoring protocol to verify that the objectives are accomplished.			
Include Greater Sage-Grouse habitat parameters as defined by Connelly et al. (2000), Hagen et al. (2007), or if available, state greater sage-grouse conservation plans and appropriate local information in habitat restoration objectives. Make maintaining these objectives in priority greater sage-grouse habitat areas a high restoration priority.			
Identify and work with partners to increase native seed availability and work with plant material centers to develop new plant materials, especially the forbs needed to restore Greater Sage-Grouse habitat.			
Choose native plant seeds for vegetation treatments based on availability, adaptation (site potential), probability for success, and the vegetation management objectives for the area covered by the treatment. Prioritize native seed allocation for use in Core Area in years when preferred native seed is in short supply.			
Make reestablishment of sagebrush and desirable understory plant cover (relative to ecological site potential) a high priority for restoration efforts.			
Write specific vegetation objectives to reestablish sagebrush cover and desirable understory cover.			
Implement interim reclamation as soon as possible. Limit areas requiring long term reclamation to as small an area as possible. Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoiling, and revegetating cut-and-fill slopes.			
Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community.			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

Best Management Practice (BMP) or Required Design Feature (RDF)	Analyzed in NEPA?	Incorporated?	Explanation
<b>Impound Pond Design</b>			
Work with the Wyoming Department of Environmental Quality to limit surface discharge of water that has the potential of increasing production of mosquitoes and decreasing Greater Sage-Grouse habitat quality.			
Require permanent impound ponds if that would reduce the number of newly flooded sites which have the possibility of high mosquito production. Avoid flooding flat terrain or low lying areas.			
Design impound ponds to reduce attraction to breeding mosquitoes while considering attraction to other vectors of diseases such as blue tongue disease. Design parameters should include steepness of sides, avoidance of shallows less than 2 feet (60 centimeters), and reduction of rooted vegetation (both aquatic and uplands).			
Separate inflow and outflow areas to produce open water; avoid creating wetlands.			
Avoid down slope seepage or overflow (including from natural drainage). Line constructed ponds as necessary to avoid seepage. Prevent shallow surface inflow and accumulation of sediment that promotes aquatic vegetation through piping discharge into open water and lining channels.			
Line the overflow spillway with crushed rock, and construct the spillway with steep sides to preclude the accumulation of shallow water and vegetation.			
Design ponds to exclude livestock and grazing undulates that trample and disturb shorelines, enrich sediments with manure, and create hoof print pockets of water that are attractive to breeding mosquitoes.			
Treat waters with larvicides to reduce mosquito production where water occurs on the surface.			
<b>Roads</b>			
Utilize BMPs and designs described in the BLM Gold Book ( <i>Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development</i> ) for all projects involving construction of roads and other similar types of industrial surface disturbance.			
Locate roads to avoid important habitats for Greater Sage-Grouse and other wildlife. Construct, improve, and maintain access roads to minimize potential wildlife/vehicle collisions and facilitate wildlife movement through the Project Area.			
Apply dust abatement on roads, well pads, and other surface disturbances. Use of dust abatement with limited adverse impacts to vegetation, cultural resources, water quality, and other resources.			
Prior to authorizing a road, require the proponent to develop a transportation plan on a landscape scale so as to consider all parties who will be authorized to use the road.			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Allow route construction to realignments of existing designated routes if that realignment has a minimal impact on greater sage-grouse habitat, eliminates the need to construct a new road, or is necessary for motorist safety. Avoid new roads unless the proponent can demonstrate that new uses cannot be co-located with existing disturbance.			
Identify measures to reduce the use of motorized vehicles to reduce adverse impacts to wildlife.			
Design roads to minimize total disturbance to the smallest amount possible and to the lowest standard while meeting road objectives or purpose including safety. Establish speed limits that will reduce vehicle speed to reduce Greater Sage-Grouse mortality.			
If road crossings of linear water features (such as ephemeral, intermittent, and perennial streams) cannot be avoided, construct crossings to minimize impacts to the riparian-wetlands habitat. Usually this will mean crossing the feature at right angles. Temporary, portable bridges or armored low water crossings should be considered.			
Where new roads cannot be avoided, limit their use as much as possible including not making it part of the public road network or implementing seasonal closures. Restrict motorized vehicle use to authorized users using signage, gates, and other devices.			
Establish slow speed limits on BLM-administered roads or design roads for slower vehicle speeds to reduce Greater Sage-Grouse mortality and other wildlife conflicts.			
During travel management implementation, close and rehabilitate duplicate roads and rights-of-way (ROWs) no longer being utilized. When restoring original landform and establishing desirable vegetation, use appropriate seed mixtures or transplants as provided above and in Appendix B, Reclamation Objectives and Standards. Identify roads where the risk of vehicle or human-caused wildfires and the spread of invasive species into Greater Sage-Grouse habitats could be minimized by planting perennial vegetation (e.g., green-strips) paralleling road ROWs (this BMP could be applied to BLM linear ROW authorizations).			
<b>Fire</b>			
Prior to the fire season, provide Greater Sage-Grouse training to resource advisors. When periods of multiple fires, ensure line officers are involved in setting priorities including protection of Greater Sage-Grouse habitat. Provide training to fuels treatment personnel on Greater Sage-Grouse biology, habitat requirements, and identification of areas utilized locally.			



**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Develop site-specific greater sage-grouse reference information and resource materials containing maps, a list of resource advisors, contact information, local guidance, and other relevant information. Provide localized maps to dispatch offices and extended attack incident commanders for use in prioritizing wildfire suppression resources and designing suppression tactics. Involve state wildlife agency expertise in fire operations through: instructing resource advisors during preseason trainings; qualification as resource advisors; coordination with resource advisors during fire incidents; and contributing to incident planning with information such as habitat features or other key data useful in fire decision making.			
Continue to maintain information on wildfires occurring in Greater Sage-Grouse habitat. Document fire operation activities in Greater Sage-Grouse habitat for potential follow-up coordination activities.			
Locate wildfire suppression facilities (i.e., base camps, spike camps, drop points, staging areas, and heli-bases) in areas where physical disturbance to greater sage-grouse habitat can be minimized. These include disturbed areas, grasslands, near roads/trails, or in other areas where there is existing disturbance or minimal sagebrush cover.			
Where applicable, utilize retardant and mechanized equipment to minimize burned acreage in Core Area during an extended attack. Utilize retardant, mechanized equipment, and other available resources to minimize burned acreage during initial attack.			
Minimize burnout operations in Core Area or near a lek outside of Core Area (with input from the resource adviser) by constructing direct fireline whenever safe and practical to do so.			
As safety allows, conduct mop-up where the black adjoins unburned islands, dog legs, or other habitat features to minimize sagebrush loss.			
Avoid unnecessary cross-country vehicle travel during fire operations in greater sage-grouse habitat.			
Power-wash all firefighting vehicles, to the extent possible, including engines, water tenders, personnel vehicles, and all-terrain vehicles prior to deploying in or near Greater Sage-Grouse habitat areas to minimize spread of invasive plants.			
<b><i>Vegetative Treatment and Fuels Management</i></b>			
Design vegetation treatments in areas of high wildfire frequency to facilitate firefighter and public safety; reduce the risk of extreme fire behavior; and reduce the risk and rate of fire spread to Greater Sage-Grouse habitats while facilitating the restoration of key habitats.			
Design fuels treatment objectives to protect existing sagebrush ecosystems, modify fire behavior, restore native plants, and create landscape patterns that most benefit Greater Sage-Grouse habitat.			
Use fire prescriptions that minimize undesirable effects on vegetation or soils (e.g., minimize mortality of desirable perennial plant species and reduce risk of hydrophobicity). Where high-intensity fires may have caused hydrophobicity (repelling water), manage for the condition with rehabilitation efforts post-burning such as contour falling logs, raking burnt soil, mulching, check dams, etc.			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Incorporate roads and natural fuel breaks into fuel-break design.			
Power wash all vehicles and equipment involved in fuels management activities prior to entering the area to minimize the introduction of undesirable and/or invasive plant species.			
Outside of priority habitat, give priority for implementing sagebrush restoration projects that are adjacent to priority habitat.			
As funding and logistics permit, restore habitat to a species composition characterized by perennial grasses, forbs, and shrubs.			
Do not reduce sagebrush canopy cover to less than 15% within a treatment polygon unless a vegetation management objective requires additional reduction in sagebrush cover to meet strategic protection of priority greater sage-grouse habitat and conserve habitat quality for the species.			
Ensure proposed sagebrush treatments are planned with interdisciplinary input from BLM and state wildlife agency biologists, and that treatment acreage is conservative in the context of surrounding Greater Sage-Grouse seasonal habitats and landscape.			
In suitable Greater Sage-Grouse habitat, the priority for vegetation treatments are those that conserve, enhance, or restore greater sage-grouse habitat, reduce fuels at strategic locations to minimize the size of wildfires and limit loss of Greater Sage-Grouse habitat. Remove conifers where they have encroached upon Greater Sage-Grouse habitat.			
Reduce the density of conifers that have encroached into, but do not yet dominate, sagebrush plant communities.			
Ensure undesirable effects on vegetation or soils (e.g., minimize mortality of desirable plant species and reduce risk of hydrophobicity). Incorporate vegetation treatment standard operating procedures, such as those outlined in the 17 Western States Vegetation Programmatic Environmental Impact Statement, into treatments (BLM 2007c) or as later research establishes.			
Ensure that treatments are configured in a manner (e.g., strips) that promotes use by greater sage-grouse.			
Reestablish appropriate sagebrush species/subspecies and important understory plants relative to site potential. Identify priority plant species and collect seed of understory plants and sagebrush subspecies important to Greater Sage-Grouse. Establish seed harvest areas that are managed for seed production and are a priority for protection from outside disturbances.			
Design vegetation treatments in Greater Sage-Grouse habitats to strategically reduce wildfire threats in the greatest area. This could involve spatially arranging new vegetation treatments with past treatments, vegetation with fire-resistant serial stages, natural barriers, and roads to constrain fire spread and growth. This could require vegetation treatments to be implemented in a more linear versus block design.			

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

<b>Best Management Practice (BMP) or Required Design Feature (RDF)</b>	<b>Analyzed in NEPA?</b>	<b>Incorporated?</b>	<b>Explanation</b>
Remove standing and encroaching trees within at least 100 meters of occupied greater sage-grouse leks and other habitats (e.g., nesting, wintering, and brood-rearing) to reduce the availability of perch sites for avian predators.			
Protect wildland areas from wildfire originating on private lands, infrastructure corridors, and recreation areas.			
Strategically place and maintain pretreated strips/areas (e.g., mowing, prescribed fire, herbicide application, and strictly managed grazed strips) to aid in controlling wildfire should wildfire occur near key habitats or important restoration areas (such as where investments in restoration have already been made).			
<b>Mineral Development</b>			
Evaluate impacts to Greater Sage-Grouse in applying technically feasible conditions of approval. Selection and application of these measures shall be based on current science and research on the effects to important breeding, nesting, brood-rearing, and wintering areas.			
The Plan of Development or Plan of Operations shall address potential adverse impacts to Greater Sage-Grouse including the anticipated noise, density and amount of disturbance, mechanical movement (e.g., pump jacks), permanent and temporary facilities, traffic, phases of development over time, offsite mitigation, and expected periods of use associated with the proposed project.			
The NEPA analysis and authorization should identify seasonal habitats or typical project features related to potential Greater Sage-Grouse impacts, such as drill mats that are not made a part of the conditions of approval, based on site-specific or project-specific considerations and the explanation of why these protections were not included.			
Co-locate new development (facilities, pipelines, etc.) in existing disturbances unless the proponent can establish that this cannot reasonably be done. Cluster disturbances, operations (hydraulic fracture stimulation, liquids gathering, etc.), and facilities. Use drilling techniques to reduce surface disturbance in relation to the number of wells, where feasible. Place liquid-gathering facilities and compressor stations outside Core Area, unless the proponent can establish that this requirement would preclude development of the lease.			
Identify measures to reduce traffic in Core Area.			
Use Master Development Plans or Plans of Development during planning and review of projects involving multiple proposed disturbances in Core Area to improve comprehensive protections for Greater Sage-Grouse.			
In Core Area, require closed-loop systems for drilling operations with no reserve pits unless the proponent can show that this is technically infeasible.			
Require noise shields or other noise abatement devices when drilling during the lek, nesting, brood-rearing, and wintering seasons. Locate new compressor stations outside of Core Area if feasible, and require a design directed toward priority habitat that reduces noise.			
Wyoming Game and Fish Department.	See additional BMPs identified in Appendix E.		

**Table F-2. Lander Field Office Best Management Practices and Required Design Feature Checklist**

Best Management Practice (BMP) or Required Design Feature (RDF)	Analyzed in NEPA?	Incorporated?	Explanation
<b>General Mitigation</b>			
Identify areas where acquisitions (including subsurface mineral rights) or conservation easements, would benefit greater sage-grouse habitat. Apply acquisition and disposal criteria from Appendix K, Lands Identified for Disposal.			
<b>BMPs for Specific Types of Authorizations</b>			
BMPs in General	Review the BMP literature cited in Appendix E to the Record of Decision, incorporating additional resource protections as appropriate.		
Visual Resources	There are numerous design techniques that can be used to reduce the visual impacts from surface-disturbing projects. The techniques described here should be used in conjunction with BLM's visual resource contrast rating process wherein both the existing landscape and the proposed development or activity are analyzed for their basic elements of form, line, color, and texture. <a href="http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS/3.html">http://www.blm.gov/wo/st/en/prog/Recreation/recreation_national/RMS/3.html</a> or subsequent guidance as it is derived.		
Renewable Energy	See the BMPs referenced in Appendix E, <i>Renewable Energy Development BMP</i> , and subsequent recommendations.		
EPA recommended BMPs	See BMPs recommended by the EPA provided in Appendix E and other resources. The BMPs include: <i>Healthy Watersheds, Storm Water BMPs, and Pasture, Rangeland, and Grazing Operations BMPs</i> .		
Vegetation and Range Management	The National Resource Conservation System has recommendation for vegetation and range management including: BMPs found in <a href="http://www.nrcs.usda.gov/Technical/Standards/nhcp.html">http://www.nrcs.usda.gov/Technical/Standards/nhcp.html</a> and those in <a href="http://www.glti.nrcs.usda.gov/technical/publications/nrph.html">http://www.glti.nrcs.usda.gov/technical/publications/nrph.html</a> . These and other publications are updated regularly.		
Wyoming Game and Fish Department BMPs	See, <i>inter alia</i> , <a href="http://gf.state.wy.us/fish/AIS/index.asp">http://gf.state.wy.us/fish/AIS/index.asp</a> .		
Forestry BMPs	See the identified Forestry BMPs in Appendix E.		
Water Resources	See additional water protections in Appendix E.		

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

Resource Protection	Decision	Incorporated into the Authorization
<b><i>Air Resources</i></b>		
Use Best Management Practices (BMPs)	1003	
Dust abatement	1004	
Particulates and smoke	1006	
Limit adverse impacts to air quality	1008	
<b><i>Soil</i></b>		
Consider soil suitability	1010	
Limit surface disturbance in consideration of wet or frozen soil	1011	
Require site analysis for limited reclamation potential soil	1012	
Development in limited reclamation potential soils, monitor	1013	
Disturbance on slopes, monitor	1014	
<b><i>Soil Reclamation</i></b>		
Reclamation plan requirements	1015	
Reclamation bond requirements	1016	
Minimize disturbance	1017	
Identify desired plant community	1018	
Consider wildlife habitat objectives	1019	
Storm Discharge requirements	1020	
Monitor reclamation	1021	
Incorporate reclamation objectives	1023	
Improve reclamation success through BMPs, phased development and other techniques	1024	
Use appropriate native plant materials and Standards (Appendix H)	1025	
Monitor groundwater impairment	1026	
<b><i>Water</i></b>		
Require water BMPs	1027	
Participate in monitoring watershed health	1029	
Improve watersheds through decisions	1030	
Control discharge to Class I waters	1031	
Address 303(d) list waters and waters not meeting Standards for Healthy Rangelands	1032	
Consider impacts to domestic water from invasive nonnative species treatments	1033	
Accelerated erosion	1034	
Improve streams and riparian conditions	1035	

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

<b>Resource Protection</b>	<b>Decision</b>	<b>Incorporated into the Authorization</b>
Determine if groundwater monitoring is needed	1036 1040	
Support in-stream flow designation	1037	
Limit degradation of water quality	1042	
Precipitated solids	1043	
Groundwater recharge areas	1044/5	
Pesticide use in recharge areas	1046	
Prevent degradation of water quality and monitoring	1047	
100-year floodplains	1048	
<b>Mineral Resources</b>		
Require RDF and BLM as conditions of approval	2002	
Develop monitoring and mitigation plans	2003	
Consider unitization	2011	
Disposal of produced water	2012	
Reclamation in Designated Development Areas (DDAs)	2022	
Special mitigation in Master Leasing Plan Visual Resource Management (VRM) III	2026	
Reclamation standards	2027	
New development in MLP	2028	
Riparian setback	2029	
Require watershed monitoring	2030	
Tribal consultation	2031	
Paleo inventories in MLP	2032 2033	
Limit fencing in MLP for wild horses	2034	
Avoid unique plant communities	2035	
<b>Fire and Fuels</b>		
Apply BMPs in Core Area	3004	
Limits on use of aerial spraying	3005 3006	
Consider invasive nonnative species in determining fuel treatments	3007	
Monitor treatments	3009	
Veg treatment in Core	3012 3013	
Prescribed fire   <12" precipitation	3016	
Utilize BMP and RFDs	3017	

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

Resource Protection	Decision	Incorporated into the Authorization
<b>Biological Resources</b>		
Monitor for regeneration post fire or treatment.	4011	
Identify species and vegetable attributes to manage to protect.	4013	
Grazing: manage to meet needs of cooler season bunch grasses.	4014	
Weed: Post treatment: Is reseeding necessary?	4018	
Weeds: have RFD and BMPs in treatment plans.	4020	
Supplemental forage: is it weed free?	4021	
Require equipment be cleaned before moving on to BLM land.	4023	
Weeds: change authorization if it is contributing to spread of weeds.	4025	
Require riparian improvement plan in all authorizations.	4028	
Use all tools to improve riparian condition including travel mgmt..	4030	
Design right-of-way (ROW) water channel crossings to limit impacts to riparian-wetlands.	4032	
<b>Fish and Wildlife</b>		
Apply mitigation to minimize decrease in riparian function.	4033	
Minimize fragmentation, etc., and apply criteria for Migratory Bird Treaty Act.	4034	
Use veg treatments to meet wildlife objectives.	4035	
Remove wildlife hazard fences and require ramps.	4036	
Monitor impacts of wind-energy development.	4040	
Oil and gas development: consider Wyoming Game and Fish Department recommendations.	4042	
Reduce footprint to smallest safe size.	4043	
Avoid ROWs in Hudson to Atlantic City Area.	4046	
Avoidance in the Beaver Creek Triangle.	4048	
Modify stream crossings to minimize impacts to fish.	4049	
Avoid movement of water across drainages.	4051	
Require cleaning of equipment used in areas with aquatic invasive species.	4052	
Adjust fish barriers.	4054	
limit reduction of water from fish bearing streams.	4055	
<b>Wildlife</b>		
Apply seasonal limitations to operations and maintenance outside of DDAs where adverse impacts to wildlife would occur.	4056	
Limits on fences.	4058	
Close and reclaim redundant roads.	4059	
Wind.	4060	

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

Resource Protection	Decision	Incorporated into the Authorization
<b><i>Big Game</i></b>		
Manage activities so that forage needs are met.	4066	
Manage veg in crucial winter and parturition areas for wildlife.	4067	
Limits on water developments in crucial and parturition areas.	4068	
Avoid roads in crucial and parturition.	4069	
<b><i>Special Status Species (SSS)</i></b>		
Oil and gas categorical exclusions in Core Area.	4072	
Apply RFD on SSS.	4073	
Develop site specific measures to protect SSS.	4076	
Apply mitigation to protect Migratory Bird Treaty Act.	4077	
On a case-by-case basis require SSS surveys.	4079	
Develop limits of acceptable cumulative SSS habitat loss.	4080	
Apply special measures to protect SSS plants.	4082	
On a case-by-case basis require inventory for SS plants.	4083	
Avoid ROW in Desert Yellowhead habitat.	4084	
Avoid fire activities on SS plants.	4085	
Site projects to avoid impacts to SS plants.	4086	
Sediment to SS fish.	4087	
Adjust livestock grazing season for grizzly.	4091	
Conservation measures for bald eagle.	4092	
<b><i>Sage-grouse</i></b>		
Maintain sagebrush diversity. Follow Wyoming Game and Fish Department veg treatment.	4098	
Apply various recommended sage grouse mitigation.	4099	
Establish forage utilization levels.	4102	
Keep new roads and upgrades .1.9 miles from perimeter of lek.	4104	
Fences in sage-grouse habitat.	4115	
Require anti-perching devices.	4116	
Work with ROW holders to install anti-perching devices on existing ROWs in Core Area.	4118	
Opportunities to modify existing powerlines.	4119	
Avoiding surface disturbance in Core Area.	4120	
Use monitoring data to assess WH habitat.	4125	
Conduct animal health monitoring.	4126	



**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

Resource Protection	Decision	Incorporated into the Authorization
<b><i>Cultural</i></b>		
Manage National Register of Historic Places sites to avoid adverse impacts.	5004	
Consider tribal input on projects.	5007	
Apply mitigation for significant cultural resources.	5008	
How to mitigate significant cultural resources.	5010	
Avoid disturbances significant for informational potential but apply mitigation including recovery of scientific data.	5011	
Determine if additional mitigation is required for regional trails.	5016	
Is additional mitigation required for out-of-scale projects near trails?	5017	
Identify BMPs for non-DDA actions within 2 miles of trails.	5018	
Consider mitigation of impacts to regional trails from grazing infrastructure.	5021	
Cedar Ridge: devise mitigation if ROWs are authorized (“avoid”).	5027	
Cedar Ridge: authorize range projects and supplementation if mitigated to meet objectives.	5030	
Avoid ROW in Castle Gardens periphery.	5038	
Castle Gardens: authorize range projects and supplementation if mitigated to meet objectives.	5041	
Warm Springs: monitor to ensure that grazing is not causing any damage.	5048	
Sacred Sites: avoidance criteria for ROWs (mitigation).	5051	
Require data recovery for development of significant paleo resources.	5054	
Protect significant paleo resources.	5056	
Protection for ROW in high class paleo.	5059	
Monitor development in Bison Basin paleo.	5061	
Monitor development in Bonneville to Lost Cabin paleo.	5062	
Monitor development in Gas Hills paleo high potential areas.	5064	
<b><i>Visual Resources</i></b>		
Mitigation for development in VRM I and II to show project meets VRM objectives.	5066	
Use a visual simulation to show mitigation effects in VRM I, II, and III.	5070	
<b><i>Land-Realty Resources</i></b>		
Dispose of lands with restrictions with suitable mitigation.	6008	
ROW avoidance areas.	6016	
Identify opportunities to reclaim roads when authorizing ROW.	6020	
Add mitigation to new locations for ROWs if not co-located.	6021	

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

<b>Resource Protection</b>	<b>Decision</b>	<b>Incorporated into the Authorization</b>
<b><i>Travel Management</i></b>		
If administrative travel is authorized, identify mitigation.	6029	
Allow off-trail use to 300 feet to collect carcass so long as no resource damage occurs, no new route is created and it is not prohibited by Resource Management Plan.	6027	
<b><i>Livestock Grazing</i></b>		
Apply sage-grouse BMPs or where allotments are not meeting Standards for Healthy Rangelands.	6052	
Identify BMPs for range projects.	6056	
Allow supplements that will improve sage-grouse habitat.	6057	
Apply sage-grouse habitat recommendations if allotments are not meeting sage- grouse objectives.	6058	
Monitor measurable sage- grouse objectives.	6059	
Monitor precip and production and measurable objectives to verify that sage- grouse habitat objectives are being met.	6060	
Utilize RDF and BMPs for range projects.	6066	
Evaluate existing infrastructure during development of comprehensive grazing strategies and mitigation to reduce weed spread.	6067	
Remove fences and cattleguards to enhance other values.	6068	
Modify grazing management as necessary to facilitate reclamation efforts.	6073	
<b><i>Recreation</i></b>		
Apply mitigation or design to Special Recreation Permits in Core Area.	6077	
Utilize monitoring to ensure that recreation objectives are being met and adjust management accordingly.	6078	
Work to establish off-site mitigation to enhance access to landlocked BLM and private lands with high resource values.	6083	
Apply mitigation to reduce impact of disruptive activities in Mule Deer Hunt Area 90 and Antelope Hunt Areas 67, 68, 69, 106.	6084	
Monitor recreation setting condition for Johnny Behind the Rocks.	6093	
Monitor recreation setting condition for the Bus.	6100	
Monitor recreation setting condition for the Lander Valley Special Recreation Management Area.	6107	
Provide mitigation for any minor ROW in the Dubois Mill SRMA.	6113	
Monitor recreation setting condition for the Dubois Mill SRMA.	6114	
Monitor recreation setting condition for the Sweetwater Canyon SRMA.	6121	
Monitor recreation setting condition for the Sweetwater Rocks SRMA.	6125	
Provide mitigation for any ROW (major or minor) for the Green Mountain Extensive Recreation Management Area.	6130	

**Table F-3. Lander Field Office Resource Management Plan Mandated Resource Protections**

Resource Protection	Decision	Incorporated into the Authorization
<b><i>National Trails Management Corridor (NTMC)</i></b>		
Mitigation for ROWs in NTMC.	7005	
Mitigate ROW uses near NTMC if ROW could adversely impact NTMC.	7006	
Monitor recreation setting condition for the Alkali Basin Recreation Management Zone (RMZ).	7017	
Monitor recreation setting condition for the Sweetwater Mining RMZ.	7020	
Monitor recreation setting condition for the National Trails SRMA.	7023	
Monitor recreation setting condition for the Auto Tour Route RMZ.	7026	
Monitor recreation setting condition for the Group Re-enactment RMZ.	7029	
<b><i>WSA and Wild and Scenic River (WSR)</i></b>		
Monitor that grandfathered uses don't violate in non-impairment standard.	7033	
Mitigation disturbances in WSR ¼ mile.	7041	
Mitigation for avoidance of Warm Springs WSR.	7049	
<b><i>Areas of Critical Environmental Concern</i></b>		
Mitigate and monitor all minor ROWs in Areas of Critical Environmental Concern.	All	
<b><i>Health and Safety</i></b>		
Monitor reclaimed Abandoned Mine Land projects.	8007	
Mitigate open trenches, pipelines etc., are closed as soon as possible to ensure safety.	8010	
Require gates with soft plugs every 0.25 miles.	8010	

## 2.2 Casper Field Office

**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Evaluate and take advantage of opportunities to remove or modify existing power lines within priority sage-grouse habitat areas. When possible, require perch deterrents on existing or new overhead facilities. Encourage installation of perch deterrents on existing facilities. <b>(NRS/Realty)</b>			
Where existing leases or rights-of-way (ROW) have had some level of development (road, fence, well, etc.) and are no longer in use, reclaim the site by removing these features and restoring the habitat. <b>(NRS/Realty)</b>			
Locate man camps outside priority sage-grouse habitats. <b>(NRS)</b>			
<b>Roads</b>			
Design roads to an appropriate standard, no higher than necessary, to accommodate their intended purpose. <b>(NRS/Realty)</b>			
Coordinate road construction and use among federal fluid mineral lessees and ROW or special use authorization (SUA) holders. <b>(NRS/Realty)</b>			
Construct road crossings of ephemeral, intermittent, and perennial streams to minimize impacts to the riparian habitat, such as by crossing at right angles to ephemeral drainages and stream crossings. <b>(NRS/Realty)</b>			
Establish slow speed limits on BLM-administered roads or design roads for slower vehicle speeds to reduce sage-grouse mortality.		YES	
Establish trip restrictions (Lyon and Anderson 2003) or minimization through use of telemetry and remote well control (e.g., Supervisory Control and Data Acquisition). <b>(NRS/Realty/BIO)</b>			
Do not issue ROWs or SUAs to counties on energy development roads, unless for a temporary use consistent with all other terms and conditions including this document. <b>(NRS/Realty)</b>			
Designate all newly constructed routes for authorized use only (using signage, gates, etc.). <b>(NRS/Realty)</b>			

**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Apply dust abatement on roads, well pads, and other surface disturbances.		YES	
Close and rehabilitate duplicate roads by restoring original landform and establishing desirable habitat conditions. (NRS/Realty/BIO)			
<b>Operations</b>			
Conduct reclamation on unused roads as soon as possible using appropriate sage-grouse seed mixes. Reclaim the permitted ROWs used in the construction of the running surface immediately. (NRS)			
Site and/or minimize linear ROWs or SUAs to reduce disturbance and fragmentation of sagebrush habitats. (NRS/Realty/BIO)			
Place new utility developments (power lines, pipelines, etc.) and transportation routes in existing utility or transportation corridors. (NRS/Realty)			
Bury distribution power lines to the extent technically feasible. (NRS/Realty)			
Cover all fluid-containing pits and open tanks with netting (maximum 1.5-inch mesh size) regardless of size to reduce sage-grouse mortality.		YES	
Equip tanks and other above-ground facilities with structures or devices that discourage nesting and perching of raptors and corvids.		YES	
Control the spread and effects of invasive non-native plant species (Evangelista et al. 2011), including treating weeds prior to surface disturbance and washing vehicles and equipment at designated wash stations when constructing in areas with weed infestations.		YES	
Require sage-grouse-safe fences (Christiansen 2009; Stevens et al. 2011). (BIO)		YES	
Clean up refuse (Bui et al. 2010).		YES	
Eliminate sumps; if the sump is absolutely necessary, then construct sage-grouse-safe fences around the sump (Christiansen 2009; Stevens et al. 2011). (NRS)			

**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Cluster disturbances, operations (hydraulic fracture stimulation, liquids gathering, etc.), and facilities. If the geology is exploratory and there is the potential that subsequent wells may not be drilled, do not disturb additional habitat until geology has proven additional wells can go on the pad and it is necessary to do so. <b>(NRS/BIO)</b>			
Use directional and horizontal drilling to the extent feasible as a means to reduce surface disturbance in relation to the number of wells. <b>(NRS)</b>			
Place infrastructure in already disturbed locations where the habitat has not been fully restored. <b>(NRS/BIO)</b>			
Apply a phased development approach with concurrent reclamation. <b>(NRS)</b>			
Place liquid gathering facilities outside priority areas. To reduce truck traffic and perching and nesting sites for ravens and raptors, do not place tanks at well locations within priority habitat areas. <b>(NRS)</b>			
Pipelines must be under or immediately adjacent to the road (Bui et al. 2010). <b>(NRS/Realty)</b>			
Use remote monitoring techniques for production facilities and develop a plan to reduce the frequency of vehicle use (Lyon and Anderson 2003). <b>(NRS)</b>			
Restrict the construction of tall facilities, distribution power lines, and fences to the minimum number and amount needed. <b>(NRS/BIO)</b>			
Design or site permanent structures to minimize impacts to sage-grouse, with emphasis on locating and operating facilities that create movement (e.g., pump jacks) or attract frequent human use and vehicular traffic (e.g., fluid storage tanks) in a manner that will minimize disturbance of sage-grouse or interference with habitat use. <b>(NRS/BIO)</b>			
Use only closed-loop systems for drilling operations, with no reserve pits. <b>(NRS)</b>			

**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Consider using oak (or other material) mats for drilling activities where topography permits to reduce vegetation disturbance and for temporary roads between closely spaced wells to reduce soil compaction and maintain soil structure to increase likelihood of vegetation reestablishment following drilling. <b>(NRS)</b>			
<b>West Nile Virus</b>			
Artificial water impoundments will be managed for the prevention and/or spread of West Nile virus where the virus poses a threat to sage-grouse. This may include but is not limited to: (a) the use of larvicides and adulticides to treat waterbodies; (b) overbuilding ponds to create non-vegetated, muddy shorelines; (c) building steep shorelines to reduce shallow water and emergent aquatic vegetation; (d) maintaining the water level below rooted vegetation; (e) avoiding flooding terrestrial vegetation in flat terrain or low-lying areas; (f) constructing dams or impoundments that restrict seepage or overflow; (g) lining the channel where discharge water flows into the pond with crushed rock, or use a horizontal pipe to discharge inflow directly into existing open water; (h) lining the overflow spillway with crushed rock and construct the spillway with steep sides to preclude the accumulation of shallow water and vegetation; and (i) restricting access of ponds to livestock and wildlife (Doherty 2007). This does not apply to naturally occurring waters. <b>(NRS/BIO)</b>			
Field offices should consider alternative means to manage produced waters that could present additional vectors for West Nile virus. Such remedies may include re-injection under an approved Underground Injection Control permit, transfer to single/centralized facility, etc. <b>(NRS/BIO)</b>			
Water impoundments will be managed to prevent the spread of West Nile virus where analysis shows the virus poses a threat to sage-grouse and in consideration of potential negative impact to other species of concern. <b>(NRS/BIO)</b>			

**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Restrict pit and impoundment construction to reduce or eliminate threats from West Nile virus (Doherty 2007). <b>(NRS/BIO)</b>			
<b>Noise</b>			
Limit noise to less than 10 decibels above ambient measures (20-24 dBA) at sunrise at the perimeter of a lek during active lek season (Patricelli et al. 2012, Blickley and Patricelli 2012). <b>(NRS/BIO)</b>			
Require noise shields when drilling during the lek, nesting, brood-rearing, or wintering season. <b>(NRS/BIO)</b>			
Locate new compressor stations outside priority habitats and design them to reduce noise that may be directed towards priority habitat. <b>(NRS)</b>			
<b>Reclamation</b>			
Include objectives for ensuring habitat restoration to meet sage-grouse habitat needs in reclamation practices/sites (Pyke 2011). Address post-reclamation management in reclamation plan such that goals and objectives are to protect and improve sage-grouse habitat needs. <b>(NRS/BIO)</b>			
Maximize the area of interim reclamation on long-term access roads and well pads, including reshaping, topsoiling, and revegetating cut-and-fill slopes where practicable; material used for irrigation must be removed thereafter. <b>(NRS)</b>			
Restore disturbed areas at final reclamation to the pre-disturbance landforms and desired plant community. <b>(NRS)</b>			May request assistance from Range Staff
Implement irrigation during interim or final reclamation for sites where establishment of seedlings has been shown or is expected to be difficult due to dry conditions. <b>(NRS)</b>			May request assistance from Range Staff
Use mulching, soil amendments, and/or erosion blankets to expedite reclamation and to protect soils. <b>(NRS)</b>			
Identify and work with partners to increase native seed availability and work with plant material centers to develop new plant materials, especially the forbs needed to restore sage-grouse habitat.	NA	NA	



**Table F-4. Casper Field Office Priority Habitat Management Area Required Design Feature Checklist for Lands and Minerals Operations**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/Plan of Development	Addressed with COA/Stips/T&C	Comments
Consider potential changes in climate (Miller et al. 2011) when proposing seedlings using native plants. Consider seed collections from the warmer component within a species' current range for selection of native seed (Kramer and Havens 2009).	NA	NA	
Use Ecological Site Descriptions (ESD) or other protocols (e.g., Terrestrial Ecological Unit Inventory or Lands System Inventory) to identify the understory species and sagebrush subspecies needed to restore desirable habitat conditions. <b>(NRS/BIO)</b>			May request assistance from Range Staff

**Table F-5. Casper Field Office General Habitat Management Area Required Design Feature Checklist**

Required Design Feature (RDF) Description	Addressed in Application for Permit to Drill/POD	Addressed with COA/Stips/T&C	Comments
Design roads to an appropriate standard, no higher than necessary, to accommodate their intended purpose. <b>(Project Lead)</b>			
Do not issue ROWs to counties on energy development roads, unless for a temporary use consistent with all other terms and conditions included in this document. <b>(Project Lead)</b>			
Establish speed limits to reduce vehicle/wildlife collisions or design roads to be driven at slower speeds. <b>(Project Lead)</b>			Draft standard COA
Coordinate road construction and use among ROW holders. <b>(Project Lead)</b>			
Construct road crossing at right angles to ephemeral drainages and stream crossings. <b>(Project Lead)</b>			
Use dust abatement practices on roads and pads. <b>(Project Lead)</b>			Draft standard COA
Close and reclaim duplicate roads by restoring original landform and establishing desired vegetation. <b>(Project Lead)</b>			
Cluster disturbances, operations (fracture stimulation, liquids gathering, etc.), and facilities. <b>(Project Lead)</b>			

**Table F-5. Casper Field Office General Habitat Management Area Required Design Feature Checklist**

<b>Required Design Feature (RDF) Description</b>	<b>Addressed in Application for Permit to Drill/POD</b>	<b>Addressed with COA/Stips/T&amp;C</b>	<b>Comments</b>
Use directional and horizontal drilling to reduce surface disturbance. <b>(Project Lead)</b>			
Clean up refuse. <b>(Project Lead)</b>			Draft standard COA
Restrict the construction of tall facilities and fences to the minimum number needed. <b>(BIO)</b>			
Cover (e.g., fine mesh netting or use other effective techniques) all drilling and production pits and tanks regardless of size to reduce sage-grouse mortality. <b>(Project Lead)</b>			Draft standard COA
Equip tanks and other above ground facilities with structures or devices that discourage nesting of raptors and corvids. <b>(BIO)</b>			BIO will add COA if needed
Use remote monitoring techniques for production facilities and develop a plan to reduce the frequency of vehicle use. <b>(Project Lead)</b>			
Control the spread and effects from non-native plant species. (e.g., by washing vehicles and equipment). <b>(Project Lead)</b>			Draft standard COA
Restrict pit and impoundment construction to reduce or eliminate augmenting threats from West Nile virus. <b>(Project Lead)</b>			
Include restoration objectives to meet sage-grouse habitat needs in reclamation practices/sites (Pyke 2011). Address post-reclamation management in reclamation plan such that goals and objectives are to enhance or restore sage-grouse habitat. <b>(Project Lead/BIO)</b>			

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