APPENDIX 1. LIST OF APPENDICES INCORPORATED BY REFERENCE FROM THE FINAL EIS

Appendices (whole or in part) found in the final EIS Incorporated by reference in the JMH CAP		
Number in FEIS	**Name**	**Incorporated by Reference**
Appendix 1	BLM Planning Process	Sections describing the planning process
Appendix 2	Green River Land Use Plan Objectives and Actions	Entire Appendix
Appendix 3	Biological Assessment	Entire Appendix
Appendix 5	Wyoming BLM Mitigation Guidelines for Surface Disturbing and Disruptive Activities	Entire Appendix
Appendix 6	Standard Practices, BMPS, and Guidelines for Surface Disturbing Activities	Entire Appendix
Appendix 7	Heritage Resources Management	Entire Appendix
Appendix 8	Standard Operating Procedures for Range Improvements and Vegetation Manipulations	Entire Appendix
Appendix 10	Wyoming Standards For Healthy Rangelands Management For The Public Lands Administered By The Bureau Of Land Management In The State Of Wyoming	Entire Appendix
Appendix 12	Draft Transportation Plan	Entire Appendix
Appendix 13	Hydrocarbon Occurrence and Development Potential Report	Entire Appendix
Appendix 14	Oil and Gas Operations	Entire Appendix
Appendix 15	Air Quality Regulations	Sections describing the Air Quality Standards

APPENDIX 2. IMPLEMENTATION, MONITORING, AND EVALUATION PROCESS

This appendix provides detail on the resource management strategy to be used in the Jack Morrow Hills Coordinated Activity Plan (JMH CAP) planning area. Appendix 3, Appendix 6, and Appendix 10 in the final Environmental Impact Statement (EIS) also provide information on resource monitoring that supports the process outlined in this appendix. Other appendices contain information on BLM procedures and guidelines and provide support information for this process.

This appendix discusses how the various surface use activities and their interactions with other planning area resources will be monitored. Examples focus on oil and gas activities because these are anticipated to have the greatest immediate impact. Data collected in the planning area will be used to measure progress toward the goals adopted for the planning area, evaluate the effectiveness of specific practices or policies, and support decision changes. Timing and sequencing of resource activities will be used where appropriate and required to attain the management vision. This appendix provides detail on the resource management strategy to be used in the JMH CAP planning area.

MANAGEMENT VISION

In general, resource management in the JMH CAP planning area will allow multiple-use activities and sustained yield while enhancing certain aspects of the area and minimizing undesirable impacts. Surface activities of many kinds are anticipated, and management direction is provided to recognize the area's ability to support big game and other wildlife. Important historical and cultural resources will be identified and managed for future study and enjoyment. Special management areas (such as Wilderness Study Areas [WSA] and Areas of Critical Environmental Concern [ACEC]) will continue to safeguard the unique values within them.

SUPPORTING RESOURCE OBJECTIVES

Objectives for individual resources are as follows:

- **Land and Water Resources Management:** To maintain or enhance land and water resources using ecological principles and science-based performance criteria.
- **Fire Management:** To use prescribed fire as a management tool to help meet multiple-use resource management goals and to provide cost-effective protection from wildland fire to life, property, and resource values.
- **Watershed Management:** To stabilize and conserve soils; increase vegetative production; maintain or improve surface and ground water quality; and protect, maintain, or improve wetlands, floodplains, and riparian areas.
- **Wild Horses Management:** To protect, maintain, and control viable, healthy herds of wild horses at appropriate management levels (AML) in the Great Divide Herd Management Area while retaining their free-roaming nature; provide adequate habitat for free-roaming wild horses through management consistent

with principles of multiple use and environmental protection; and provide opportunity for the public to view wild horses.

- **Livestock Grazing Management:** To improve forage production and ecological conditions for the benefit of livestock use while providing for other resource values.
- **Vegetation Management***:* To maintain or enhance vegetation community health, composition, and diversity to meet watershed, wild horse, wildlife, and livestock grazing resource management objectives and to provide for plant diversity (desired plant communities).
- **Wildlife Habitat Management:** To maintain, improve, or enhance the biological diversity of wildlife species while ensuring healthy ecosystems, and restore disturbed or altered habitat, with the objective of attaining desired native plant communities while providing for wildlife needs and soil stability. To the extent possible, suitable wildlife habitat and forage would be provided to support the Wyoming Game and Fish Department (WGFD) Strategic Plan population objectives.
- **Heritage Resources Management:** To expand the opportunities for scientific study and educational and interpretive uses of cultural and paleontological resources, protect and preserve important cultural and paleontological resources and/or their historic record for future generations, resolve conflicts between cultural/paleontological resources and other resource uses, and foster opportunities for Native Americans to use heritage resources.
- **Travel, Access, and Realty Management:** To manage the public lands to support the goals and objectives of other resource programs, respond to public demand for land use authorizations, and acquire administrative and public access where necessary.
- **Recreation Resources Management:** To ensure the continued availability of outdoor recreational opportunities sought by the public, while providing for other resource values; meet legal requirements for the health and safety of visitors; and reduce conflicts between recreation and other types of resource uses.
- **Mineral and Energy Resources Management:** To maintain or enhance opportunities for mineral exploration and development while providing for other resource values.
- **Visual Resources Management:** To maintain or improve scenic values and visual quality and to establish priorities for managing the visual resources in conjunction with other resource values.
- **Special Management Areas Management:** To maintain or enhance the resource values and characteristics for which the area was designated as a special management area.

Competing resource objectives will be balanced. Decisions will favor objectives that achieve the overall management vision.

GENERAL APPROACH

BLM intends to authorize, allow, and undertake public land uses consistent with this plan. In many parts of the planning area, the activities are adequately addressed by standard practices and mitigation measures. In other areas, varying degrees of uncertainty exist about effects or adequacy of mitigation. In these circumstances activities are not expressly prohibited; rather, BLM will analyze the activities through site specific analysis including National Environmental Policy Act (NEPA) analysis and public participation. Authorized actions and outcomes will be monitored.

The greatest degree of uncertainty exists where many sensitive or important resource values overlap with areas of high or intense resource use. BLM will exercise the greatest caution when considering activities in these areas. Monitoring will focus on these areas. As monitoring information is compiled and evaluated, adjustment to authorizations and allowed uses will be made.

Money, personnel, and time are not available to monitor all actions. BLM will use an Interagency Working Group to provide advice on monitoring priorities and data evaluation.

JMH CAP DECISIONS

Several ways exist for achieving the multiple-use management vision. The methodology selected implements a careful approach to the development and use of the various resources (especially oil and gas) while managing the associated impacts. Observing actual effects of surface disturbing and disruptive activities is a necessary part of the approach. Limits, targets, or thresholds presented in the final EIS may be modified as information is collected, decision effectiveness is evaluated, and needed modifications are made to associated policies or practices. It is equally possible that both less or more restrictive measures could be implemented as a result of observing the effects of the management strategy.

Map B presents three areas of relative resource value within the planning area: Area 1 (154,200 acres), Area 2 (96,000 acres), and Area 3 (215,700 acres). Areas were delineated using a “broadbrush” approach combining many factors (e.g., wildlife usage, presence of crucial habitat, plant species distribution, historic or cultural importance, and general sensitivity to the impact of surface activities). Resource sensitivity increases from Area 1 to Area 3. For example, Area 3 has the highest relative ranking; proposed surface use activities are subject to the most stringent mitigation.

The following discussion presents examples of various resource uses in the context of the implementation, monitoring, and evaluation process.

In Area 1, the suspensions on existing oil and gas leases will be lifted 3 years from the signing of the Record of Decision (ROD) or upon the signing of an approved plan of development. New leasing will be considered in Area 1 immediately following the signing of the ROD. Leasing requests will originate from industry nominations as provided for by the Mineral Leasing Act of 1920, as amended and supplemented (30 United States Code [U.S.C.] 181 et seq.). It is expected that exploration and development will occur within the term of the lease. Review of exploration, development, and leasing proposals will continue to follow the current process (Appendix 14 in the final EIS). Pipelines, power lines, roads, and other surface activities will undergo site

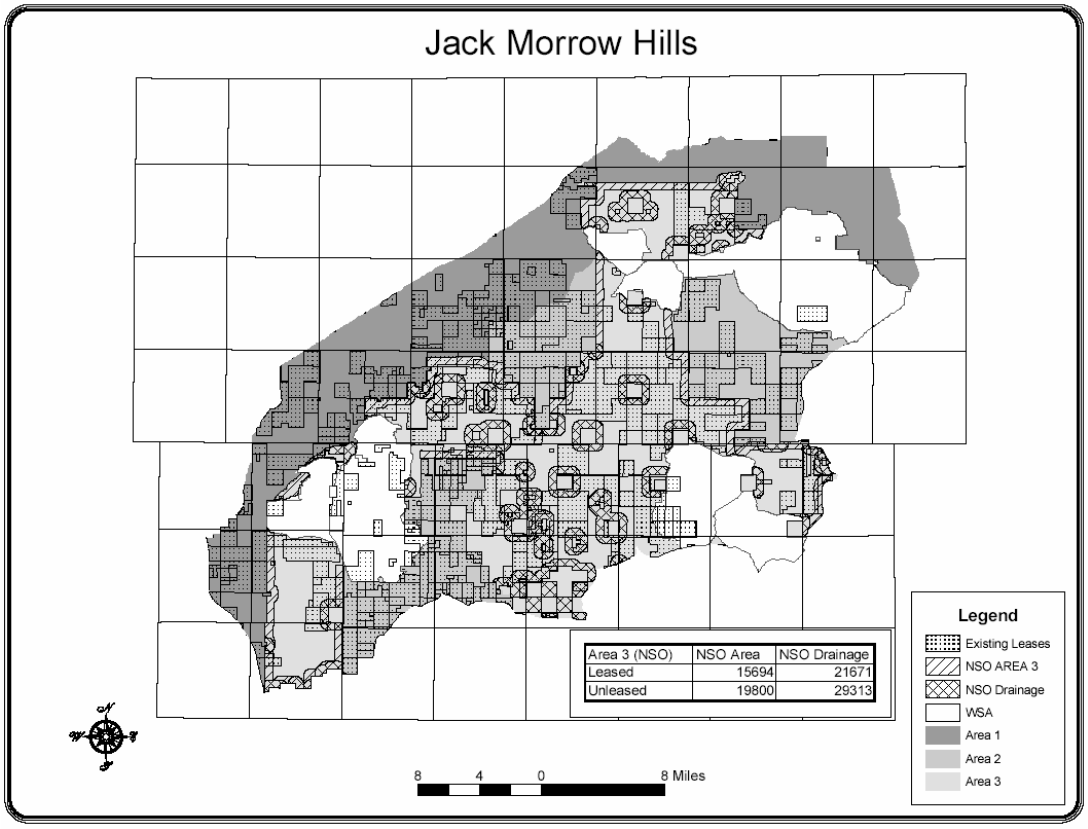
specific, NEPA, or other analysis. Other uses (such as recreation, grazing, and rangeland improvement) will employ resource-specific review processes and will also rely heavily on field data and observations for making informed decisions. Stipulations, restrictions, and modifications to proposals will be used to manage impacts of any surface disturbing or disruptive activities.

In Area 2, existing oil and gas leases will have their suspensions lifted 3 years from the signing of the ROD or upon the signing of an approved plan of development (the same as Area 1). New leasing will be considered immediately upon the signing of the ROD. BLM may request potential lessees to share data (such as reservoir data or geologic data) or plans related to the development of the potential oil and gas resource prior to leasing; sharing of this data is voluntary. The information will be used to ensure that impacts resulting from development in Area 2 area will remain within acceptable levels of impacts. Consideration of leasing may rely heavily on field data, the condition of the planning area resources as determined through monitoring of sensitive resource indicators, the understanding of the associated impacts, and other pertinent information available. Future impacts resulting from the development of the lease interest area in conjunction with other foreseeable surface uses will also be considered. Fluid mineral resource development and protection of surface resource values will be attained through lease stipulations and/or site-specific conditions of approval (COA). Because of the greater number of sensitive resource values in Area 2, authorizations for activities such as range improvements, recreation permits, rights-of-way (ROW), and well permits would include an increased number of resources and issues to analyze at the permitting stage. As with other projects in Area 1, appropriate administrative controls (such as COAs, use restrictions, and requiring mitigation measures) will be used to safeguard or support improvement of resource values.

Area 3 will be closed to future oil and gas leasing, with the exception of about 35,500 acres that could be considered for leasing with a No Surface Occupancy (NSO) lease stipulation. This acreage represents a distance of 1/2-mile within portions of the boundary of Area 3**.** Existing oil and gas leases in Area 3 will be handled like those located in Areas 1 and 2 (i.e., suspensions lifted 3 years from the signing of the ROD or upon the signing of an approved plan of development). No new oil and gas leasing will occur in the majority of Area 3. To the extent that laws and regulations allow, those portions of Area 3 that are closed to oil and gas leasing will remain closed to leasing of oil and gas unless BLM determines that an NSO lease is appropriate and meets management objectives. For example, an NSO lease may be offered if production on adjacent private or state lands results in a loss of federal minerals through drainage (Figure A2-1).

It is not anticipated that an NSO lease for these lands would extend farther than 1/2-mile from the boundary of the involved private or state lease. However, this may change as new information and technological advances become available.

Figure A2-1. Possible NSO Oil and Gas Leasing Areas



Because Area 3 contains a high concentration of sensitive resource values, proposals for all surface activities will be closely examined. Proposals will have to demonstrate that requests are necessary and employ best management practices (BMP). Approvals may require close consultation with BLM staff and have stringent COAs. This action may mean proposing novel methods, systems, technologies, and timing and sequencing for BLM consideration. ROW applications will be examined for necessity. Paralleling, consolidation, or rerouting may be necessary to minimize cumulative surface disturbance and to meet transportation planning objectives. Other surface use proposals and projects (e.g., rangeland improvement, grazing, access, and recreation) can expect to undergo an in-depth, comprehensive review. Field data and observations, cumulative impacts of likely and foreseeable competing uses, understanding of impacts, conditions within the planning area, and management goals will be employed during the decision making process.

Area 3 contains a special category for possible oil and gas leasing. The lands surrounding private or state oil and gas leases and those along the perimeter not bounded by a WSA or adjacent to particularly sensitive resources will be considered for leasing with an NSO stipulation. This provides opportunities (such as by the use of directional drilling) to recover oil and gas within Area 3 from locations outside the planning area or within Areas 1 and 2 without significantly impacting Area 3 resource values. Approximately 35,500 acres would be available within Area 3 for future oil and gas leasing with the NSO stipulation (based on a 1/2-mile perimeter). Approximately 15,700 acres of the perimeter area is currently leased. These existing leases are subject to a variety of stipulations and are not necessarily constrained by an NSO restriction.

Map 11 shows the existing leases and illustrates the possible effects of 1/2-mile NSO leases along the entire Area 3 and private lands perimeter.

Approval of any surface disturbing or disruptive activity anywhere in the planning area will be considered on a case-by-case basis. The analysis will consider many factors, such as type and effect of future uses, surface resource impacts and recovery, planning area condition as shown by the indicator data, scientific data, operational and environmental justification, and potential for effective impact mitigation. The proposal review process can be expected to take longer and be more intensive when sensitive values are involved.

Wherever sensitive values exist, and particularly in Areas 2 and 3, the review and approval process will consider mitigation measures commensurate with the anticipated impacts, the resource values of the area, and public comments.

For oil and gas projects, mitigation actions could include—

- Surface disturbance conditional requirements.
- Transportation planning before initiating any activity, with the objective of managing travel in areas of crucial access.
- Remote control and monitoring of fluid mineral production facilities to limit travel.
- Multiple-well pads to limit surface disturbances.
- Limiting the number of pads per section in sensitive areas.
- Use of directional drilling to minimize disturbance of sensitive areas.
- Clustering or centrally locating ancillary facilities.
- Shrub reclamation (e.g., containerized stock, transplanting) to restore, rehabilitate, or replace habitat.
- Application of geotechnical material for construction.
- Potential unitization prior to exploration and development.
- Other resource projects or proposals can expect a similar in-depth consideration of mitigation measures to safeguard the affected resource values.

Oil and gas leases that expire, terminate, or in any other way return to an “unleased” status will be considered for future leasing consistent with this plan, based on location. In other words, if an oil and gas lease expires in Area 3, the lands will not be considered for new oil and gas leasing within the life of the JMH CAP unless the lands fall into the special NSO lease categories as previously described.

BLM will consider requests for oil and gas lease suspensions on a case-by-case basis. Decisions to grant or deny such a request will be based on many factors, including current regulations and Wyoming BLM policy, conditions in the planning area, and alignment with management goals. To some degree these lease suspensions may influence the time frames for development to occur.

Because of the uncertainty associated with the oil and gas resources within the planning area, the exact timing or sequence of development of this resource is not known. The implementation strategy provides the opportunity for lessees to exercise their rights within reason and consistent with the limits imposed by the JMH CAP. The sensitive nature of portions of the planning area requires a higher level of control over surface disturbances.

DATA COLLECTION

Collection and evaluation of monitoring data will make decisions better by—

- Measuring factors that indicate resource condition of the planning area.
- Improving understanding of impacts by direct observation.
- Increasing the accuracy of project analysis by employing actual data.
- Establishing thresholds, trigger points, or limits specific to the planning area.
- Measuring the progress toward management goals.
- Helping develop effective and appropriate mitigation measures.
- Providing information on the success of management practices and policies.

The following discussion presents examples of monitoring indicators and possible measurements. Actual data collection will be decided by BLM and based on recommendations of the Working Group. Resource indicators presented in Table A2-1 were developed with assistance of Cooperating Agencies. Many indicators are common to several resources.

Table A2-1. Resource Management Indicators

Resource	Indicator
Land and Water	
Water	Standards for Healthy Rangelands; surface disturbance and disruptive activity; changes in stability of dunes; roads and trails creation; road density
Wildlife	Standards for Healthy Rangelands; elk distribution; elk population; mule deer distribution; mule deer population; pronghorn distribution; pronghorn population; lek use; greater sage-grouse population; surface disturbance and disruptive activity; roads and trails creation; road density
Fire	Standards for Healthy Rangelands
Livestock Grazing	Standards for Healthy Rangelands; livestock animal unit months (AUM); surface disturbance and disruptive activity; roads and trails creation; road density
Wild Horses	Standards for Healthy Rangelands; wild horse AML; surface disturbance and disruptive activity; roads and trails creation; road density
Heritage	Heritage resources; Native American concerns; surface disturbance and disruptive activity; roads and trails creation; road density
Recreation	Recreation use; surface disturbance and disruptive activity; roads and trails creation; road density
Mineral and Alternative Energy	Oil/Gas (O/G) leased; O/G available for leasing; O/G production; locatable mineral activity; salable mineral activity; surface disturbance and disruptive activity; roads and trails creation; road density
Visual	Visual resource management (VRM) classifications; surface disturbance and disruptive activity; roads and trails creation; road density
Special Management Areas (SMA)	Any of previous indicators as they apply to the specific SMA
Travel, Access, and Realty	No specific indicators were developed because travel, access, and realty is a support function

Table A2-2 presents detailed information about the indicators presented in Table A2-1. Some of the monitoring data are already collected by BLM. Other data are available from state agencies. Management actions and surface use proposals will be analyzed using all available information. If new or additional data are not available, the result will be continuation of the decisions established in the JMH CAP with the appropriate modifications (usually minor, conservative modifications) until the data are acquired. A priority list will be developed and funding sought to acquire needed data. BLM will pursue funding from a number of sources (e.g., private endowments, private sources, permit applicants, industry, grants, shared funding, federal funding, etc.).

Table A2-2. Indicator Detail

Indicator	Source of Information	Measurement Location	Methodology/ Data Source	Information Indicator Provides
Elk distribution[1]	BLM	Planning area	GIS collar study; field observations	Integrity of key habitats and migratory corridors (amount of continuous land between important habitats; travel pathways between key habitats)
Elk herd health[1]	WGFD	Herd unit area	Postseason counts; flight counts; other WGFD data	Population, health, and security of herd
Mule deer distribution[1]	WGFD	Herd unit area	Flight counts; other WGFD data; field observations	Integrity of key habitats and migratory corridors (amount of continuous land between important habitats)
Mule deer herd health[1]	WGFD	Herd unit area	Postseason counts; flight counts; other WGFD data	Population, health, and security of herd
Pronghorn distribution[1]	WGFD	Planning area	Radio collar studies; field observations	Integrity of key habitats and migratory corridors (amount of continuous land between important habitats)
Pronghorn herd health[1]	WGFD	Planning area	Preseason counts; flight counts; other WGFD data	Population, health, and security of herd
Greater sage-grouse lek use[1]	BLM; WGFD	Planning area	Field observation; lek counts	Health and security of population; reproduction opportunities
Greater sage-grouse population health[1]	BLM; WGFD	Planning area	Preseason counts; field observation	Population changes
Livestock AUMs	BLM	Planning area	Counts; actual use reports; grazing authorizations	Amount of livestock use (+/-)
Wild Horse Population	BLM	Great Divide Basin HMA	Counts	Number of wild horses (+/- AML)

Table A2-2. Indicator Detail (Continued)

Indicator	Source of Information	Measurement Location	Methodology/ Data Source	Information Indicator Provides
Standards for Healthy Rangelands—Standard 1[2]	BLM	Watersheds Grazing Allotments	Remote sensing[3]; field visits	Change in rangeland and watershed health (+/-)
Standards for Healthy Rangelands—Standard 2[2]	BLM	Watersheds Grazing Allotments	Remote sensing[3]; field visits; trend data collection	Change in rangeland and watershed health (+/-)
Standards for Healthy Rangelands—Standard 3[2]	BLM	Watersheds Grazing Allotments	Remote sensing[3]; field visits; trend data collection	Change in rangeland and watershed health (+/-)
Standards for Healthy Rangelands—Standard 4[2]	BLM	Watersheds Grazing Allotments	Field visits	Change in rangeland and watershed health (+/-)
Standards for Healthy Rangelands—Standard 5[2]	BLM and State of Wyoming Department of Environ-mental Quality (DEQ)	Watersheds Grazing Allotments	Monitoring station and visual monitoring data	Change in rangeland and watershed health (+/-)
Standards for Healthy Rangelands—Standard 6[2]	BLM and State of Wyoming DEQ	Watersheds Grazing Allotments	Monitoring station and visual monitoring data	Change in rangeland and watershed health (+/-)
Roads and trails creation	BLM; County	Planning area and associated hydrologic unit code (HUC) 12 watersheds	Remote sensing[3]; permits	Change in watershed health (+/-), habitat fragmentation, migratory corridor integrity (amount of continuous land between important habitats)
Road density	BLM; County	Planning area and associated HUC 12 watersheds	Remote sensing[3]	Change in watershed health (+/-), habitat fragmentation, migratory corridor integrity (amount of continuous land between important habitats)
Changes in stability of dunes	BLM	Planning area	Remote sensing[3]; field visits	Habitat loss/gain, watershed health, habitat use/fragmentation/ expansion, soil stability
O/G leased	BLM	Planning area	LR2000 database, management decisions	Leasing activity; opportunity taken for development
O/G available for leasing	BLM	Planning area	Management decisions; industry interest	Interest in leasing; opportunity for development

Table A2-2. Indicator Detail (Continued)

Indicator	Source of Information	Measurement Location	Methodology/ Data Source	Information Indicator Provides
O/G production	BLM; Wyoming Oil & Gas Conservation Commission (WOGCC)	Planning area	LR2000; WOGCC database	Lease activity (+/-); resource potential
Locatable mineral activity	BLM	Planning area	LR 2000 database	Opportunity for locatable mineral activity; interest in locatable minerals
Salable mineral activity	BLM	Planning area	Permits; LR 2000	Opportunity for salable mineral activity; interest in salable minerals
Surface disturbance and disruptive activity	BLM	Planning area	Remote sensing[3]; field visits; traffic counts; permits	Change in erosion potential, habitat fragmentation/integrity, migratory corridor integrity (amount of continuous land between important habitats), soil stability, watershed health
VRM Classifications	BLM	Planning area	BLM VRM handbook; mitigation	Change in visual quality (+/-)
Recreation use	BLM; WGFD	Planning area	Surveys; traffic/visitor counts; field visits; public comment; ROS	Amount of visitors, activity and type of use, location of use (when, where)
Heritage Resources	BLM; Activity Proponents	Planning area	Cultural Resource Inventory; public comment	Whether any unusual or unanticipated resources are located compared to known data about planning area
Native American Concerns	BLM; Native American sources; Activity Proponents	Planning area	Native American consultation; public comment	Whether any unusual or unanticipated resources are located compared to known data about planning area

[1]Weather severity indicators will be used in the analysis of data collected on wildlife populations and health.

[2]Each of the six rangeland standards contains specific indicators (USDI, Bureau of Land Management, Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming, August 12, 1997). See Appendix 10 in the final EIS.

[3]Remote sensing data includes aerial and satellite imagery.

Note: Consideration will be given to those occurrences outside BLM's control, such as environment (weather, drought), outside agency jurisdiction and laws, socioeconomics (politics, local economics, level of interest), topography and lay of the land, location of heritage resources (site-specific), location of mineral resources, and technology.

Other sources of information, such as professional journals, publications, and research reports will be used as appropriate.

Circumstances may arise which prompt a review of an indicator. Such actions as extensively seeking data outside the chosen sources could suggest a problem. Adding, removing, or modifying the resource indicators could address deficiencies or opportunities discovered later. Developing technologies or a better understanding of

actual resource interactions may also result in changes to indicator composition or their measures. Evaluating the validity of data and its continued usefulness is part of the management strategy.

Table A2-3 contains examples of data standards and thresholds for resource indicators. Upper and lower indicator limits are based on current available information. BLM will validate these in coordination with specialists, including Working Group specialists. Approaching an upper or lower value will help establish priorities and key BLM with the Working Group to consider the cause(s) and determine if plan decisions play a role in the change.

Table A2-3. Measurement Detail

Indicator	Measure and Trigger			Unit	Frequency
		Lower[1]	Upper[1]		
Elk distribution	Animal distribution Habitat use Movement	[2] [2]	[2] -15% [2]	Location Acres Location	Minimum of 4 times daily for the first year
Elk herd health	Total Calf/cow ratio	[2] [2]	-15% 40	Number Calves/100 Cows	At a minimum biennially
Mule deer distribution	Animal distribution Habitat use Movement	[2] [2]	[2] -15% [2]	Location Acres Location	Dependent on securing sufficient funding for GPS collaring
Mule deer herd health	Total Fawn/doe ratio	[2] [2]	-15% 60	Number Fawns/100 does	At a minimum biennially
Pronghorn distribution	Animal distribution Habitat use Movement	[2] [2]	[2] -15% [2]	Location Acres Location	Dependent on securing sufficient funding for radio collaring
Pronghorn herd health	Total Fawn/doe ratio	[2] [2]	-15% 70	Number Fawns/100 does	At a minimum biennially
		Lower[1]	Upper[1]		
Greater sage-grouse lek use	Presence/absence Population trend Active/inactive	[2]	[2]	Males on leks Wing barrels Number	Annually
Greater sage-grouse population health	Bird distribution Habitat use Movement	[2] [2]	[2] -15% [2]	Location Acres Location	Annually
Livestock Animal Unit Months (AUM)	AUMs used		26,830	AUM	Annually
Wild Horse Population	Total population	415	600	Animals	Biennially
Standards for Healthy Rangelands—Standard 1[3]	Refer to BLM TR-1730 and TR-1734 Series[4]				On a continuing basis

Indicator	Measure and Trigger			Unit	Frequency
Standards for Healthy Rangelands—Standard 2[3]	Refer to BLM TR-1730, TR-1734, and TR-1737 Series[4]				On a continuing basis
Standards for Healthy Rangelands—Standard 3[3]	Refer to BLM TR-1730 and TR-1734 Series[4]				On a continuing basis
Standards for Healthy Rangelands—Standard 4[3]	Refer to BLM TR-1730 and TR-1734 Series[4]				On a continuing basis
Standards for Healthy Rangelands—Standard 5[3]	Refer to BLM TR-1730 and TR-1734 Series[4]				As needed on site-specific basis
Standards for Healthy Rangelands—Standard 6[3]	Refer to BLM TR-1730 and TR-1734 Series[4]				As needed on site-specific basis
Roads and trails creation	Location Miles of new road Miles of new trail Miles of improved road Number of roads Number of trails Type of roads	[5]	[5]		Annually
		Lower[1]	Upper[1]		
Road density	Location Number of roads Acreage of roads reclaimed Number of trails Acreage of tails reclaimed	[5]	[5]		Annually
Changes in stability of dunes	Acreage of dunes Boundary	-244 [5]	1,218 [5]	Acres in open play area	Annually
O/G leased	Acres leased Acres of suspended leases	[5]	[5]	Acres	Ongoing basis; annually
O/G available for leasing	Acres open to leasing	[5]	[5]	Acres	Ongoing basis; annually
O/G production	Number of wells Number of APDs approved MMCF or BBLS production		175/40[6] 175/40[6] [5]	Wells Number	Ongoing basis
Locatable mineral activity	Acreage withdrawn Number of mining claims Acres available for location	[5]	[5]	Acres Number	Ongoing basis

Indicator	Measure and Trigger			Unit	Frequency
Salable mineral activity	Acreage open Number of active operations	[5]	[5]	Acres Number	Ongoing basis
Surface disturbance and disruptive activity	Visual indicators of surface disturbance and reclamation success Levels and location of activity	[5]	[5]		Annually
VRM Classifications	Acreage of classification		0% 10% 30%	Class I ac.[7] Class II ac. [7] Class III ac.[7]	Annually
Recreation use	Number and location of users and vehicles Type of use Periods of use	[5]	[5]	Number	On a continuing basis, reported annually
		Lower[1]	Upper[1]		
Heritage Resources	Prehistoric and/or historic resource number Kind/type Density	[8]	[8]		Per project; on a continuing basis
Native American Concerns	Respected places, TCP or sacred site number Kind/type Density	[8]	[8]		Per project; on a continuing basis

[1]Preliminiary estimates. Lower and upper values will be validated using data collected in the planning area. Revision of the numbers shown in the table is possible.

[2]No quantitative measure is currently applicable. The experience of the resource specialist is used in determining if the related observations are within acceptable bounds until numbers can be confidently assigned to the upper and lower bounds.

[3]Each of the six rangeland standards contains specific indicators (USDI, Bureau of Land Management, Standards for Healthy Rangelands and Guidelines for Livestock Grazing Management for Public Lands Administered by the Bureau of Land Management in the State of Wyoming, August 12, 1997). See Appendix 10 in the final EIS.

[4]Available at http://www.blm.gov/nstc/library/techref.htm.

[5]Data from these indicators do not alone trigger an action but are required in determining the cause behind changes in other indicators that might require action.

[6]The first number indicates total deep wells and the second is the number of coalbed gas wells.

[7]Refer to Table 12.

[8]Every discovery of cultural or historical importance causes a reevaluation of the surface use in the area of the discovery.

Note: Consideration will be given to those occurrences outside BLM's control, such as environment (weather, drought), outside agency jurisdiction/laws, socioeconomics (politics, local economics, level of interest), topography/lay of the land, location of heritage resources (site-specific), location of mineral resources, and technology.

BLM will coordinate data collection, analysis, and summaries with Working Group members.

JMH CAP MANAGEMENT PROCESS

The process described in this section outlines a potential structure for the implementation, monitoring, and evaluation process.

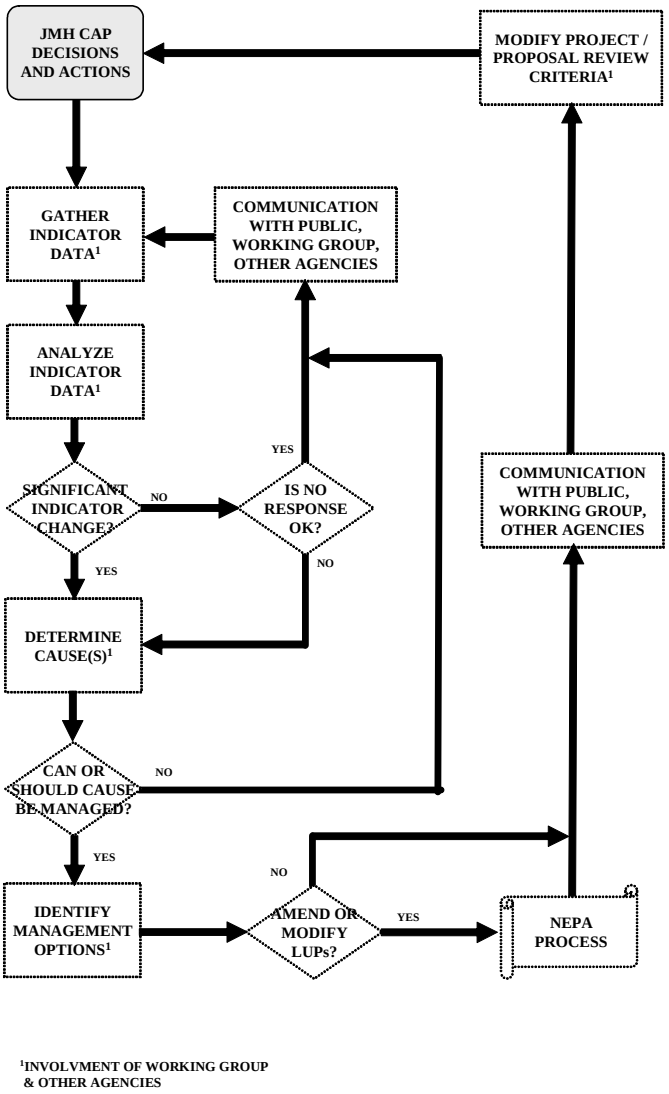
The following guidelines will be used in the implementation, monitoring, and evaluation process:

- Employ available field data and observations in the evaluation of projects and proposals.
- Consider the condition of all resources (as shown by the indicators) before allowing further surface disturbing or disruptive activity.
- Use best projections of impacts associated with the uses of the various resources in the planning area.
- Allow judicious testing of assumptions, practices, policies, and mitigation measures.
- Apply BMPs, mitigation, and COAs developed through the monitoring and evaluation process to use authorizations.

Figure A2-2 presents a flowchart illustrating the general JMH CAP management process. It is designed to take advantage of the elements listed above while conforming to relevant laws and regulations. The following discussion of the elements in Figure A2-2 provides the detail needed to understand and work within the process.

The JMH CAP implementation, monitoring, and evaluation process begins with the adoption of JMH CAP decisions. Where sensitive values exist, and particularly in Areas 2 and 3, surface use activities will be evaluated based on the anticipated impacts and the resource values of the area during the review and approval process. All resulting actions, decisions, or changes in the analysis and decisions on projects or proposals published in the final EIS and ROD become part of the aggregate that makes up the “JMH CAP Decisions and Actions” box shown in the top left corner of the figure.

Figure A2-2. JMH CAP Management Process



The next box down represents the collection of the indicator data. The type and detail of data collection is presented in Table A2-2 and Table A2-3. There may be modifications to the indicators as a result of Working Group input, data analysis, and experience gained from managing the various resources.

Data analysis is the next step shown in the figure. After the data are collected, comparison is made to the existing limits, the JMH CAP assumptions, and other information. Summary values (such as average or standard deviation) and trends are developed at this stage.

The process continues by addressing two related questions. These are illustrated as the diamonds labeled “Significant Indicator Change?” and “Is No Response OK?” The questions direct the data analysis effort when there is either a change (positive or negative) or no change (zero change) in the indicator data.

The first question, illustrated as the diamond labeled “Significant Indicator Change?”, concerns the magnitude or significance of an apparent change. Changes in indicator

values will be compared to threshold values and magnitude of change. A large change or approaching a threshold will be evaluated for significance. Cause of the change will also be considered to ensure the change is a result of authorized or allowed public land uses and not unrelated environmental factors or nonpublic land activities.

The second related question, illustrated by the “Is No Response OK?” diamond, is in response to the determination that an observed change in data is not significant; in other words, essentially no change was measured. A “zero” or no response might be useful in evaluating the success or failure of a management practice. For example, a decision is made to adopt a mitigation measure to benefit a resource but the indicator data continues to show no change. This could indicate a problem with the policy that should be further explored and, if necessary, corrected. Therefore, if a no change condition is encountered, the acceptability of this result is considered. If the lack of response in an indicator is acceptable, the process moves to the information-sharing step, as shown by the up arrow from the diamond. (The box labeled “Communication with Public, Working Group, Other Agencies” is discussed later.) The next step in the process (the box labeled “Determine Cause(s)” seeks to identify the cause of a significant positive or negative change, or an unexpected “zero” response in the resource indicator data. This first involves consideration of the validity of the data and its analysis, and only later attempts to identify the cause of an indicator data change. Possible data errors are misinterpretation, poor measurement methodology, or errors in the selection of a particular indicator. Discovering faulty information and addressing indicator problems early in the process help avoid ineffectual decisions and wasted time.

Once assured that the data response is genuine, the effort turns to identifying the reason behind the new observations or the identified trends. This important task may require technical and investigative skills. A change to the indicators could be the result of a single factor, a combination of activities, or even an unanticipated agent. Hypotheses will be developed, tested, and evaluated based on the accumulated evidence. A team approach may be used to consider all potential aspects.

The question “Can or Should Cause Be Managed?” addresses two situations. First, although a change is measured (and a cause may even be identified), it may be premature to take action. Ecological systems are subject to cycles. An effect occurring in one part of the cycle may have an entirely different effect in another part. It may be appropriate to wait and determine if the effect continues and represents a trend. Second, multiple effects may cause a variety of responses. It may be appropriate to collect more data or refine the data collection to eliminate potential causes.

The decision to react to an indicator change requires identification of the available options. This step is shown in the figure as the box labeled “Identify Management Options.” The development of responses to a manageable situation is expected to involve (to varying degrees) BLM resource specialists; BLM management; outside local, state, and federal agencies; and the JMH CAP Working Group. The task involves identifying and evaluating possible changes in land use or in project/proposal review procedures. Potential actions could include changing stipulations, reducing or increasing certain activity levels, allowing new uses, modifying objectives or measures, or adopting new evaluation criteria. The result is a list of possible modifications or actions that focuses on an identified condition, need, or opportunity.

The “Amend or Modify LUP [Land Use Plan]?” diamond in the figure results from decisions developed in the previous step. If minor modifications are warranted, the

changes are made within the context of the plan. If changes outside the scope of plan analysis or decisions or significant changes to allocations are warranted, the plan may have to be amended. Amendments involve NEPA analysis and public participation opportunities.

Though public and cooperator participation and communication is an integral part of the NEPA process, Figure A2-2 shows that a communications step is entered before the plan is modified or amended, or after a decision is made to take a JMH CAP allowable action. This is indicative of the importance placed on continued involvement of the public; the JMH CAP Working Group; and interested local, state, and federal agencies. A section on the subject of communication and participation is presented later in the appendix.

The final box in the figure (upper right corner) represents the tie between the illustrated process and the resource and case-specific review or approval processes. Labeled "Modify Project/Proposal Review Criteria," the step is the implementation of the decision derived from the reaction to changes in the indicator data. These include such changes as revising thresholds, realigning goals, revising land use restrictions, and restructuring mitigation.

Not explicitly shown in Figure A2-2 are the procedures that relate to specific resource projects, proposals, or applications. Applications for Permit to Drill (APD), rangeland improvement, ROWs, and the other possible surface uses have established review and approval processes. Though tailored for the resource, all project or proposal considerations will share a common element: deliberations will take into account field observations, experience gained from observing the planning area, and the management vision. This recognizes the value of the monitoring effort by using the indicator data to predict and evaluate impacts, and employing field-tested mitigation actions.

As described earlier, use or development of the resources in the planning area will be allowed from the beginning. Data on the impacts of surface disturbing or disruptive activities will be collected and compared with expectations, desired outcomes, or standards. The ultimate goal of the comparison is to determine the effectiveness of current management practices, policies, and prescriptions, and make necessary changes to foster continued success, improve observed results, or further understanding. In cases in which performance standards are still essentially assumptions, the observations are initially critiqued using the values in Table A2-3 as guidelines. As data and experience increase, these may be refined into the more traditional definition of "standard" or "threshold." In addition, the ongoing evaluation of data validity and usefulness is performed to maintain the effectiveness of monitoring resource conditions within the planning area.

Successfully developing performance standards or evaluating conditions within the planning area requires the combined effort of BLM and outside resource specialists. Other governmental agencies may have the expertise and information that enhances BLM ability to perform this task. In addition, the public has a role to play in the process. To help manage the diverse involvement, a JMH CAP Working Group will be formed. This group would not be chartered under the Federal Advisory Committee Act (FACA). Membership would be restricted to employees or officers of a governmental agency or elected officers of state, local, or tribal governments. A more detailed discussion of participation and communication is presented in the next section. However in all cases,

BLM is the final decisionmaker involving federal surface or minerals; this strategy does not affect that responsibility.

COMMUNICATION AND PARTICIPATION

BLM has a longstanding policy to encourage the public to participate in the agency's day-to-day activities. The JMH CAP implementation, monitoring, and evaluation process supports public participation. Comments, suggestions, concerns, and issues may be provided or raised at any time. Involvement of the public, stakeholders, state, tribal, and local governments, and other agencies will aid in the development of successful management actions tuned to the planning area.

Communication and outreach will make use of traditional and electronic means of sharing information and gathering input. As shown in Figure A2-2, the decision evaluation process has critical public information steps. Such items as updates to the indicator database, management decisions, applications for land use, and decisions related to the JMH CAP will be available from links on the BLM Wyoming State Office and Rock Springs Field Office websites. Hard copies of this material will also be maintained at the Rock Springs Field Office to accommodate those without Internet access.

Meetings are a valuable component of the management strategy. These provide an excellent opportunity for BLM and public interaction and are planned semiannually as needed, for the first 3 years. As a kickoff, an informational meeting will be held within 3 months following signing of the JMH CAP ROD. The meeting will focus on the management approach and how it will work in the planning area. Subsequent meetings will mainly be concerned with information dissemination. A "town hall" format will be used to allow interested individuals to express opinions or concerns about the planning area. A record of the informational meetings will be made.

The public can also participate in the management of the planning area through the JMH CAP Working Group. It is anticipated that group members will express the views of the public and act in their interest, thus involving citizens in the management process.

The JMH CAP Working Group is involved in many facets of the management strategy, including data collection and analysis, development of management practices, and input on land use proposals. Through regular meetings, the Working Group can consider numerous topics affecting the planning area, including mutual goals, policy coordination, resource conditions, pending actions or decisions, and opportunities for further cooperation. The Working Group will also act to monitor BLM adherence to the management strategy and suggest remedies.

The following is a preliminary membership list for the JMH CAP Working Group. Other participants may be added later:

- One representative from each state agency, selected by the Wyoming Governor's office
- Three representatives from the BLM Rock Springs Field Office
- One representative from each of the three conservation districts
- One representative from both the local and county governments in Sweetwater County

- One representative from both the local and county governments in Sublette County
- One representative from both the local and county governments in Fremont County
- One representative from each Native American tribe.

The exact role of the Working Group will be defined by the group itself. Developing its charter will be the main order of business at the first meeting. At a minimum, the Working Group would provide a point of contact (POC) with state and local agencies (e.g., WGFD) that can help analyze and interpret the data collected in the planning area, develop or evaluate proposed performance standards, and provide specific input to planning decisions.

APPENDIX 3. RECLAMATION AND MONITORING

RECLAMATION GOALS

Reclamation goals are to stabilize disturbed sites by reducing runoff and erosion; reestablish healthy, vigorous ground cover on these areas to its original condition or better by using native plant species; restore wildlife habitat and livestock forage; and restore visual quality to meet established visual resource management objectives on all areas of surface disturbance, reducing visual contrast and enhancing aesthetic values.

RECLAMATION OBJECTIVES

To achieve the above goals, disturbed sites would be reclaimed with perennial native grasses/forbs/shrub species reflecting the species naturally growing on the site before disturbance occurrence. The goal is to achieve 100 percent of predisturbance cover of desired species, with bond release occurring when 80 percent of the predisturbance cover exists and the site is judged to be on its way toward 100 percent. Objectives may be modified as new information is acquired or if needed to conform to Jack Morrow Hills Coordinated Activity Plan (JMH CAP) objectives.

PLANNED ACTIONS AND REQUIREMENTS

Surface disturbing projects would be required to use the best management practices described in Appendix 5.

All surface disturbing and reclamation activities that would occur within the Steamboat Mountain Area of Critical Environmental Concern (ACEC), Greater Sand Dunes ACEC, South Pass Historic Landscape ACEC, or Oregon Buttes ACEC would meet the vegetation and habitat management objectives specific to that ACEC.

Within the ACECs and overlapping crucial elk winter range and parturition areas, revegetation of disturbed areas with big sagebrush and other shrubs would be required to maintain and/or improve big game habitat. Planting of shrubs would be required to the same density that occurred onsite before disturbance.

Before any onsite activity, an Erosion Control, Revegetation, and Restoration Plan (ERRP) (outlined in the Green River Resource Management Plan [RMP] Record of Decision [ROD], Appendix 5-3) may be required. The operator and Bureau of Land Management (BLM) would perform an onsite inventory in critical areas, such as shrub and cushion plant communities, to document plant species composition and cover values. This would establish a baseline standard to use in developing postdisturbance plant composition and cover values, seed mixes, and site information required for the restoration plan. Reseeding would be performed with plant species native to the vegetation communities of the planning area.

RECLAMATION MONITORING

All sites would be monitored by BLM for reclamation success under the standard BLM guidelines. Inspections would be based on the standard practices indicated in Appendix 5.

Monitoring of a reclaimed area is a joint effort between BLM and operators. BLM would inspect the site during the initial seeding and the following growing season for compliance with the reclamation requirements. The operator is responsible for notifying BLM as soon as the site has met the reclamation objectives identified for the sites. If BLM agrees that the site's reclamation objectives have been met, the operator is released from any further reclamation responsibilities. If the reclamation objectives have been met, further treatment may be prescribed. Sensitive areas, such as basin big sagebrush, mountain mahogany, chokecherry, serviceberry, or bitterbrush communities, would be monitored on an annual basis by BLM and the lessee/operator/permittee until shrubs are reestablished onsite. Specific monitoring techniques in critical shrub areas would be developed.

REVEGETATION

Standard native plant seed mixes would be developed for each ecological site type in the planning area; however, more specific seed mixes could be designed as needed as part of the ERRP process. In sensitive areas, plantings of containerized native shrub seedlings may be required.

The revegetation time frames shown below are assumed for reclaimed sites in the respective precipitation zones of the planning area. These time frames represent the minimum amount of time it would likely take to see reestablishment of a native plant community similar in composition to the one existing onsite before disturbance. These rates do not assume that the plant community would be reestablished to the same height and cover value. In some cases, reestablishment of a healthy, vigorous grass stand might provide better forage values than existed before disturbance.

- 7–9" Precipitation Zone
  - Typical establishment of perennial native grasses/forbs in 3 to 5 years
  - Typical establishment of shrub species in 20 to 30 years.
- 10–14" Precipitation Zone
  - Typical establishment of perennial native grasses/forbs in 2 to 3 years
  - Typical establishment of shrub species in 20 to 30 years.

It is expected that basin big sagebrush, chokecherry, and serviceberry shrubs removed during site disturbance would not likely be reestablished to predisturbance size and cover rates during the life of this plan. Therefore revegetation of the site would not necessarily replace the wildlife forage/browse values that were found on the site predisturbance (e.g., the replacement time of the basin big sagebrush to reach the same height and cover values that existed before disturbance might be as long as 70 years or more). However, it is expected that adherence to reclamation requirements would eventually provide for the return of these areas to shrub communities.

STABILIZED DUNES

Disturbing stabilized dunes would create blowout areas that would be difficult to reclaim. Plant succession in dunes is a very long process, depending on stabilizing the dune and establishing appropriate pioneer species, which then build up nutrients and organic matter in the sand-soil. Phases of dunal succession last for hundreds of years, until reestablishment to predisturbance vegetation occurs. Shrub communities such as basin big sagebrush, mountain mahogany, and bitterbrush are documented to require 100 to 150 years to become reestablished on activated sand dunes (Chadwick 1965). It is unknown how successful artificial revegetation may be on the dunes. For that reason, surface disturbing activities on stabilized, vegetated dunes are not recommended. However, if such activities do take place, it is recommended that at the time of permitting, the site ERRP and the Application for Permit to Drill (APD) reclamation plans include what extra measures would be taken to ensure site stability. These methods could include erosion control matting, soil stabilizers, and/or snow fences.

ACTIVE DUNES

Surface disturbing activities that would require reclamation in the active dune field are not recommended, as the dunes continue to shift and move. Road construction and new access might not be feasible. Even if sand stabilization could be temporarily achieved in the immediate vicinity of the disturbance, the nearby shifting dunes would likely interfere with the activity. In addition, the dunal ponds (flockets) could be affected, and these would be extremely difficult to reclaim and revegetate.

MONITORING OIL AND GAS DEVELOPMENT, ROADS, WILDLIFE, RANGELAND, GROUNDWATER, AND WATERSHED

To meet the objectives of the JMH CAP and to conform with the Green River RMP, monitoring would be accomplished by BLM and/or required of operators (oil and gas, rancher, right-of-way [ROW] applicants, etc.). Monitoring is provided for in the Code of Federal Regulations (40 CFR 1505.2(c) and 1503.3). The regulation, in its requirements relative to the National Environmental Policy Act (NEPA) and agency decisionmaking, states, “a monitoring and enforcement program shall be adopted and summarized where applicable for any mitigation” (1505.2(c)).

BLM would conduct extensive monitoring inspections of construction, drilling, and rehabilitation operations, through a compliance officer and/or an interdisciplinary team, to ensure acceptable attainment of objectives. The monitoring inspections would be based on the standard practices described in Appendix 5.

Specific activities and resources to be monitored include oil and gas, wildlife, and forage.

Oil and Gas Development

Reclamation: All past, present, and future reclamation would be monitored to ensure that the following goals have been met with regard to successful revegetation and restoration.

- Immediate site stabilization to limit wind and water erosion
- Establishment of vigorous stands of desirable plant species to limit invasion by noxious and invasive weeds
- Implementation of noxious and invasive weed control in cooperation with the county Weed and Pest Control Agent
- Establishment of vegetation consistent with wildlife, livestock, and wild horse needs
- Reduction of visual contrast and enhancement of aesthetic values
- Compliance with site-specific revegetation requirements
- Regenerating and self-supporting vegetation
- Long-term shrub and big game habitat establishment.

Monitoring of a reclaimed area is a joint effort between BLM and the operator. BLM would inspect the site during the initial seeding and the following fall for compliance with the reclamation requirements. The operator is responsible for notifying BLM as soon as the site has met the reclamation objectives identified for the site. If BLM agrees that the site's reclamation objectives have been met on wells where final reclamation has been completed, the operator is released from any further reclamation responsibilities. If BLM does not feel the reclamation objectives have been met, further treatment may be prescribed. The reclamation monitoring goal for revegetation would be to adequately characterize ground cover and vegetation canopy cover and to determine vegetation species occurrence.

Data are compared to acceptance criteria as follows: Reclamation vegetative cover is 50 percent of predisturbance vegetative cover at 2 years and at 80 percent of predisturbance vegetative cover at 5 years. Other acceptance criteria may be adopted as a result of a reclamation technical review.

Monitoring would consist of a step-point transect that would record ground and canopy cover in the reclaimed area.

During monitoring, species would be identified and recorded in the reclaimed area to determine the composition. These data would be compared with the species that were in the seeding requirements. Evaluations would be made of the effectiveness of the seeding effort and the appropriateness of the seed mix.

Erosion condition ratings for the reclaimed sites would be evaluated at the same time the vegetation is monitored. This would be performed by visually assessing the amounts of soil movement, surface rock, pedestaling, flow patterns, and rills (BLM's Erosion Condition Class Rating system).

Roads

As a continuing monitoring effort, all existing access roads would be continually evaluated to determine whether they (1) were still necessary, (2) were safe, and (3) have erosion problems. The roads would be reclaimed or maintained as appropriate. It

would be the responsibility of the authorized users to conduct preventive and corrective road maintenance throughout their operations, on the roads permitted for their use.

OTHER MONITORING EFFORTS

The following subsections identify additional monitoring efforts that will be carried out by BLM and other parties. While not exhaustive, these monitoring efforts will be used to more effectively satisfy the needs of the JMH CAP implementation, monitoring, and evaluation management strategy (Appendix 2). For a comprehensive inventory of the additional monitoring efforts that will be instilled to measure the management indicators, refer to Appendix 2.

Wildlife

The scheduling of wildlife monitoring activities depends on the implementation of habitat improvement treatments. Specific monitoring practices would be as follows:

- Big game distribution within the planning area would continue to be monitored annually. Monitoring would occur at a level adequate to obtain estimates of mule deer densities year-round and particularly during midwinter. Big game classification information would be provided by the Wyoming Game and Fish Department (WGFD).
- At least one permanent-line intercept transect with a belt transect and permanent photo points would be established within each treatment area before disturbance and after reclamation treatment implementation. From these permanent transects, post-treatment estimates of browse species canopy cover, browse species density by age class, and browse species hedging classes within each treatment area would be obtained. Monitoring intensity would be at least once every 3 years. Coordination with WGFD would occur.
- Two permanent exclosures (one livestock exclosure and one livestock and big game exclosure, actual size to be determined) would be established within the sagebrush-grassland, sagebrush-salt desert shrub, and mountain shrub-sagebrush types within the planning area. Within these exclosures, all the vegetative characteristics outlined in the bullet line above would be monitored, as appropriate, at least once every 5 years. Construction and monitoring responsibilities would be coordinated with WGFD.
- Utilization levels within and adjacent to treated areas (key areas) would be monitored by BLM using currently accepted BLM methods.

An evaluation to assess fluid mineral exploration and development activity and its effects on elk and their movement patterns, on elk use of habitat (potential fragmentation), on other wildlife species and habitats, and on other sensitive resources would be conducted.

The evaluation would incorporate information from the elk studies conducted within the JMH CAP planning area (section 3.1.6.1.3 and below); application of the Standards for Healthy Rangelands; proper functioning condition (PFC) determinations; and other activities and uses. Appropriate mitigation would be applied to all activities to meet planning area management objectives. If the

evaluation concludes that planning area management objectives are not being met, management will be adapted to address the situation. Adjustments could be made to ensure that further activity does not cause fragmentation and abandonment of habitat and still meet management objectives. Consideration would be given to such actions as identifying new and innovative mitigation measures, or identifying areas that either would not be leased or would be leased with a no surface occupancy (NSO) stipulation. Should management objectives change, it may become necessary to modify, amend, or revise the CAP.

Jack Morrow Hills GPS Elk Monitoring Study

BLM, in a cooperative effort with WGFD and the University of Wyoming Cooperative Wildlife Research Unit, has equipped 29 female elk with global positioning system (GPS) collars to monitor a representative sample of the Steamboat elk herd to determine the effects of development and various types of human disturbance. This effort will facilitate the implementation, monitoring, and evaluation management strategy (Appendix 2) recommended in the Proposed JMH CAP.

Greater Sage-Grouse Population Monitoring and Assessment[1]

One of the primary components of an effective greater sage-grouse conservation strategy will be the continued development and utilization of a standardized population monitoring program capable of producing meaningful, rigorous status and trend information. These data should also be suitable for aggregate analysis at the statewide level and comparison to similar data sets from other states. WGFD has recently developed such a database. The database incorporates lek survey and count data, as well as harvest data, including determination of the age and sex from wings deposited in hunter collection barrels. As this database comes into use, it should provide the basis for both local and statewide analysis of greater sage-grouse population status and trend. The information collected in the JMH planning area is intended to be compatible with the statewide database.

Breeding Populations

Greater sage-grouse gather on traditional display areas (leks) each spring, affording the opportunity to track breeding populations. Possible methods of monitoring breeding populations include lek censuses (annually counting the number of male greater sage-grouse attending leks in a given area), lek complex routes (annually counting the number of male greater sage-grouse on a group [complex] of leks that are relatively close and represent part or all of a single breeding population), and lek surveys (annually counting the number of active leks in a given area). All monitoring procedures are conducted during early morning (1/2-hour before to 1 hour after sunrise), in reasonably good weather (light or no wind, partly cloudy to clear) from early March to early May. Timing is dependent on elevation of leks and persistence of winter conditions. Greater sage-grouse will begin displaying in late February at lower

1 Based on “Sage Grouse Methodology Committee Report on Sage Grouse Management Practices” to the 1996 Western States Sage Grouse Workshop, Gillette, Wyoming, and “Monitoring of Sage Grouse Habitats and Populations,” Draft by J.W. Connelly, K.P. Reese, and M.A. Schroeder, January 2002. Metric measures have been converted and rounded to English units for this appendix.

elevations with milder climates and in years with mild winter weather. Lek attendance will persist into early or mid-May at higher elevations.

All lek data should be collected and reported as defined below.

Lek. A traditional courtship display area attended by male greater sage-grouse in or adjacent to sagebrush-dominated habitat. Designation of the site as a lek requires observation of two or more male greater sage-grouse engaged in courtship displays. New leks would be confirmed by a survey conducted during the appropriate time of day and during the strutting season.

Lek Complex. A group of leks in close proximity between which male greater sage-grouse may be expected to interchange from one day to the next. A specific distance criterion does not yet exist.

Lek Count. A census technique that documents the actual number of male greater sage-grouse observed on a particular lek or complex of leks using the methods described below.

Lek Survey. A monitoring technique designed primarily to determine whether leks are active or inactive; obtaining accurate counts of the numbers of males attending is secondary.

Annual Status

Each year a lek will be determined to be in one of the following status categories:

Active. Any lek that has been attended by male greater sage-grouse during the strutting season. Presence can be documented by observation of birds using the site or by signs of strutting activity.

Inactive. Leks where it is known that there was no strutting activity through the course of a strutting season. A single visit, or even several visits, without strutting grouse being seen is not adequate documentation to designate a lek as inactive. This designation requires either an absence of birds on the lek during multiple ground visits under ideal conditions throughout the strutting season or a ground check of the exact lek site late in the strutting season that fails to find any sign (droppings/feathers) of strutting activity.

Unknown. Leks that have not been documented either active or inactive during the course of a strutting season.

Classification of leks will be defined based on the WGFD criteria.

Locating Leks

Leks can be located by searching from the ground or air from early March to early May.

Helicopters or fixed-wing airplanes would be used for air searches where appropriate.

Transects should be flown at 300 (or less) feet above ground level.

Lek searches would also be conducted from the ground by driving along roads in suspected or known breeding habitat and stopping every 1/2-mile to listen for sounds of breeding grouse. In less accessible areas, searches can be made from a mountain bike, trail motorcycle, four-wheel all-terrain vehicle, horseback, or on foot. On a calm morning, breeding greater sage-grouse may be heard at a distance of almost 1 mile. All openings or areas of less dense sagebrush should be searched for breeding birds with binoculars or a spotting scope.

Lek Counts. Lek counts are a common means of monitoring greater sage-grouse populations. Lek counts document the actual number of male greater sage-grouse observed on a particular lek or complex of leks. A lek complex is a group of leks in close proximity between which male greater sage-grouse may be expected to interchange. At this time we are not proposing to participate in the lek counts. However, participation is being considered as an option for future monitoring. If lek counts are conducted, BLM will use the WGFD protocol.

Lek Surveys. Ideally, all greater sage-grouse leks would be “count leks.” However, some greater sage-grouse breeding habitat is inaccessible during spring because of mud and snow or are so remote that leks cannot be routinely counted. Other leks may be situated in topography or vegetation that does not allow an accurate count of males from any vantage point. In addition, time and budget constraints limit the number of leks that can be visited. In these cases lek surveys are the only reliable means of monitoring populations. Lek surveys are designed primarily to determine whether leks are active or inactive. Only one visit to the lek is required, and obtaining accurate counts of the numbers of males attending is secondary. Surveys require less manpower and time than lek counts. They can also be conducted from fixed-wing aircraft or helicopter. Because obtaining a peak male count is not a priority, surveys of leks not on count routes can begin with initiation of strutting in early March and extend into early-to-mid May, depending on the site and spring weather.

Where practicable, lek surveys would be conducted in the same manner and during the same time period each year. In other words, they should not be conducted from a fixed-wing aircraft one year and a helicopter the next year, or in early March one year and May the next. The date and time should be recorded for each survey. Coordinates (currently UTM) for each lek encountered would be noted, as well as any other information that observers might consider important.

Activity status of located leks would be checked by looking for signs of strutting activity. This can be conducted at any time of the day and for a short period after the strutting season.

The frequency with which known leks are surveyed would be based on manpower, budgets, and rates of habitat alteration or development. Remote leks would be surveyed at least once every 3 years, others more frequently. Working with cooperators and interested publics can provide the opportunity to use volunteers to survey or count leks and thus increase data collection efforts. The Wyoming Wildlife Federation “Adopt-a-Lek” program has been shown to provide a pool of reliable volunteers. Volunteers should be properly trained in monitoring techniques to ensure quality data and prevent disruption of breeding activity.

Winter Populations

Unlike breeding populations and production, no widely accepted methods for assessing winter populations exist. In part this is because birds may be spread out over large areas during mild winters but concentrated in a relatively small proportion of the area in severe winters.

Probable winter use areas can be searched by four-wheel drive vehicle, snowmobile, or on foot to document greater sage-grouse winter habitat. Aerial surveys using either a fixed-wing aircraft or helicopter may also be effective in identifying greater sage-grouse winter habitat. Data collected should include, at least, approximate flock size and location. In addition, cover type (including sagebrush species present), topography, and snow depth data also are valuable but may not be possible to obtain from the aerial observations. Data should be acquired over a series of years with different snow conditions to give a more complete picture of winter grouse distribution.

Data Analysis. As part of the implementation, monitoring, and evaluation management strategy for the JMH CAP planning area, BLM initially will concentrate efforts in identifying leks and locations of wintering birds. Funding would be pursued for a radio telemetry and/or GPS collar study to precisely monitor the birds' movements and habitat use.

The development of the Wyoming greater sage-grouse database has facilitated data storage, retrieval, analysis, and reporting on both regional and statewide levels. All current and historical data will be submitted to the state to be entered into the database.

Rangeland

Monitoring in conformance with the application of the Standards for Healthy Rangelands would be accomplished. Monitoring plans would be developed as part of allotment management plans (AMPs), grazing plans, and permit terms and conditions as appropriate. Monitoring plans would be developed to assess progress toward meeting, and in accordance with, JMH CAP objectives. All rangeland monitoring activities would use approved BLM methodologies and could include actual use, utilization, climate, trend, and use supervision.

Additional key areas would be identified on a case-by-case basis, and monitoring studies could be changed as needed.

Groundwater

Plans for groundwater data collection in this area could be initiated in conjunction with additional development or where groundwater monitoring is needed.

BLM currently requires surface casing and cement through the Wasatch Formation, or isolation of other zones from the Wasatch, in an effort to protect the water-bearing zones in that formation. The Wasatch is the chief source for groundwater in the area.

Groundwater data collection would aid in understanding the area's aquifer systems. The Wasatch aquifer system includes many discrete water-bearing sandstone lenses separated by relatively impermeable beds. The extent of the groundwater flow between

these permeable sandstones is not known. Little is known about deeper aquifers of Mesozoic and Paleozoic age; this includes sandstones of Cretaceous and Jurassic periods and carbonates of Paleozoic age. Existing and abandoned oil and gas wells have penetrated and/or been completed in those various sandstone and carbonate intervals. Data from these wells (wireline logs and drill stem tests) can help to understand the hydrogeology of these deeper rocks.

Interformational groundwater flow may exist because of the number of wells penetrating sandstones and carbonates containing groundwaters of different qualities or containing hydrocarbons. Several fields in the area produce hydrocarbons and some water from formations below potential aquifers containing better quality groundwater (lower total dissolved solids). For example, the Fort Union Formation and Mesaverde Group are below the Wasatch Formation. Hydrostatic pressure differences can cause interformational groundwater flow. Improper oil and gas well completion and abandonment procedures can exacerbate interformational groundwater flow.

BLM policies comply with state requirements concerning the use and protection of groundwater. Federal laws and regulations (including the Federal Land Policy and Management Act [FLPMA] and executive orders) define BLM's responsibility relative to groundwater. BLM has authority and responsibility to monitor activities to protect and enhance the quality of the environment. Development of oil and gas leases have the potential for environmental quality problems, such as groundwater contamination.

Owners/operators of coalbed natural gas (CBNG) wells or other developments that require the extraction or discharge of water may need to sample nearby water wells on a periodic basis, depending on the individual project and state regulations. This data will be provided to all appropriate agencies in a timely manner.

Requirements for Green River Basin Coalbed Natural Gas Units

Operators of CBNG projects may be required to obtain site-specific groundwater data. These data may include, but are not limited to, obtaining initial, aquifer-specific pressure (water level) data, obtaining aquifer-specific water samples for chemical analyses, and monitoring aquifer-specific pressure and water quality data by obtaining periodic pressure measurements and water samples.

The general groundwater and water quality requirements are as follows:

1. Groundwater pressure and water quality data shall be collected from the first sandstone aquifer underlying the deepest coalbed that will be developed in the area.

2. Groundwater pressure and water quality data shall be collected from the deepest coalbed(s), or from other coalbeds, if deemed necessary by the Authorized Officer (AO), that will be developed in the area.

3. Groundwater pressure and water quality data shall be collected from the first sandstone aquifer above the shallowest coalbed that will be developed in the area.

The target sandstone aquifers and coalbeds will be identified by the AO from open-hole wireline logs obtained from the CBNG well that is being tested, or from a dedicated groundwater monitoring well. The minimum acceptable wireline log suite for this purpose shall consist of gamma ray, caliper, spontaneous potential, and deep and shallow resistivity curves.

Intermittent groundwater monitoring and sampling may be required for the sandstones and coalbeds described above, if deemed necessary by the AO. Groundwater monitoring and sampling shall be made in dedicated groundwater monitoring wells. To minimize surface disturbance, the AO may authorize completion of as many as three separate zones in a single monitoring well. In addition the AO may require continuous groundwater monitoring in at least one of the sandstone aquifers and one potentially productive coalbed. To facilitate this continuous monitoring and sampling, the well should be equipped with packer and tubing configurations that will allow access to the sandstone aquifer below the producing coalbeds and the sandstone aquifer above the potentially productive coalbeds. Intermittent or continuous monitoring of groundwater pressure and water quality data shall not be required for specific horizons if—

1. The sandstone aquifer is more than 100 feet stratigraphically above or below the nearest potentially productive coalbed(s).
2. The nearest public supply, domestic, or agricultural water well with a valid groundwater right from the Wyoming State Engineer from that specific horizon is more than 2 miles from the CBNG project.
3. A specific horizon contains Class III groundwater—water containing more than 5,000 milligrams per liter of total dissolved solids.

An operator developing a CBNG project shall obtain a suite of open-hole wireline logs from at least one well per township. The wells from which the wireline logs are obtained shall be at least 4 miles apart. The wireline logs shall be run from the surface to a depth of 100 feet below the base of the deepest coalbed that the operator plans to develop for CBNG production. The wireline logs shall be calibrated and properly scaled according to industry standards and shall include, at a minimum, a high-resolution resistivity with spontaneous potential and gamma ray curves and a high-resolution neutron density with photoelectric, caliper, and gamma ray curves. The density curve logging speed through the coals shall be no greater than 30 feet/per minute. Paper copies of the logs shall be submitted to the Rock Springs Field Office, and digital (las format) and paper copies shall be submitted to the Wyoming State Office Reservoir Management Group.

The operator developing a CBNG project may be required to obtain one whole-seam core from the major coalbed that is expected to produce CBNG. The cores will be properly collected for desorption, adsorption, and other standard CBNG analyses, such as proximate analysis, coal rank, cleat orientation, initial saturations, and coal permeability. Coal density/specific gravity measurements will be provided for all core samples to calibrate log densities and for correlation with gas content measurements. All data and analyses should be submitted to the Rock Springs Field Office and the Wyoming State Office Reservoir Management Group as soon as they are available.

The operator developing a CBNG project may be required to obtain initial reservoir pressure measurements of the primary coalbed from the initial CBNG well drilled and every tenth well drilled thereafter. The pressure measurements shall be made using a

bottom-hole pressure device, and pressure measurements in the initial CBNG well will be made prior to commencing production from any CBNG well drilled in the project area. These reservoir pressure measurements, and any other reservoir pressure measurements, obtained by the operator shall be submitted to the Rock Springs Field Office and the Wyoming State Office Reservoir Management Group.

Watershed

Plans for watershed monitoring would be initiated in the area when necessary. Watershed monitoring needs would be included in all appropriate resource monitoring plans.

APPENDIX 4. PROCEDURES FOR GRANTING EXCEPTIONS IN AREAS OF SEASONAL RESTRICTION

These procedures for granting exceptions in areas of seasonal restriction apply to all surface disturbing and disruptive activities. Some examples include leasable and salable mineral exploration and development, geophysical exploration, motorized vehicle use and recreation, heavy equipment use and construction (related to such things as timber sales, range or wildlife habitat improvements, and prescribed fire), and the development of roads and other types of rights-of-way (ROW).

Applications are reviewed for conformance with the Green River Resource Management Plan (RMP) and to identify resource concerns. The appropriate level of National Environmental Policy Act (NEPA) analysis is identified.

Procedures and criteria for granting exceptions to seasonal restrictions are described below.

PROCEDURES FOR HANDLING REQUESTS FOR EXCEPTION FROM SEASONAL STIPULATIONS AND/OR CONDITIONS OF APPROVAL (COA)

These procedures apply to any request for exception from seasonal stipulations for a surface disturbing or disruptive activity. A request for exception must be initiated in writing by the operator or project proponent. The request will include justification for the proposed change. When requested concurrently with an application (typical for situations involving oil and gas lease stipulations), the exception is considered as part of the project proposal in RMP and NEPA compliance review. For separate requests, the request is considered as a unique action and is analyzed and documented individually for RMP and NEPA compliance. In both cases, processing includes coordination with the Wyoming Game and Fish Department (WGFD).

The unpredictability of such factors as weather and animal movement and condition precludes analysis of requests related to wildlife far in advance of the time periods in question. Analyses of requests include review of potential mitigation measures and alternatives (traffic restrictions, alternative scheduling, staged activity, etc.).

The final determination for granting an exception to wildlife stipulations and mitigation measures will be a decision by the Bureau of Land Management (BLM) after consultation with WGFD.

CRITERIA FOR CONSIDERING EXCEPTIONS TO SEASONALLY RESTRICTED ACTIVITY

Currently, land use activities within the Rock Springs Field Office may be authorized with seasonal restriction(s) developed to provide protection of natural resources. Protective wildlife seasonal restrictions are developed consistent with statewide dates.

For example, big game crucial winter ranges are protected from November 15 to April 30. This restriction does not close an area to development but is in place to protect big game if weather or other habitat needs dictate that closure is necessary.

The Jack Morrow Hills Coordinated Activity Plan (JMH CAP) planning area has about 205,750 acres that are subject to seasonal restrictions. Following are some of the factors considered by the wildlife biologist upon receiving a request for exception.

- Are the factors leading to the inclusion of the wildlife seasonal restriction still valid?
- What are the dates for the proposed exception/relief?
- Animal presence or absence (may include proximity)
- Data indicating past use from previous years
- Sign of use (droppings or feathers).

General Considerations for Granting Exceptions to Seasonal Restrictions

Elk

Short-term exceptions are more likely to be considered early (November 15–December 1) and late (April 1–April 30) in the winter season, depending on weather conditions and animal occupancy. Exceptions would not be granted if requested from December 1 to March 1 unless unusually mild winter conditions prevail. Exceptions in elk calving areas (May 1–June 30) will not be granted because of elk sensitivity to disturbance. Displacement in open habitats is much greater than in woodlots or forests, hence restricted areas will encompass larger areas in open habitat.

Moose

Exceptions will depend on weather conditions and presence of animals. Moose habitat is also given protection through riparian and stream buffer zone stipulations (500 feet from live water and riparian habitats).

Antelope

Consideration will be given to situations where physical barriers (highways, fences, rivers, canyons, etc.) limit the animals' ability to move into other suitable habitats. In the case of developing oil and gas fields with proposed intensive or disruptive disturbances, BLM and WGFD coordination will be required to ensure that cumulative disturbance and/or range competition with other big game and livestock will not affect herd unit objectives.

Deer

Short-term exceptions may be granted early (November 15–December 1) and late (April 1–April 30), depending on weather conditions and animal occupancy, using the previously discussed criteria. Exceptions can be granted for north slopes, deep snow areas, or other habitats within crucial ranges that preclude use by wintering deer and in which access roads are determined to have little adverse impact.

Big Game Winter Ranges

The criteria used for crucial big game winter range are those areas that are available; relatively intact; and winter most of the population at its objective, in adequate body condition, 8 or more years out of 10. The time frames are based on a statewide standard which allows the authorizing officer (AO) the option of adjusting the time frame for the seasonal restriction if local winter conditions warrant.

Criteria to Consider for Granting Exceptions on Winter Ranges

- Animal presence or absence

- Animal condition

- Weather severity
  a. Snow conditions (depth, crusting, longevity)
  b. Seasonal weather patterns
  c. Wind chill factors (indication of animals' energy use)
  d. Air temperatures and variation
  e. Duration of condition
  f. Forecasts (long-range for duration of winter).

- Habitat condition and availability
  a. Animal density (high or low)
  b. Forage condition (good or poor)
  c. Competition (livestock and other wildlife)
  d. Forage availability
     – Amount of forage
     – Snow depth
  e. Whether livestock use has decreased available winter forage
  f. Whether or not there is suitable and ample forage immediately available and accessible nearby that is not being used.

- Site location
  a. Likelihood of animals habituating to activity
  b. Presence of thermal cover, wind cover, and other such factors
  c. Proportion of winter range affected
  d. Location of site within the winter range
  e. Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact.

- Timing
  a. Early in winter season
  b. Nearing end of winter season
  c. Kind and duration of disruptive activity expected
  d. How much remains of the winter when the activity is likely to occur.

Raptors

Exceptions to the seasonal restriction of February 1 to July 31 for raptor nests may be granted, or the timing adjusted, depending on the nesting chronology of individual species, nest site location, and topography. Inactive nests can be excepted, as may certain types of short-term, minor disruptive land use activities that are not anticipated to affect nesting success.

Greater Sage-Grouse

Leks: No disruptive activities are allowed on leks, or within 1/4-mile of the perimeter of leks from March 1 to May 15 between the hours of 8 p.m. through 8 a.m. daily, to prevent disturbance to breeding greater sage-grouse.

Criteria to Consider for Granting Exceptions for Leks

Exceptions to lek timing stipulations could be granted if the activity does not adversely affect the use of the habitat by greater sage-grouse.

Exceptions for disruptive activities during strutting (March 1 through May 15, from 8 p.m. through 8 a.m.) may be considered. Depending on weather conditions, occupancy by the birds, or conditions that preclude occupancy by the birds, an exception for use in greater sage-grouse lek areas could be granted, or the time of year or time of day stipulation extended, dependent on local conditions.

Weather conditions may alter the actual times the area is used by the birds. Cloudy or foggy weather may cause the greater sage-grouse to strut longer in the day, whereas bright moonlit nights could provide an opportunity for strutting before dawn. The actual timing of this stipulation can be modified depending on weather conditions, such as fog and cloudy conditions or clear, bright moonlit nights.

Nesting/Early Brood-Rearing: No disruptive activities are allowed in greater sage-grouse nesting/early brood-rearing habitat from March 15 to July 15.

Criteria to Consider for Granting Exceptions for Nesting/Early Brood-Rearing

Exceptions could be granted for areas not containing vegetation suitable for nesting/early brood-rearing, provided the actual nesting/early brood-rearing areas are not affected. For example: biologists conducting the field review find the location is in the middle of a greasewood flat. This would not be suitable nesting habitat for greater sage-grouse, so an exception to the stipulation could be granted.

Exceptions for disruptive activities in nesting/early brood-rearing habitat could be considered if the action does not adversely affect the use of the habitat by the greater sage-grouse.

Specific criteria include—

- Habitat condition and availability.
  a. Forage condition (good or poor; amount of forb growth)
  b. Amount of residual grass cover

c. Competition (livestock and other wildlife)
d. Whether grazing has decreased available forage
e. Whether or not there is suitable and ample forage immediately available and accessible nearby that is not being used.

- Site location.
  a. Likelihood of animals habituating to the activity (for example: birds may habituate to a single pickup truck going into an area on a regular basis, but would not habituate to very load noises or fast heavy traffic)
  b. Proportion of nesting/early brood-rearing habitat affected
  c. Location of site within the nesting/early brood-rearing habitat
  d. Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact
  e. Juxtaposition to burns or other habitat alterations that decrease the available sagebrush.

- Timing.
  a. Early in breeding season
  b. Nearing end of the breeding season
  c. Kind and duration of disruptive activity expected
  d. How much remains of the breeding season when the activity is likely to occur.

Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects.

Winter Concentration Areas: Disruptive activities are prohibited in greater sage-grouse winter concentration areas from November 15 through March 14.

Criteria to Consider for Granting Exceptions for Winter Concentration Areas

Exceptions for disruptive activities in winter concentration areas could be considered if the action does not adversely affect the use of the habitat by the greater sage-grouse.

Specific criteria include—

- Weather severity.
  a. Snow conditions (depth, crusting, longevity)
  b. Seasonal weather patterns
  c. Wind chill factors (indication of animals' energy use)
  d. Air temperatures and variation
  e. Duration of condition
  f. Forecasts (long-range for duration of winter).

- Habitat condition and availability.
  a. Animal density (high or low)
  b. Forage condition (good or poor; amount of new leader growth)
  c. Competition (livestock and other wildlife)
  d. Forage availability (canopy cover above snow and sagebrush on exposed south-and/or west-facing slope and windswept ridges)

  - Amount of forage
  - Snow depth

  e. Whether livestock use has decreased available winter forage
  f. Whether or not there is suitable and ample forage immediately available and accessible nearby that is not being used.

- Site location.
  a. Likelihood of animals habituating to activity (for example: birds may habituate to a single pickup truck going into an area on a regular basis, but would not habituate to very load noises or fast heavy traffic)
  b. Presence of thermal cover, wind cover, and other such factors
  c. Proportion of winter concentration area affected
  d. Location of site within the winter concentration area
  e. Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact
  f. Juxtaposition to burns or other habitat alterations that decrease the available sagebrush.

- Timing.
  a. Early in winter season
  b. Nearing end of winter season
  c. Kind and duration of disruptive activity expected
  d. How much remains of the winter when the activity is likely to occur.

Application of this limitation to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects as provided for under NEPA (1969).

Other

Other seasonal restrictions for other species, such as mountain plover and game or sensitive fish species, may be identified on a case-by-case basis. Should additional seasonal restrictions be identified, exceptions would also be handled on a case-by-case basis and include a site-specific analysis.

APPENDIX 5. CLARIFICATIONS TO STANDARD PRACTICES, BMPs, AND GUIDELINES FOR SURFACE DISTURBING ACTIVITIES

This appendix describes the practices utilized to mitigate adverse effects caused by surface disturbing activities. The information in this appendix clarifies the information provided in the final Environmental Impact Statement (EIS), including Appendix 4, Appendix 5, and Appendix 6. The information published with the final EIS for Appendix 5 and portions of Appendix 6 has not been reprinted in the Coordinated Activity Plan (CAP). These appendices, or in the case of Appendix 6 of the final EIS a portion of the appendix, are incorporated by reference and are available in the final EIS or may be obtained from the BLM Rock Springs Field Office. Appendix 4 of the final EIS has been reprinted with the CAP.

Standard practices may develop through the National Environmental Policy Act (NEPA) process into stipulations prior to lease or grant issuance, or they may serve as a basis for mitigation or Conditions of Approval (COAs). If these practices (or newly developed techniques) are already incorporated into project proposals, they may be approved without the addition of any mitigation or COAs.

Best management practices (BMP) are construction and mitigation practices that are generally recognized to be effective at minimizing impacts. They may be common practices used every day, or they may be unique applications for special situations. They may be required by regulation or used at the discretion of the agency or project proponent.

This appendix also contains clarifications of management practices for managing greater sage-grouse and their habitats. These practices include overall habitat considerations and mitigation for surface disturbing and disruptive activities.

BEST MANAGEMENT PRACTICES

Oil and Gas

Best Management Practices for Applications for Permit to Drill and Associated Rights-of-Way

In June 2004 the Bureau of Land Management (BLM) provided direction for incorporating BMPs into Applications for Permit to Drill (APDs), rights-of-way (ROWs), and oil and gas operations by issuing Instruction Memorandum 2004-194. This Instruction Memorandum established a policy directing field offices to consider BMPs in NEPA documents to mitigate anticipated impacts to surface and subsurface resources and also to encourage operators to actively consider BMPs during the application process.

BMPs to be considered in nearly all circumstances include the following:

- Interim reclamation of well locations and access roads soon after the well is put into production

- Painting of all new facilities in a color which best allows the facility to blend with the background, typically a vegetated background
- Design and construction of all new roads to a safe and appropriate standard, “no higher than necessary” to accommodate their intended use
- Final reclamation recontouring of all disturbed areas, including access roads, to the original contour or a contour which blends with the surrounding topography.

Other BMPs are more suitable for field office consideration on a case-by-case basis depending on their effectiveness, the balancing of increased operating costs versus the benefit to the public and resource values, the availability of less restrictive mitigation alternatives, and other site-specific factors. Examples of typical case-by-case BMPs include, but are not limited to, the following:

- Installation of raptor perch avoidance
- Burying of distribution power lines and/or flow lines in or adjacent to access roads
- Centralizing production facilities
- Submersible pumps
- Belowground wellheads
- Drilling multiple wells from a single pad
- Noise reduction techniques and designs
- Wildlife monitoring
- Seasonal restriction of public vehicular access
- Avoiding placement of production facilities on hilltops and ridgelines
- Screening facilities from view
- Bioremediation of oilfield wastes and spills
- Use of common utility or ROW corridors.

A frequently updated menu of typical BMPs can be found on the BLM Washington Office Fluid Minerals website (www.blm.gov/bmp).

Also, in February 2005 BLM issued guidance on considering compensatory (offsite) mitigation for authorizations issued by BLM in the oil, gas, geothermal, and energy ROW programs (IM 2005-069). BLM will approach compensatory mitigation on an “as appropriate” basis where it can be performed onsite, and on a voluntary basis where it is performed offsite.

Clarifications for General Oil and Gas Development

Process Overview

These procedures are described using terminology specific to oil and gas lease stipulations and related development activities; however, the same procedures apply for all surface disturbing and disruptive activities. See Appendix 7 for a discussion of lease stipulations for greater sage-grouse and other resources.

GENERAL MANAGEMENT PRACTICES

Rationale for Controlled Surface Use (CSU) Restrictions

CSU restrictions prohibit or limit surface use for the protection of specific resources, including specific wildlife habitat areas or values within the use area which cannot be sufficiently protected using only seasonal restrictions. These areas and values include factors that limit life cycle activities, such as breeding grounds (leks, nesting sites, and early brood-rearing areas) and winter concentration areas. Surface disturbing and other disruptive activities include, but are not limited to, energy exploration, energy development, excavation for recovery of cultural site information, reclamation activities, and, potentially, maintenance and operation of facilities.

Rationale for Conditions of Approval (COA)

If necessary, site-specific mitigations are added to the APD for protection of surface and/or subsurface resource values in the vicinity of the proposed well. Regulations in 43 CFR 3101.1-2 authorize BLM to relocate proposed operations up to 200 meters and delay operations for a period of 60 days without further NEPA or other analysis. BLM is responsible for preparing the environmental documentation necessary to satisfy the NEPA requirements and for providing any mitigation measures (COAs) needed to protect the affected resource values. COAs such as the timing, reduction, or relocation of disturbances may be utilized to ensure the protection of resources where a NEPA analysis determines the mitigation to be needed. Exceptions to COAs are considered following the same steps outlined for exception to oil and gas lease stipulations. The need for a COA must be documented in a site-specific analysis, and this analysis must be based on appropriate science, providing the necessary justification for required mitigation.

COAs, such as those designed for the reduction or relocation of disturbances, may be utilized to ensure the protection of greater sage-grouse and their habitat. Exceptions to COAs would be considered following the same steps outlined for exception to lease stipulations (Appendix 7).

MANAGEMENT PRACTICES FOR GREATER SAGE-GROUSE (WYOMING BLM SENSITIVE SPECIES)

Although these management practices and those described in Appendix 6 of the final EIS were developed prior to issuance of the BLM “National Sage-Grouse Habitat Conservation Strategy” (USDI 2004b), they are in agreement with the Strategy. More specifically, the BLM National Sage-Grouse Strategy is based on the following four main goals. (Associated with each goal are specific strategies and actions that BLM will undertake to meet the goal.)

1. Improve the effectiveness of the management framework for addressing conservation needs of greater sage-grouse on lands administered by BLM.

2. Increase understanding of resource conditions to prioritize habitat maintenance and restoration.

3. Expand partnerships, available research, and information that support effective management of greater sage-grouse habitat.

4. Ensure leadership and resources are adequate to continue ongoing conservation efforts and implement national and state-level greater sage-grouse habitat conservation strategies and/or plans.

The purpose of the comprehensive National Sage-Grouse Strategy is to set general goals and objectives, assemble general guidance and resource materials, and provide a comprehensive management direction for BLM's contributions to the ongoing multistate greater sage-grouse conservation effort in cooperation with the Western Association of Fish and Wildlife Agencies (WAFWA). The WAFWA guidelines are found in "Guidelines to Manage Sage Grouse Populations and Their Habitats" (Connelly et al. 2000). See the "BLM National Sage-Grouse Habitat Conservation Strategy" (USDI 2004b) for more guidance on management practices for greater sage-grouse. The National Sage-Grouse Strategy does not decide or dictate the management practices that may be used to address greater sage-grouse concerns but provides general guidelines for consideration.

These management practices are intended to address only the concerns with greater sage-grouse. It is assumed that other species and resources will be analyzed with any management proposal and that management of all resources affected will be considered consistent with the BLM multiple-use mandate.

Oil and Gas Development in Greater Sage-Grouse Habitat

Methodology

Field reviews will be conducted prior to any surface disturbing or disruptive activities in greater sage-grouse lek, nesting/early brood-rearing, or winter concentration areas. In addition, field reviews may also take place prior to issuing an oil and gas lease in these restricted areas. Prelease field reviews may be necessary to identify the actual habitat(s) prior to sale of a lease within the planning area.

Habitat identification includes consideration of the factors identified in Appendix 6 of the final EIS, vegetation composition, height, and cover necessary to support greater sage-grouse life cycle activities. Based on Wyoming studies, productive nesting/early brood-rearing habitat are usually represented by 15 to 25 percent canopy cover of big sage with a height of 12 to 32 inches, a perennial grass and forb component with greater than 13 percent canopy cover greater than 7 inches in height, and a residual grass cover greater than 3 percent and between 4 and 5 inches in height. For more explanation, see Table 3-14 in the final EIS (USDI 2004a). Residual herbaceous cover should exceed 4 inches in height and compose greater than 3 percent canopy cover (Heath et al. 1996, Heath et al. 1997, Holloran 1999, Lyon 2000).

Sagebrush and herbaceous cover provide overhead as well as lateral concealment from predators in nesting/early brood-rearing areas. If the average sagebrush height is greater than 30 inches, herbaceous cover may need to be substantially greater to provide the necessary security. As new information is obtained on habitat delineation, this section may be updated to reflect new or modified factors to use in habitat identification.

Exceptions

Exception from CSU requirements developed from this guideline must be based on site-specific analysis of proposals (e.g., activity plans, plans of development, plans of operation, and APDs). This analysis will occur on a case-by-case basis and include consideration of exception criteria as well as coordination with the Wyoming Game and Fish Department (WGFD) and U.S. Fish and Wildlife Service (USFWS) where appropriate (also Appendix 7).

Upon request, exceptions could be considered for some short-term disturbances if the disruptive activity is temporary, does not affect the birds during sensitive time periods (subject to seasonal constraints), and does not adversely affect the use of the habitat by greater sage-grouse.

Modifications and Waivers

Modification of lease stipulations or permanent waivers of lease stipulations are analyzed and approved or denied by the Authorized Officer (AO) at the State Office. These actions require a separate NEPA analysis.

Mitigation for All Permitted Uses (other than oil and gas) in Greater Sage-Grouse Habitat, Conditions of Surface Use, Timing Limitations, and Criteria for Exception

Activities or projects in sensitive wildlife habitats will contain surface use restrictions or timing mitigation for the protection of wildlife. In those cases where the NEPA analysis determines that CSU and/or timing mitigations are necessary, but are not contained within an existing plan/proposal, mitigation will be developed and applied to the activity. The need for a mitigation measure must be documented in a site-specific analysis. This analysis must be based on appropriate science, providing the necessary justification for required mitigation. For information relating to the application of oil and gas stipulations in greater sage-grouse habitat, see Appendix 7. In cases where it is not possible to avoid these areas, intensive mitigation of the surface disturbing activities will be required (see also Appendix 4).

Examples of Mitigation for Controlled Surface Use (CSU)

Resource: Greater sage-grouse leks.

Mitigation: CSU. Surface occupancy or use (water wells, power lines, storage tanks, fences, etc.) on or within 1/4-mile of the perimeter of leks is prohibited, unless anticipated adverse impacts can be adequately mitigated.

Objective: To protect greater sage-grouse leks.

Exception: The AO may grant an exception for a proposed action if site-specific analysis determines the proposed action would not impair the use, function, or utility of the site for current or future mating activities. Example: some linear disturbances may not impair the function or utility of the site, and if the action does not adversely affect the use of the habitat by the greater sage-grouse, the exception could be granted.

Modification: The boundaries of the mitigation area may be modified by the AO if WGFD determines that portions of the area no longer contain greater sage-grouse lek(s) and are not within 1/4-mile of the lek perimeter.

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire project area no longer contains greater sage-grouse lek(s).

Resource: Greater sage-grouse nesting/early brood-rearing habitat.

Mitigation: CSU. Surface occupancy or use is restricted or prohibited unless anticipated adverse impacts can be adequately mitigated. Example: the action would not impair the function or utility of the site and does not adversely affect the use of the habitat by the greater sage-grouse.

Objective: To protect suitable nesting and early brood- rearing habitat.

Exception: The AO may grant an exception if a site-specific analysis determines that the action, as proposed or conditioned, would not impair the use, function, or utility of the site.

Modification: The boundaries of the mitigation area may be modified by the AO if WGFD determines that portions of the area no longer contain greater sage-grouse nesting and early brood-rearing habitat.

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire leasehold no longer contains greater sage-grouse nesting and early brood-rearing habitat.

Resource: Greater sage-grouse winter concentration areas.

Mitigation: CSU. Surface occupancy or use is restricted or prohibited unless anticipated adverse impacts can be adequately mitigated.

Objective: To protect greater sage-grouse winter concentration areas.

Exception: The AO may grant an exception for a proposed action if site-specific analysis determines the proposed action would not impair the function or utility of the site for winter use by greater sage-grouse. Example: the action would not impair the function or utility of the site, and the action does not adversely affect the use of the habitat by the greater sage-grouse.

Modification: The boundaries of the mitigated area may be modified by the AO if WGFD determines that portions of the area no longer contain greater sage-grouse winter concentration areas (habitat).

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire leasehold no longer contains greater sage-grouse winter concentration areas (habitat).

Examples of Mitigation for Timing Limitations

See also Appendix 4 for more information.

Application of these limitations to operation and maintenance of a developed project must be based on environmental analysis of the operational or production aspects provided for under NEPA (1969).

Resource: Breeding greater sage-grouse.

Mitigation: Timing Limitation. No disruptive activities are allowed on occupied leks, or within 1/4-mile of the perimeter of leks, from March 1 to May 15 between the hours of 8 p.m. through 8 a.m. daily.

Objective: To maintain use of the lek by greater sage-grouse.

Exception: The AO may grant an exception if a site-specific analysis determines that the action, as proposed or conditioned, would not adversely affect attendance on the lek during the mating season. Example: Depending on weather conditions, occupancy by the birds, or conditions that preclude occupancy by the birds, an exception for use in greater sage-grouse leks could be granted, or the time of year or time of day mitigation extended dependent on local conditions.

Weather conditions may alter the actual times the area is used by the birds. Cloudy or foggy weather may cause the greater sage-grouse to strut longer in the day while bright, and moonlit nights could provide an opportunity for strutting before dawn. The actual timing of this mitigation can be modified depending on weather conditions, such as fog and cloudy conditions or clear, bright moonlit nights.

Modification: The boundaries of the mitigation times or dates may be modified by the AO if, after consultation with WGFD, the AO determines that modifying the dates or time of day would not adversely impact greater sage-grouse breeding activities.

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire leasehold no longer contains greater sage-grouse lek(s).

Resource: Nesting/early brood-rearing greater sage-grouse.

Mitigation: Timing Limitation. No disruptive activities are allowed in greater sage-grouse nesting/early brood-rearing habitat from March 15 to July 15.

Objective: To protect greater sage-grouse during nesting/early brood-rearing.

Exception: The AO may grant an exception if a site-specific analysis determines that the action, as proposed, mitigated, or conditioned, does not adversely affect nesting or early brood-rearing success. Exceptions could be granted for areas not containing vegetation suitable for nesting/early brood-rearing, provided the actual nesting/early brood-rearing areas are not affected. For example: biologists conducting the field review find the location is in the middle of a greasewood flat. This would not be suitable nesting habitat for greater sage-grouse, so an exception to the mitigation may be granted.

Specific criteria include—

- Habitat condition and availability.
  a. Amount of shrub cover
  b. Amount of residual grass cover
  c. Whether or not there is adequate cover and forage immediately available and accessible nearby that is not being used.
- Site location.
  a. Likelihood of animals habituating to the activity (for example: birds may habituate to a single pickup truck going into an area on a regular basis, but would not habituate to very load noises or fast heavy traffic)
  b. Proportion of nesting/early brood-rearing habitat affected
  c. Location of site within the nesting/early brood-rearing habitat
  d. Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact
  e. Juxtaposition to burns or other habitat alterations that decrease the available sagebrush.

- Timing
  a. Early in breeding season
  b. Nearing end of the breeding season
  c. Kind and duration of disruptive activity expected
  d. How much remains of the breeding season when the activity is likely to occur.

Modification: The boundaries of the mitigation times or dates may be modified by the AO if, after consultation with WGFD, the AO determines that modifying the dates would not adversely impact greater sage-grouse nesting/early brood-rearing activities.

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire leasehold no longer contains greater sage-grouse nesting/early brood-rearing activities.

Resource: Wintering greater sage-grouse.

Mitigation: Timing Limitation. Disruptive activities are prohibited in greater sage-grouse winter concentration areas from November 15 through March 14.

Objective: To protect wintering greater sage-grouse.

Exception: The AO may grant an exception if a site-specific analysis determines that the action, as proposed, mitigated, or conditioned, does not adversely affect wintering greater sage-grouse.

Modification: The mitigation dates may be modified by the AO if, after consultation with WGFD, the AO determines that modifying the dates would not adversely impact wintering greater sage-grouse.

Waiver: This mitigation may be waived by the AO if WGFD determines that the entire leasehold no longer contains winter habitat for greater sage-grouse.

Specific criteria include—

- Weather severity.
  a. Snow conditions (depth, crusting, longevity)
  b. Seasonal weather patterns
  c. Wind chill factors (indication of animals' energy use)

d. Air temperatures and variation

e. Duration of condition

f. Forecasts (long-range for duration of winter).

- Habitat condition and availability.
  a. Animal density (high or low)

  b. Forage condition (good or poor; amount of new leader growth)

  c. Competition (livestock and/or wildlife)

  d. Forage availability (canopy cover above snow and sagebrush on exposed south- and/or west-facing slope and windswept ridges)

     – Amount of forage
     – Snow depth

  e. Whether grazing has decreased available winter forage

  f. Whether or not there is suitable and ample forage immediately available and accessible nearby that is not being used.

- Site location.
  a. Likelihood of animals habituating to the activity (for example: birds may habituate to a single pickup truck going into an area on a regular basis, but would not habituate to very load noises or fast heavy traffic)

  b. Presence of thermal cover, wind cover, and other such factors

  c. Proportion of winter range affected

  d. Location of site within the winter range

  e. Whether there is other activity in the area and whether it is likely to increase the cumulative adverse impact

  f. Juxtaposition to burns or other habitat alterations that decrease the available sagebrush.

- Timing.
  a. Early in winter season

  b. Nearing end of winter season

  c. Kind and duration of disruptive activity expected

  d. How much remains of the winter when the activity is likely to occur.

APPENDIX 6. AIR QUALITY REGULATIONS

The basic framework for controlling air pollutants in the United States is mandated by the 1970 Clean Air Act and its amendments, and the 1999 Regional Haze Regulations. The Clean Air Act addresses criteria air pollutants, state and national ambient air quality standards for criteria air pollutants, and the Prevention of Significant Deterioration (PSD) program. The Regional Haze Regulations address visibility impairment. Appendix 15 in the final EIS provides further information on these regulations.

This appendix provides further clarification of air quality information provided in the final EIS and summarizes information from the *Jonah Infill Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement and Technical Support Document Supplement*.

Regional Haze Regulations

Visibility impairment is an indicator of air pollution concentration. Visibility can be defined as the distance one can perceive color, contrast, and detail. Fine particulate matter ($PM_{2.5}$) is the main cause of visibility impairment. Visual range, one of several ways to express visibility, is the farthest distance a person can see a landscape feature. Without human-caused visibility impairment, natural visual range would average about 150 miles in the Western United States and about 70 miles in the Eastern United States.

The Regional Haze Regulations were developed by EPA in response to the Clean Air Act Amendments of 1990. They are intended to maintain and improve visibility in PSD Class I areas across the United States so that visibility in these areas is returned to natural conditions. These regulations require states to demonstrate reasonable progress in maintaining or improving visibility in PSD Class I areas.

CLARIFICATION OF AIR QUALITY INFORMATION OBTAINED SINCE COMPLETION OF THE JMH CAP FINAL EIS

The 1999 Pinedale Anticline EIS provided the best available data at the time of preparing the supplemental draft EIS and final EIS. The Record of Decision (ROD) for the Pinedale Anticline EIS (Bureau of Land Management [BLM] 2000) stated that if emissions of NO_x from the Jonah and Pinedale Anticline gas fields reached 693.5 tons per year, BLM would perform further air quality analyses. The analysis for the Questar Year-Round Drilling Environmental Assessment (EA) (BLM, 2004) indicated that NO_x emissions had substantially exceeded the 693.5-ton level, mainly as a result of emissions from drill rigs. Drill rig emissions were higher than assumed in the Pinedale Anticline Project Area EIS because—

- There were more drill rigs operating than estimated.
- Conditions required drill rig engines to have larger horsepower than estimated.
- Directional drilling required drill rigs to operate for a longer period of time per well than estimated.

A new air quality analysis has been conducted that includes the JMH Coordinated Activity Plan (CAP) planning area (U.S. Department of the Interior [USDI] 2005). This updated analysis, documented in the "Jonah Infill Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement" (USDI 2005) and the "Jonah Infill Drilling Project Draft Air Quality Technical Support Document Supplement" (USDI 2005), shows that potential impacts to air pollutant concentrations, visibility, and atmospheric deposition from the JMH proposed project are negligible. However, potential impacts from regional sources to visibility were substantial in both the Class I areas and communities in the Pinedale region. The Pinedale region is outside the JMH CAP project area; however, the JMH project area is within the analysis area for the Pinedale region. Tables A6-1, A6-2, A6-3, and A6-4 summarize the information provided in the updated analysis (USDI 2005).

The supplemental air quality analyses for the Jonah Infill draft EIS estimated air quality impacts in the years 2006 and 2017 from both the proposed Jonah Infill project and from regional emission sources, including the oil and gas fields near Pinedale (Jonah, Pinedale Anticline, South Piney, Riley Ridge, and JMH) (USDI 2005). In both 2006 and 2017, potential impacts to concentrations and atmospheric deposition and visibility from the JMH proposed project alone were negligible. However, potential impacts from regional sources to visibility in Class I areas and communities near Pinedale are substantial. Comparing the amount of activity projected for the JMH planning area with not implementing the JMH project, the change to the potential cumulative air quality impacts would likely be negligible. The modeling estimates potential impacts that may occur in the future. Air quality monitoring is ongoing in and around Pinedale, and monitoring may be enhanced further in the future.

MONITORING

The Pinedale Anticline Working Group–Air Quality Task Group was formed to address air quality mitigation and monitoring issues related to development of the Pinedale Anticline gas field. Task Group members include representatives from federal and state agencies, industry, environmental groups, and the public. Task Group meetings are held periodically in Pinedale. Look for announcements of upcoming meetings in the local media (both newspaper and radio). Anyone interested in air quality issues is welcome to attend these meetings.

Wyoming Department of Environmental Quality-Air Quality Division (DEQ-AQD) Emissions Tracking will continue on an annual basis to report changes in permitted potential NOx emission levels since January 1, 1996. In accordance with the Joint Agreement among BLM, Wyoming DEQ, U.S. Department of Agriculture (USDA) Forest Service, and EPA for maintaining diligence in monitoring for the protection of wilderness air quality-related values of visibility and lake acidification, BLM, in consultation with the Wyoming DEQ-AQD, will reinstate tracking of emissions for the Pinedale Anticline and the Jonah II projects on an annual basis. Development within the Rock Springs Field Office area, which includes the JMH CAP area, also will be included in the tracking because of its proximity to the Bridger Wilderness area.

State of The Atmosphere. BLM Wyoming is updating air quality analysis through the State of the Atmosphere initiative, which will estimate concentrations, visibility,

and atmospheric deposition throughout the state, and lake chemistry impacts where adequate data are available. This analysis will be completed within the next year.

The State of The Atmosphere project objective is to develop a database of air quality dispersion modeling files and initial study results covering air quality conditions in the State of Wyoming. This includes emissions information as well as meteorological data such as winds, temperature, atmospheric dispersion and turbulence. The work products derived from the State of the Atmosphere project are intended to describe current baseline air quality conditions (through dispersion modeling) and are also intended to be used in future BLM-sponsored modeling analyses of air quality conditions, such as EISs, EAs, and other environmental analyses required under the National Environmental Policy Act (NEPA) and related environmental rules and regulations. The work products can also be used to evaluate the possible effects of any BLM emissions mitigation strategies.

The figures included in this appendix are updated to reflect the most recent monitoring data available.

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Figure A6-1: Mean Annual Concentrations of Nitrogen Compounds near Pinedale, Wyoming

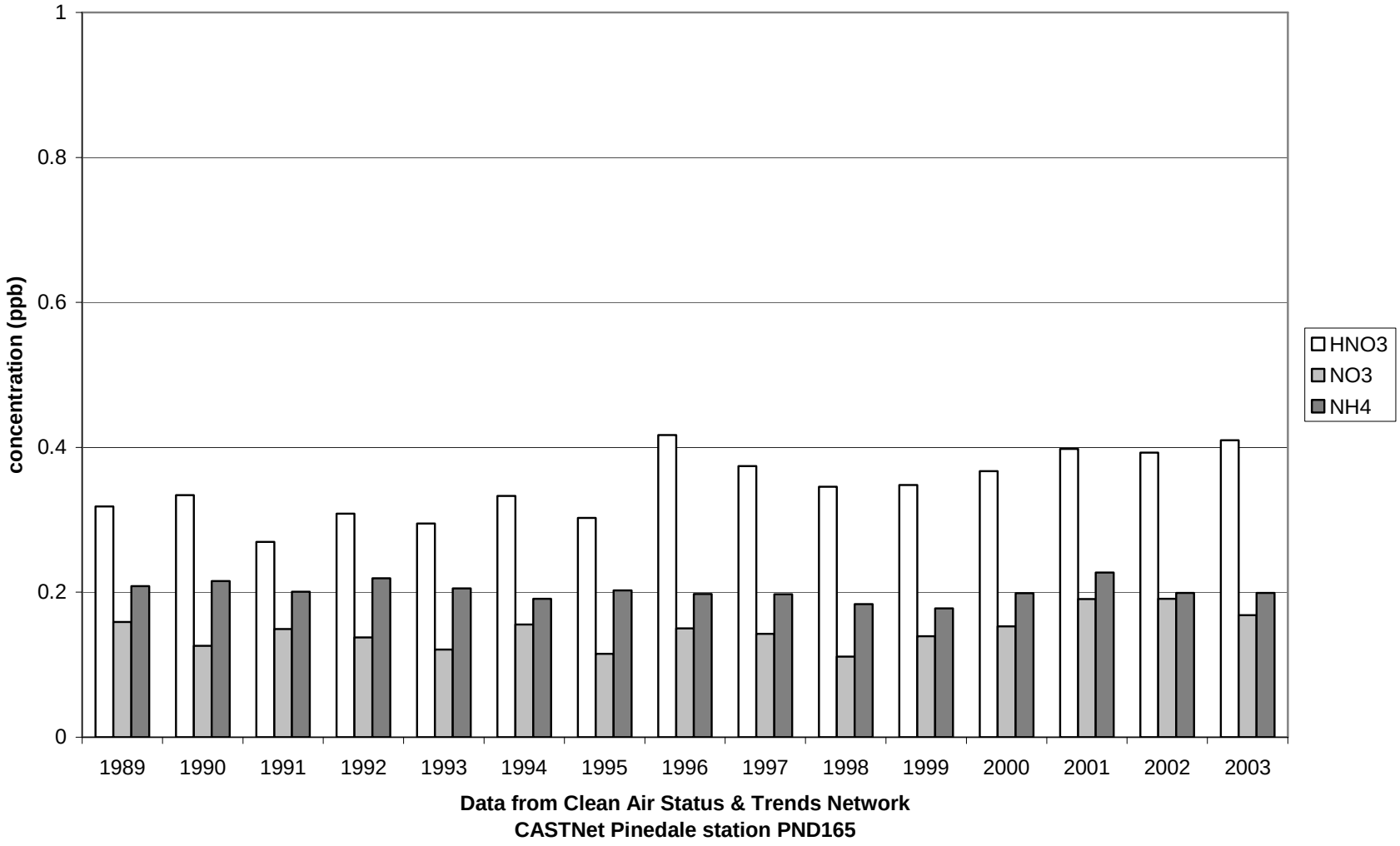


Figure A6-2: Mean Annual Concentrations of Sulfur Compounds near Pinedale, Wyoming

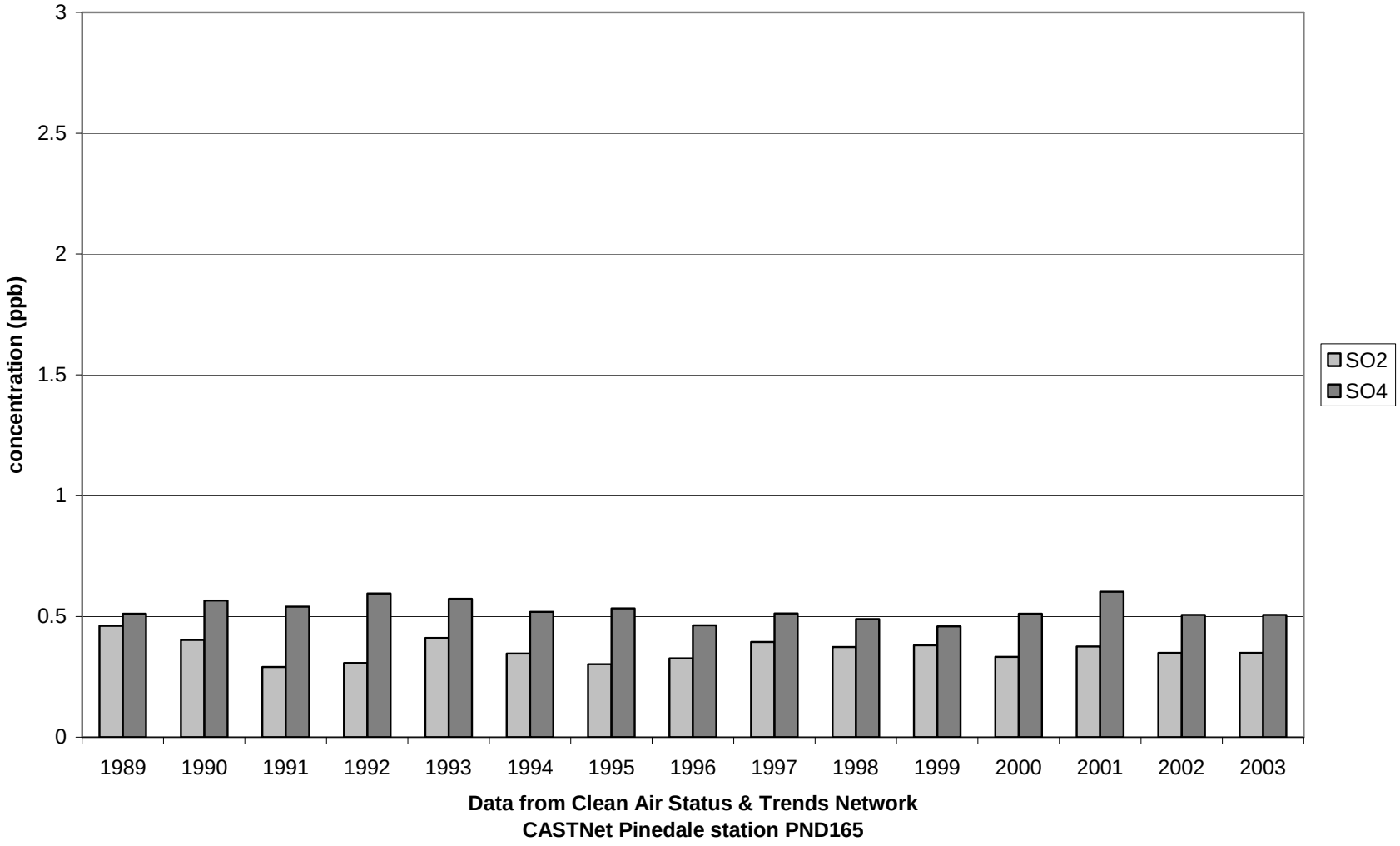
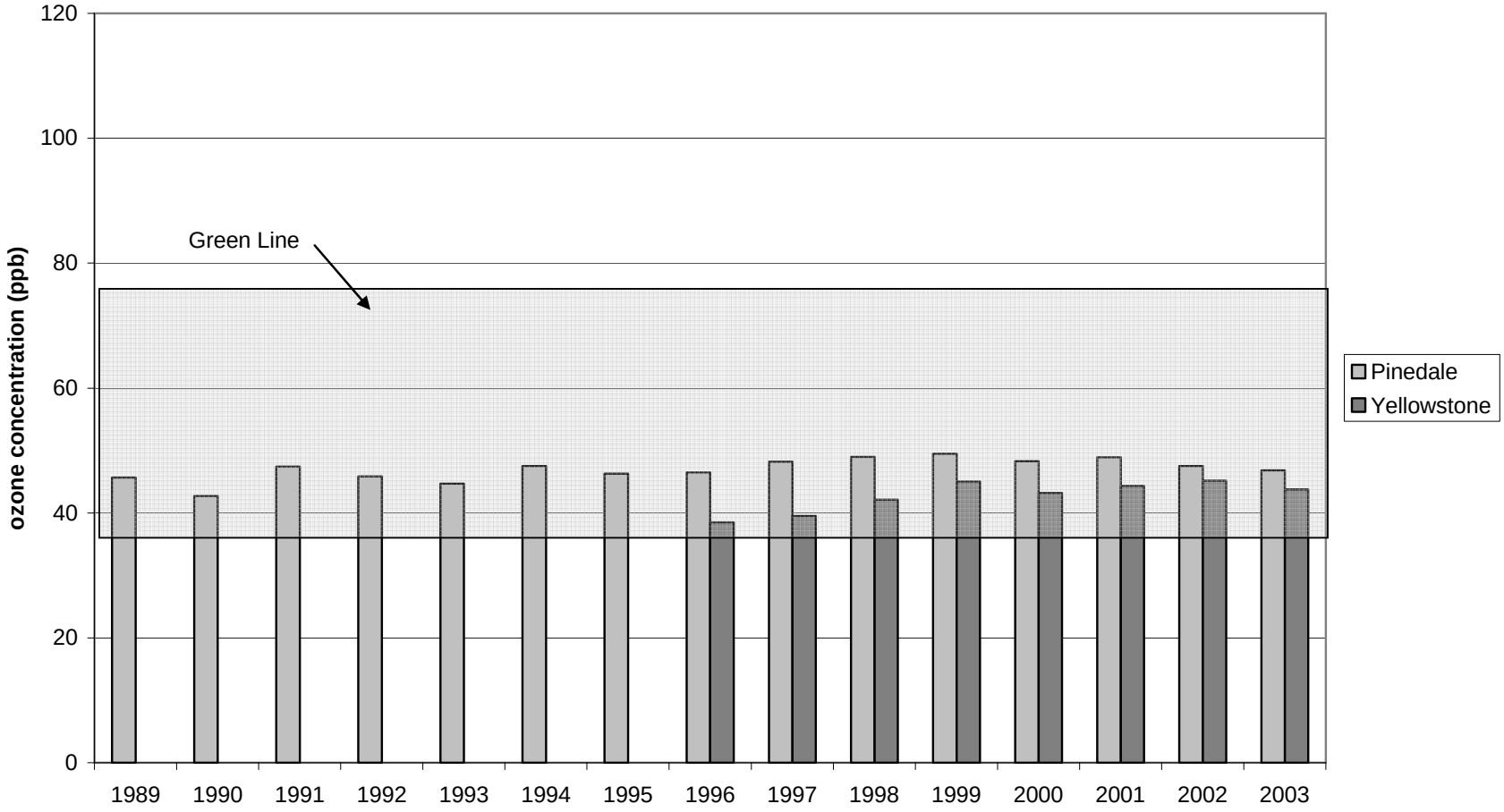


Figure A6-3: Mean Annual Ozone Concentrations near Pinedale, Wyoming



Data from Clean Air Status & Trends Network
CASTNet Pinedale station PND165
CASTNet Yellowstone station YEL408

Figure A6-4: Mean Annual Visibility in Bridger Wilderness

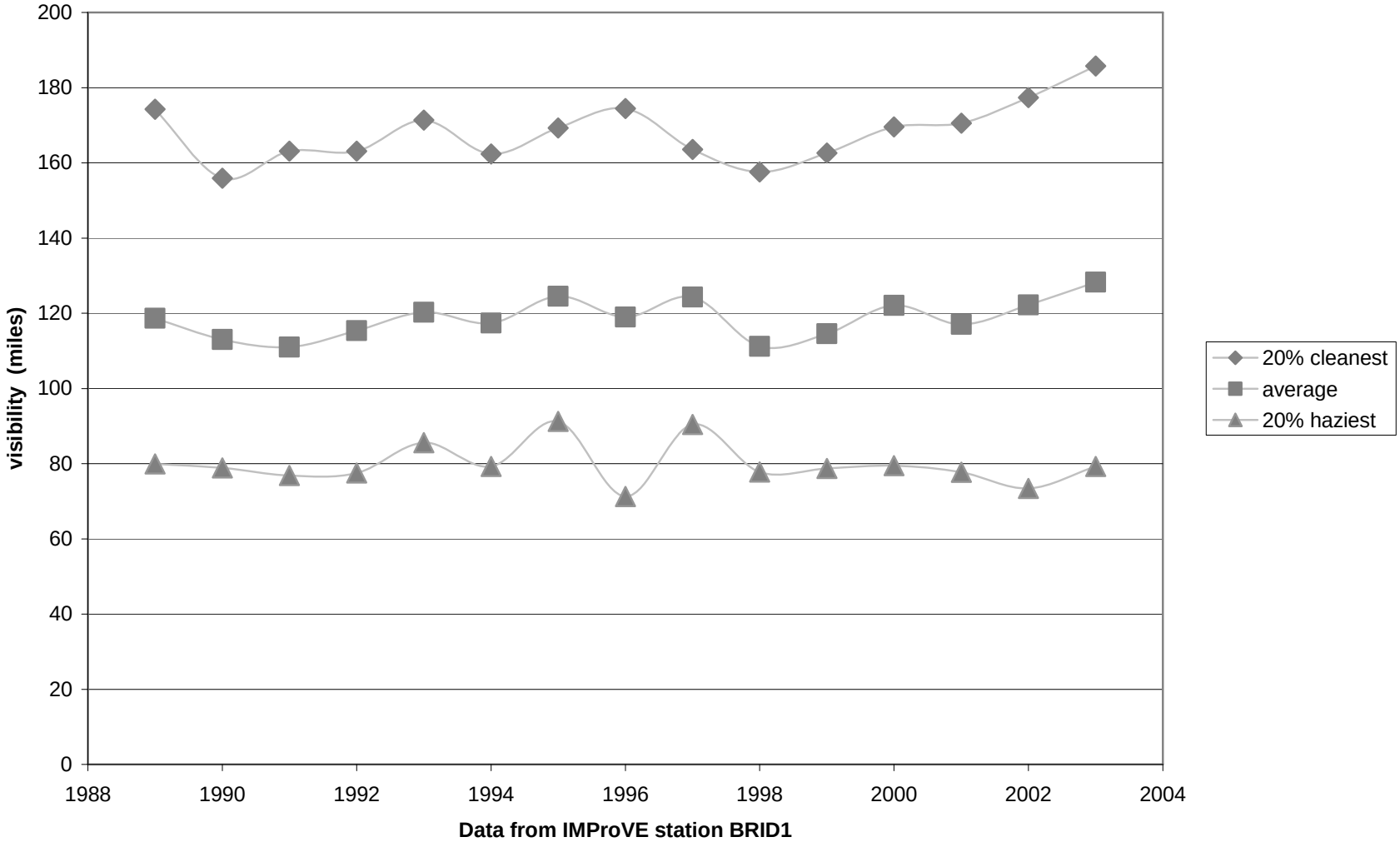


Figure A6-5: Mean Annual Visibility in Bridger Wilderness

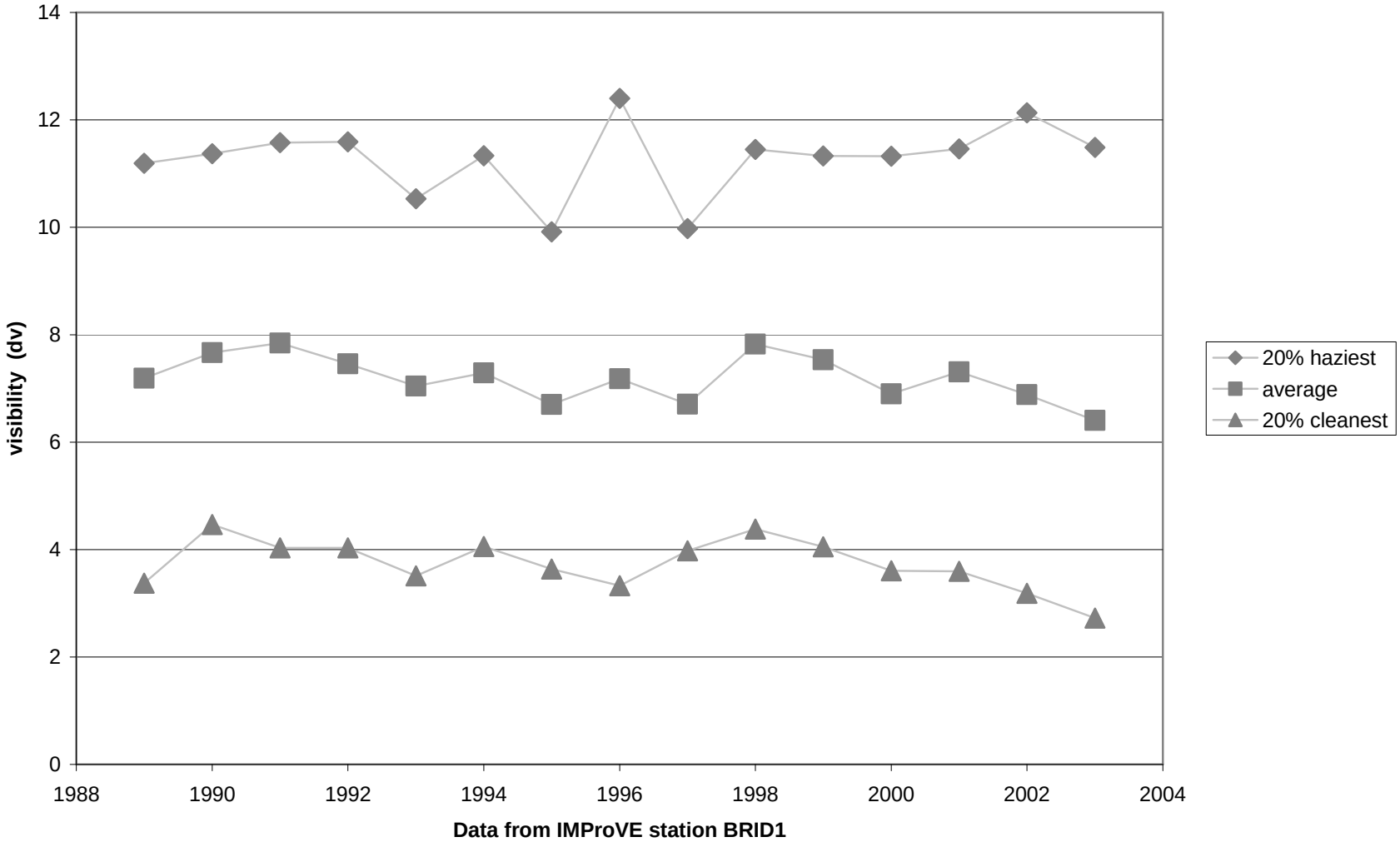


Figure A6-6: Mean Annual Precipitation pH near Pinedale, Wyoming

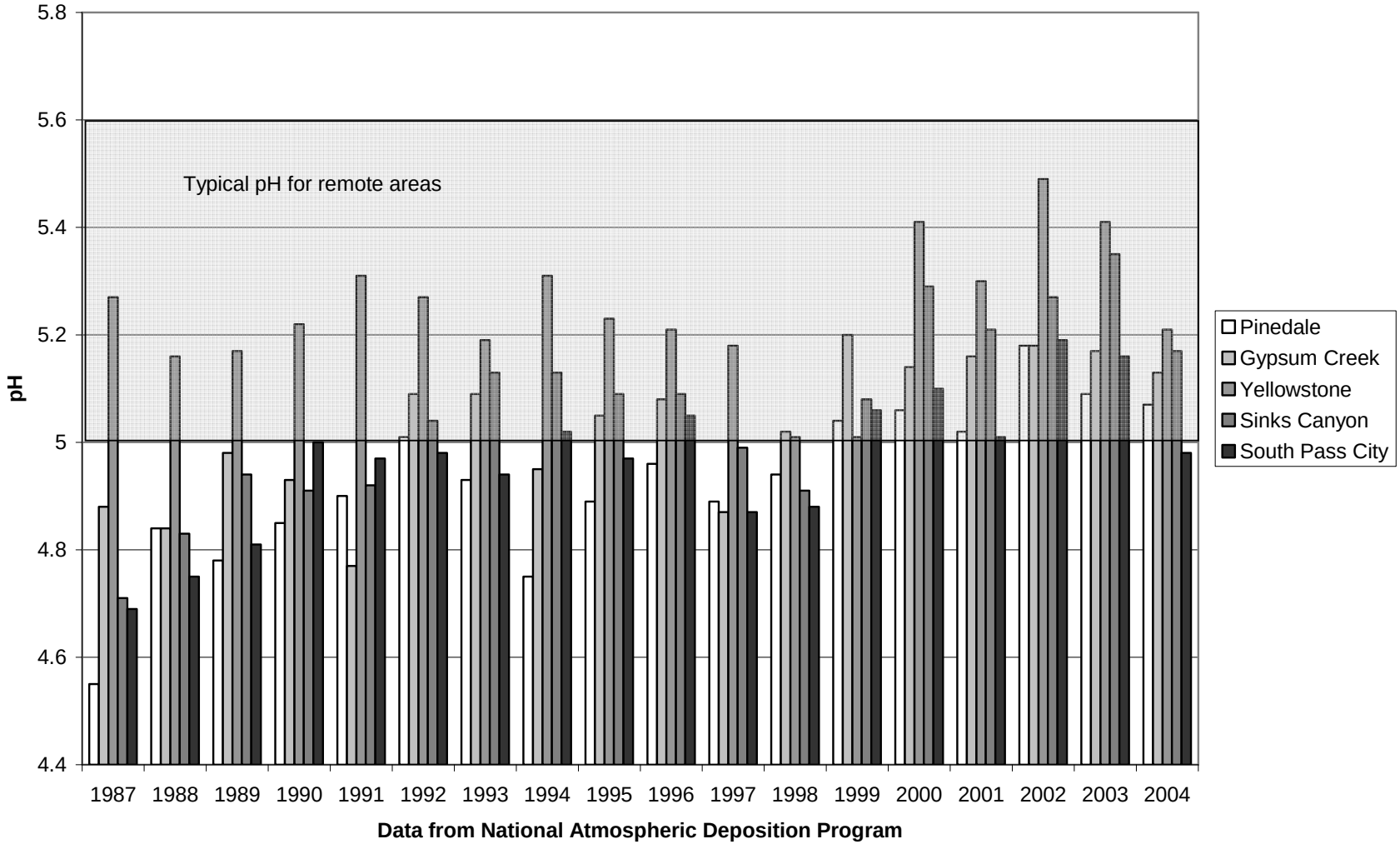


Figure A6-7: Mean Annual Total Nitrogen Deposition near Pinedale, Wyoming

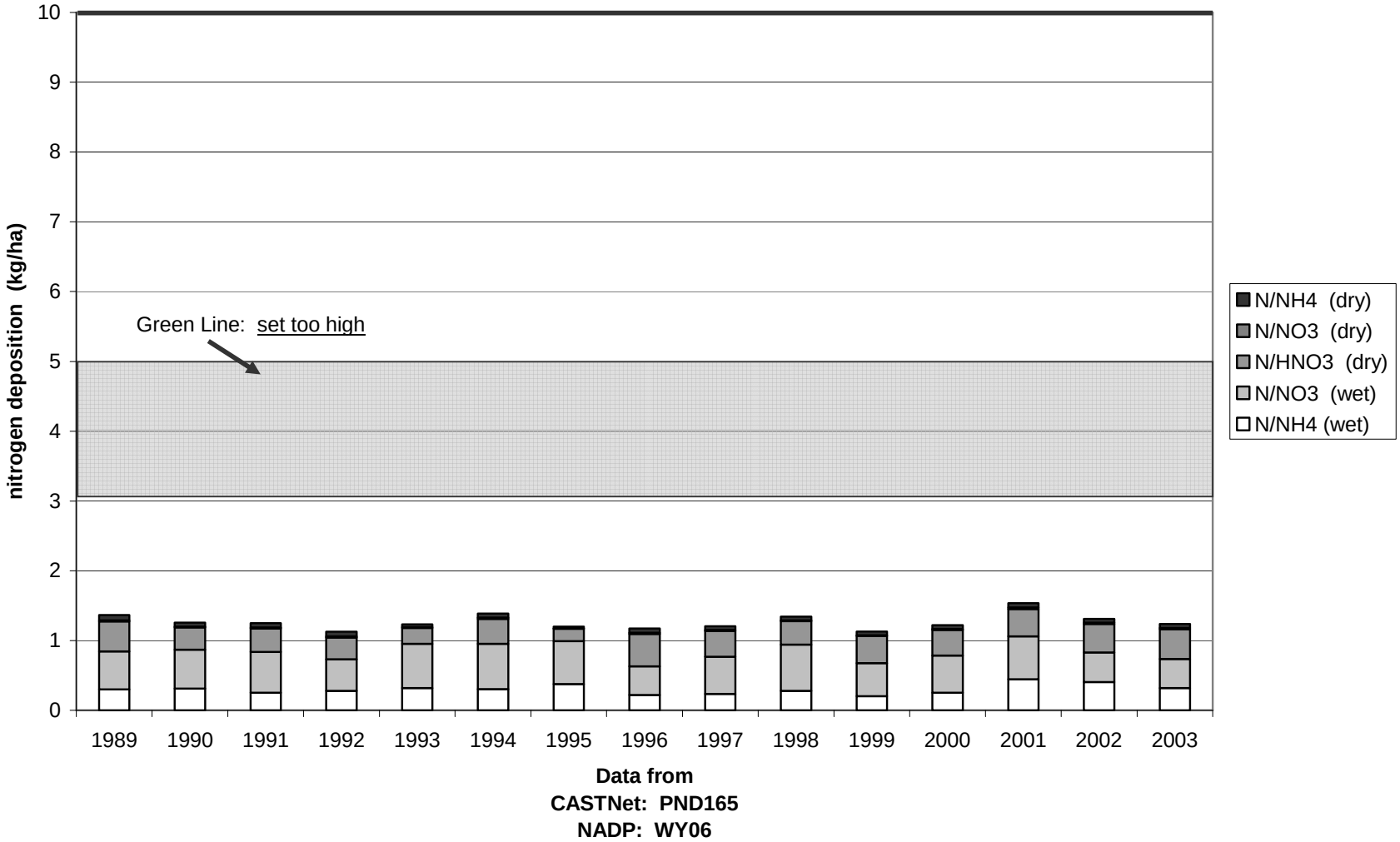


Figure A6-8: Mean Annual Total Sulfur Deposition near Pinedale, Wyoming

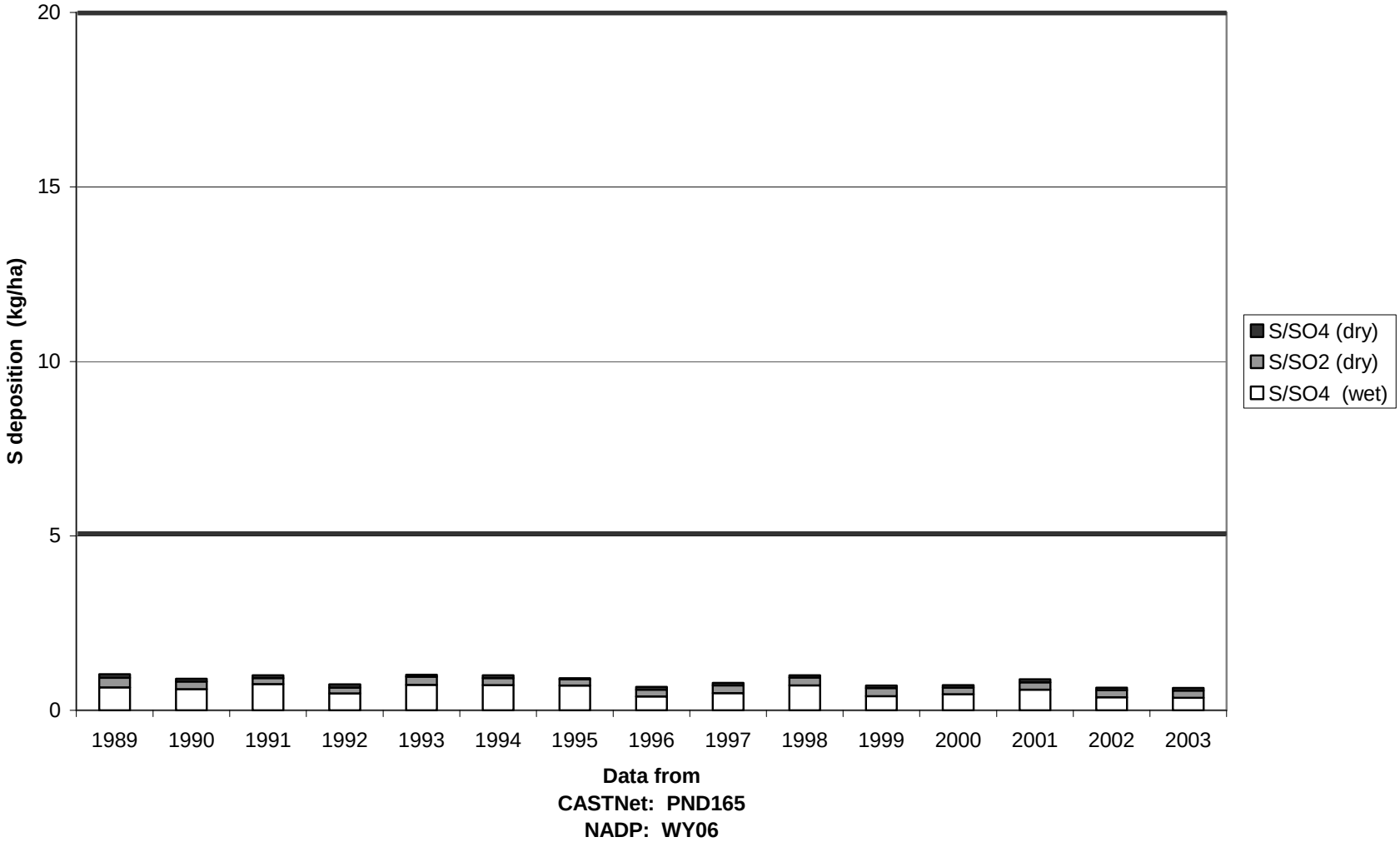


Figure A6-9: Background Concentrations for South West Wyoming

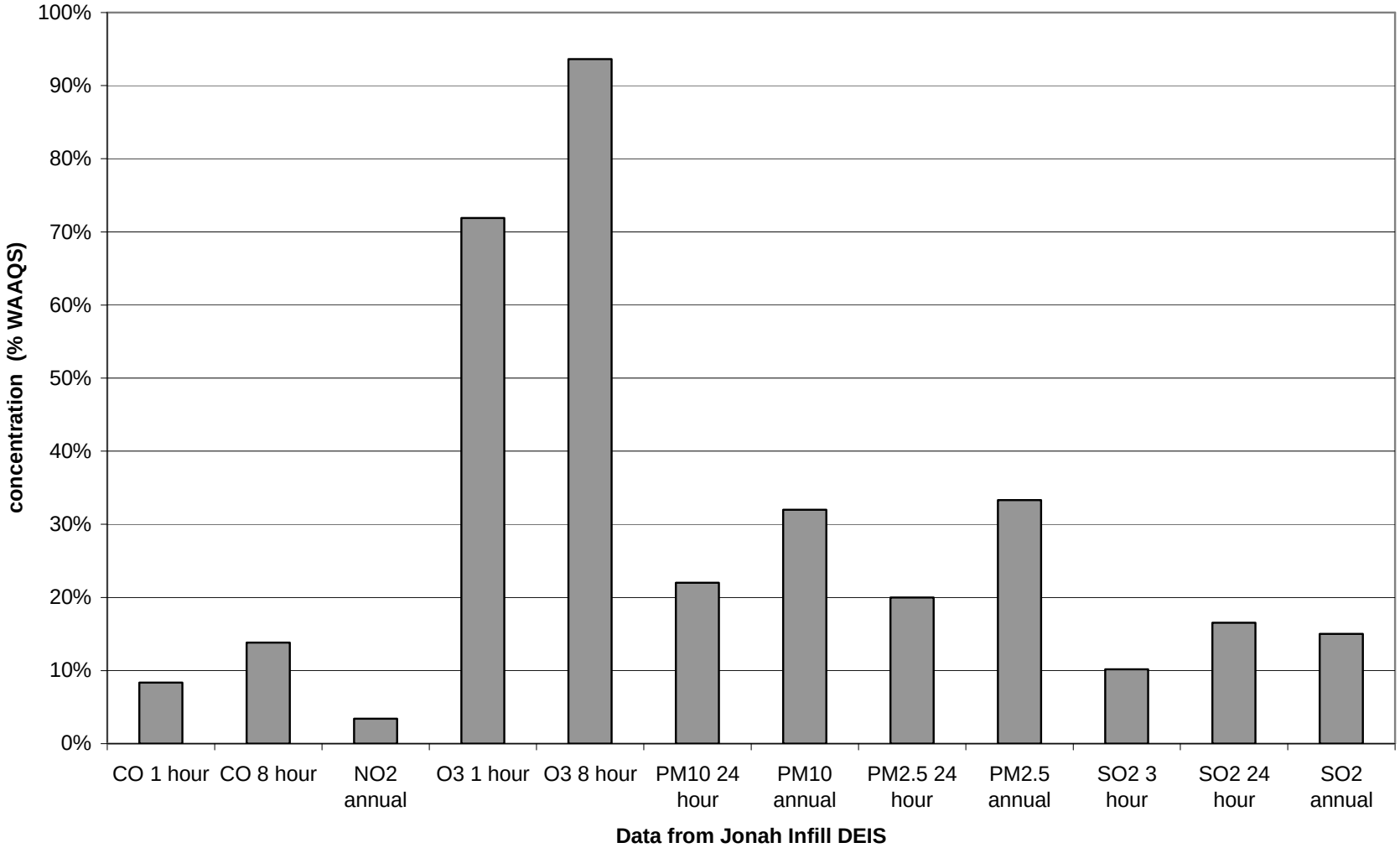


Figure A6-10. Potential Total Near-Field Concentrations near Jack Morrow Hills Area with respect to Wyoming Ambient Air Quality Standards

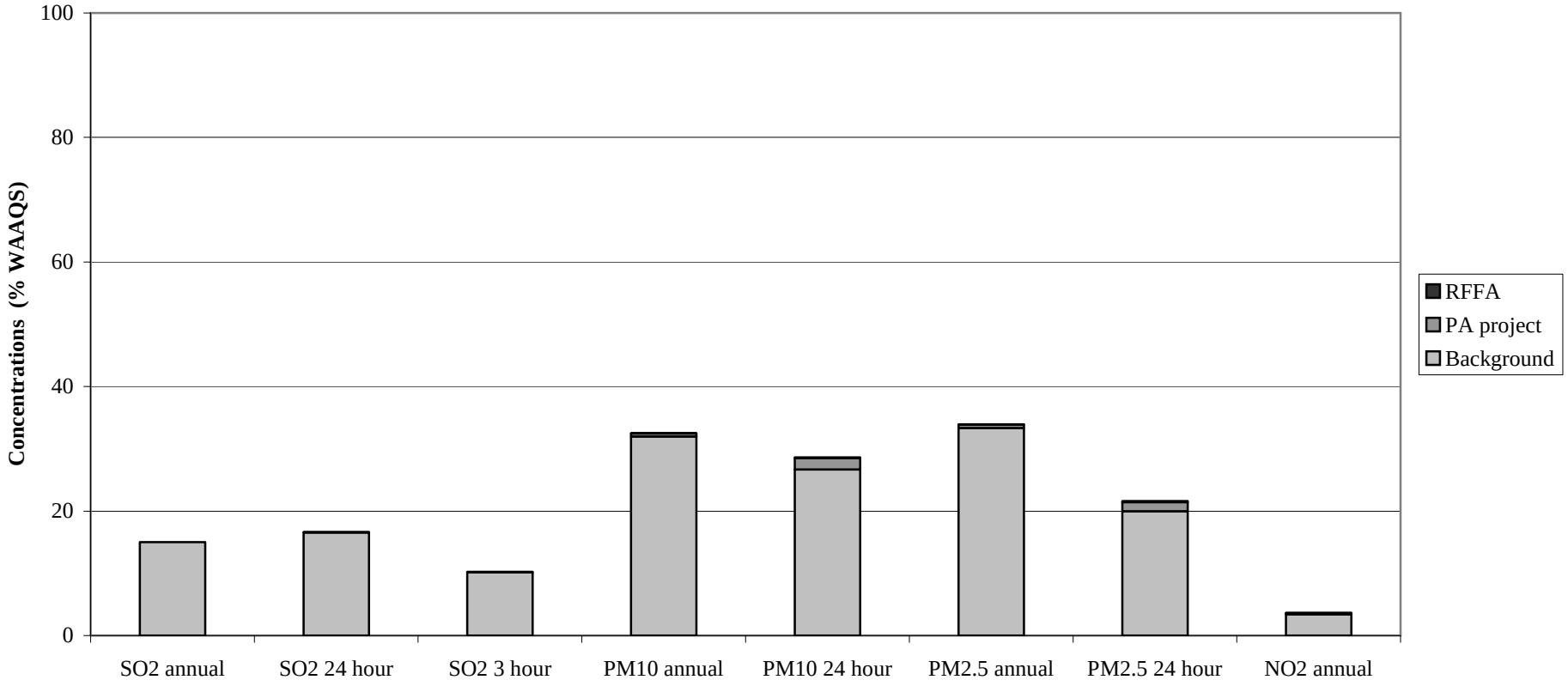


Figure A6-11. Far-Field Concentrations of Criteria Pollutants from the Pinedale Anticline Project

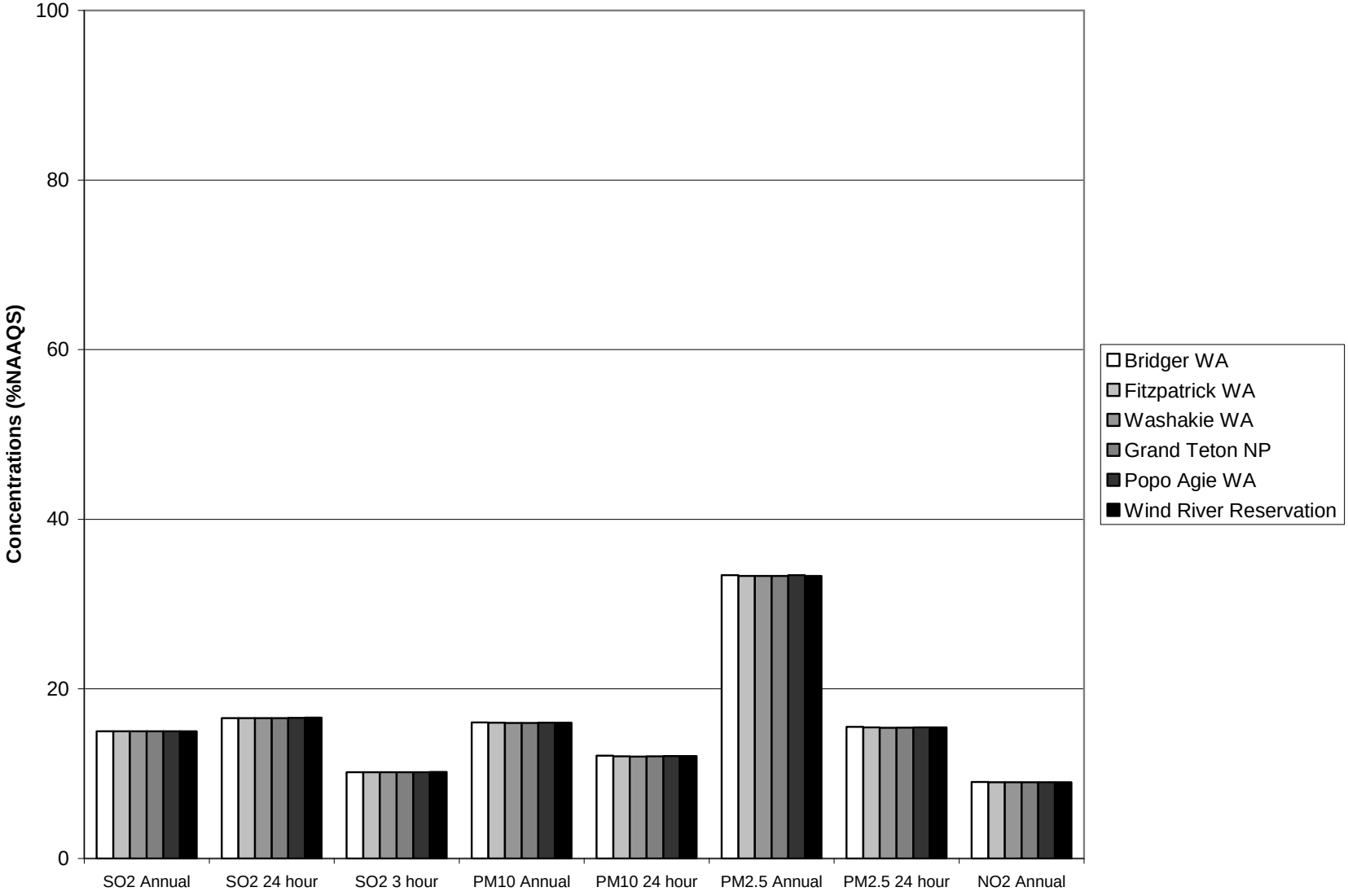


Figure A6-12. Potential Cumulative Far-Field Concentrations in Bridger Wilderness with respect to PSD Class I Increments

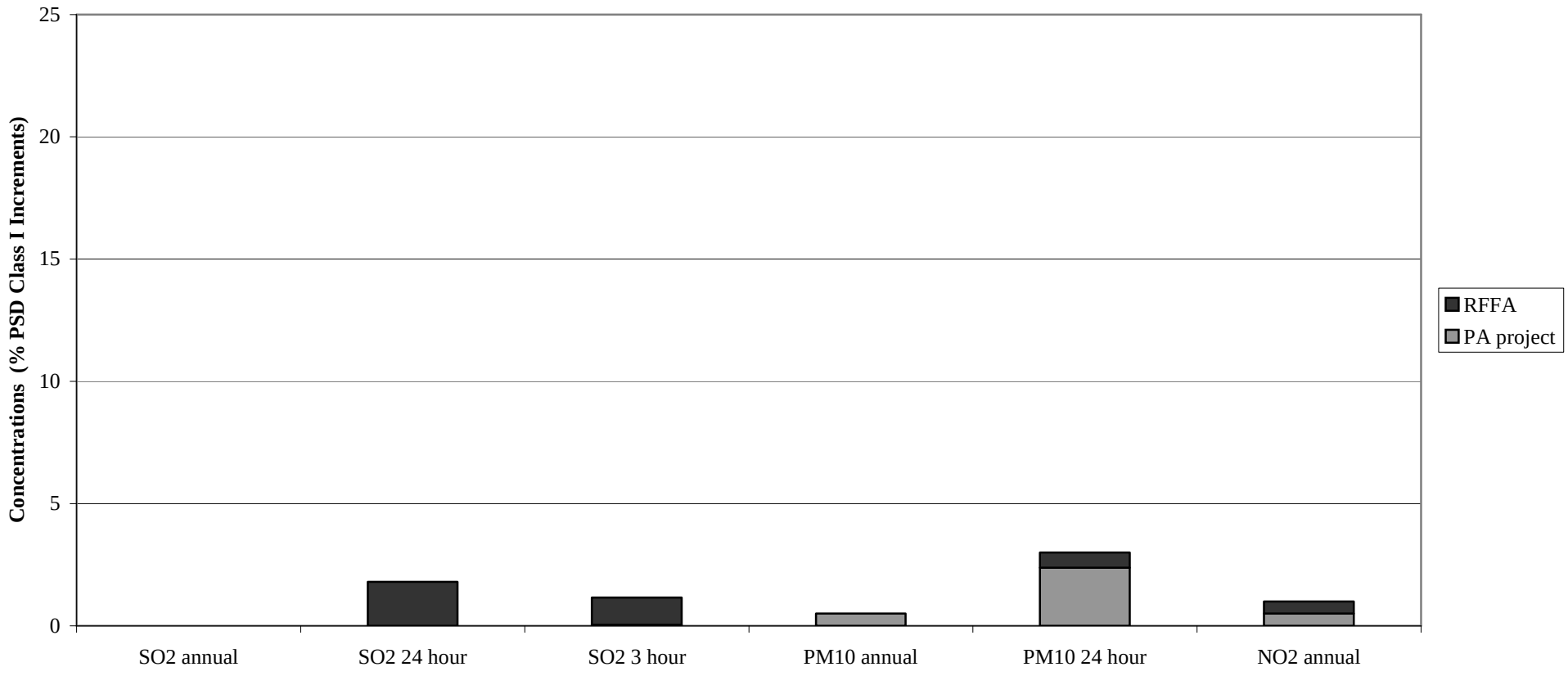


Figure A6-13. Potential Total Far-Field Concentrations in Bridger Wilderness with respect to Wyoming Ambient Air Quality Standards

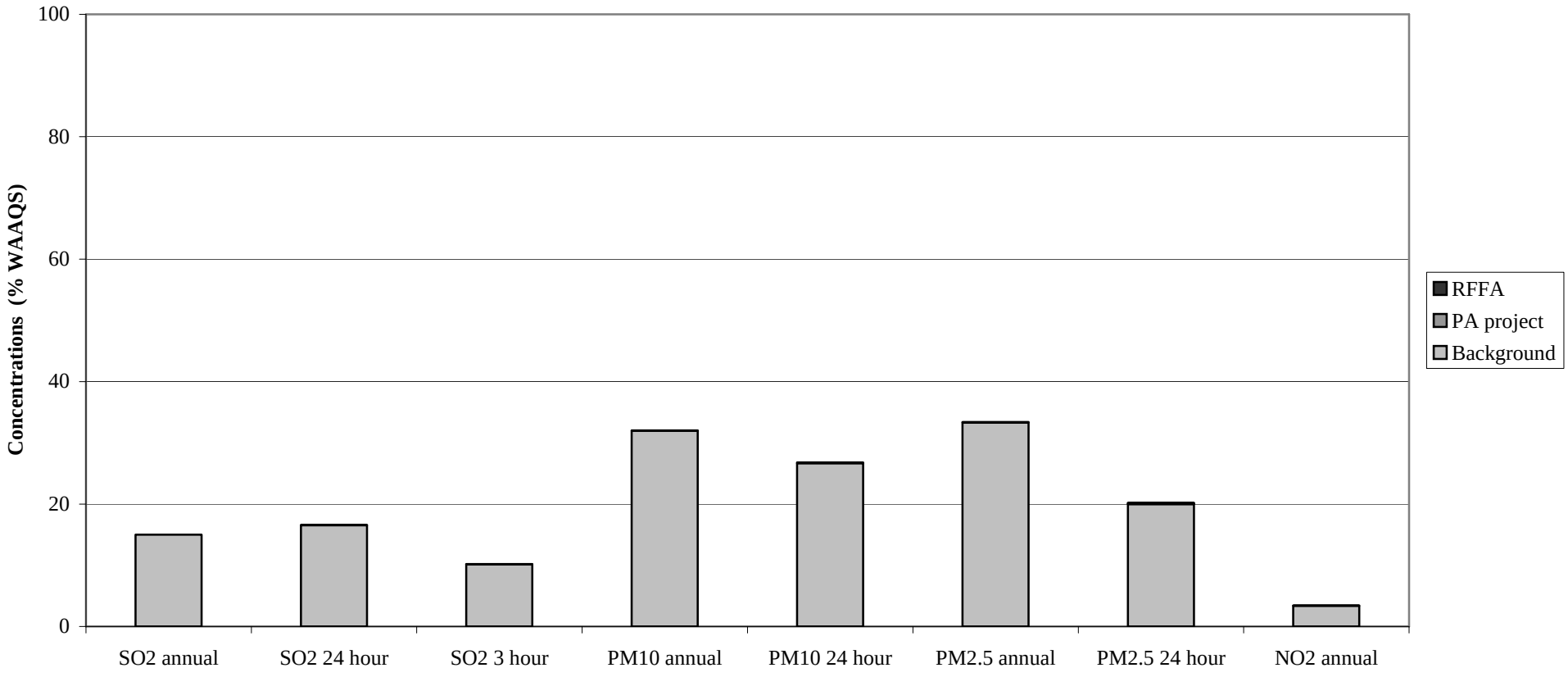


Table A6-1. Preferred Alternative Air Quality Concentrations and Deposition Impacts Summary

Air Quality Component	Criteria	Source Group & Impact Area	Preferred Alternative: WDR250 High Emissions Case	Preferred Alternative: WDR250 Low Emissions Case	Preferred Alternative: WDR250 80% Mitigation Case
Concentrations	Air Quality Standards	Project: In-Field	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS
		Cumulative: In-Field	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS
		Project: Far-Field	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS
		Cumulative: Far-Field	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS	PM_{10} < NAAQS&WAAQS $PM_{2.5}$ < NAAQS&WAAQS NO_2 < NAAQS&WAAQS SO_2 < NAAQS&WAAQS
	PSD Class I Increments[1]	Cumulative: Far-Field	PM_{10} < increment NO_2 < increment SO_2 < increment	PM_{10} < increment NO_2 < increment SO_2 < increment	PM_{10} < increment NO_2 < increment SO_2 < increment
	PSD Class II Increments[1]	Cumulative: Far-Field	PM_{10} < increment NO_2 < increment SO_2 < increment	PM_{10} < increment NO_2 < increment SO_2 < increment	PM_{10} < increment NO_2 < increment SO_2 < increment
Atmospheric Deposition	N Deposition	Total: Far-Field	N < LOC, All Areas	N < LOC, All Areas	N < LOC, All Areas
	S Deposition	Total: Far-Field	S < LOC, All Areas	S < LOC, All Areas	S < LOC, All Areas
	Sensitive Lakes	Project: Far-Field	ANC Change < LAC, All Lakes	ANC Change < LAC, All Lakes	ANC Change < LAC, All Lakes
		Cumulative: Far-Field	ANC Change < LAC, All Lakes	ANC Change < LAC, All Lakes	ANC Change < LAC, All Lakes

[1] The PSD demonstrations serve information purposes only and do not constitute a regulatory PSD Increment Consumption Analysis.

Sources: USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. "Jonah Infill Drilling Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement," August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. “Jonah Infill Drilling Project Draft Air Quality Technical Support Document Supplement,” August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

Table A6-2. Preferred Alternative Visibility (Regional Haze) Impacts Summary

Air Quality Component	Impact Area	Source Group	Preferred Alternative: WDR250 High Emissions Case	Preferred Alternative: WDR250 Low Emissions Case	Preferred Alternative: WDR250 80% Mitigation Case
Visibility (Regional Haze)	PSD Class I and Sensitive Class II Areas	Project	**Bridger WA, >1.0-dv 31 days, max dv = 6.44** **Fitzpatrick WA, >1.0-dv 3 days, max dv = 1.54** **Popo Agie WA, >1.0-dv 2 days, max dv = 1.36** **Wind River RA, >1.0-dv 1 days, max dv = 1.22** Grand Teton NP, >1.0-dv 0 days, max dv = 0.66 Teton WA, >1.0-dv 0 days, max dv = 0.28 Yellowstone NP, >1.0-dv 0 days, max dv = 0.31 Washakie WA, >1.0-dv 0 days, max dv = 0.48	**Bridger WA, >1.0-dv 9 days, max dv = 3.26** Fitzpatrick WA, >1.0-dv 0 days, max dv = 0.61 Popo Agie WA, >1.0-dv 0 days, max dv = 0.59 Wind River RA, >1.0-dv 0 days, max dv = 0.50 Grand Teton NP, >1.0-dv 0 days, max dv = 0.31 Teton WA, >1.0-dv 0 days, max dv = 0.14 Yellowstone NP, >1.0-dv 0 days, max dv = 0.15 Washakie WA, >1.0-dv 0 days, max dv = 0.23	**Bridger WA, >1.0-dv 3 days, max dv = 1.66** Fitzpatrick WA, >1.0-dv 0 days, max dv = 0.33 Popo Agie WA, >1.0-dv 0 days, max dv = 0.29 Wind River RA, >1.0-dv 0 days, max dv = 0.26 Grand Teton NP, >1.0-dv 0 days, max dv = 0.14 Teton WA, >1.0-dv 0 days, max dv = 0.06 Yellowstone NP, >1.0-dv 0 days, max dv = 0.06 Washakie WA, >1.0-dv 0 days, max dv = 0.10
		Cumulative	**Bridger WA, >1.0-dv 39 days, max dv = 6.82** **Fitzpatrick WA, >1.0-dv 3 days, max dv = 1.58** **Popo Agie WA, >1.0-dv 6 days, max dv = 1.67** **Wind River RA, >1.0-dv 5 days, max dv = 1.54** Grand Teton NP, >1.0-dv 0 days, max dv = 0.83 Teton WA, >1.0-dv 0 days, max dv = 0.34 Yellowstone NP, >1.0-dv 0 days, max dv = 0.40 Washakie WA, >1.0-dv 0 days, max dv = 0.58	**Bridger WA, >1.0-dv 15 days, max dv = 3.78** Fitzpatrick WA, >1.0-dv 0 days, max dv = 0.85 Popo Agie WA, >1.0-dv 0 days, max dv = 0.97 **Wind River RA, >1.0-dv 2 days, max dv = 1.19** Grand Teton NP, >1.0-dv 0 days, max dv = 0.49 Teton WA, >1.0-dv 0 days, max dv = 0.23 Yellowstone NP, >1.0-dv 0 days, max dv = 0.25 Washakie WA, >1.0-dv 0 days, max dv = 0.33	**Bridger WA, >1.0-dv 6 days, max dv = 2.62** Fitzpatrick WA, >1.0-dv 0 days, max dv = 0.57 Popo Agie WA, >1.0-dv 0 days, max dv = 0.75 Wind River RA, >1.0-dv 0 days, max dv = 0.96 Grand Teton NP, >1.0-dv 0 days, max dv = 0.35 Teton WA, >1.0-dv 0 days, max dv = 0.17 Yellowstone NP, >1.0-dv 0 days, max dv = 0.18 Washakie WA, >1.0-dv 0 days, max dv = 0.23
	Wyoming Regional Communities	Project	**Big Piney, >1.0-dv 18 days, max dv = 3.93** **Big Sandy, >1.0-dv 62 days, max dv = 5.76** **Boulder, >1.0-dv 33 days, max dv = 4.58** **Bronx, >1.0-dv 9 days, max dv = 3.82** **Cora, >1.0-dv 14 days, max dv = 6.70** **Daniel, >1.0-dv 16 days, max dv = 5.50** **Farson, >1.0-dv 13 days, max dv = 4.88** **Labarge, >1.0-dv 6 days, max dv = 2.59** **Merna, >1.0-dv 5 days, max dv = 1.64** **Pinedale, >1.0-dv 21 days, max dv = 8.48**	**Big Piney, >1.0-dv 4 days, max dv = 1.89** **Big Sandy, >1.0-dv 21 days, max dv = 2.92** **Boulder, >1.0-dv 10 days, max dv = 2.30** **Bronx, >1.0-dv 1 days, max dv = 1.60** **Cora, >1.0-dv 1 days, max dv = 3.03** **Daniel, >1.0-dv 1 days, max dv = 2.42** **Farson, >1.0-dv 5 days, max dv = 2.21** **Labarge, >1.0-dv 2 days, max dv = 1.27** Merna, >1.0-dv 0 days, max dv = 0.75 **Pinedale, >1.0-dv 3 days, max dv = 4.07**	Big Piney, >1.0-dv 0 days, max dv = 0.92 **Big Sandy, >1.0-dv 4 days, max dv = 1.45** **Boulder, >1.0-dv 2 days, max dv = 1.10** Bronx, >1.0-dv 0 days, max dv = 0.89 **Cora, >1.0-dv 1 days, max dv = 1.75** **Daniel, >1.0-dv 1 days, max dv = 1.37** **Farson, >1.0-dv 1 days, max dv = 1.19** Labarge, >1.0-dv 0 days, max dv = 0.57 Merna, >1.0-dv 0 days, max dv = 0.35 **Pinedale, >1.0-dv 1 days, max dv = 2.37**
		Cumulative	**Big Piney, >1.0-dv 36 days, max dv = 4.32** **Big Sandy, >1.0-dv 74 days, max dv = 6.18** **Boulder, >1.0-dv 40 days, max dv = 5.58** **Bronx, >1.0-dv 15 days, max dv = 3.88** **Cora, >1.0-dv 17 days, max dv = 6.77** **Daniel, >1.0-dv 23 days, max dv = 5.56** **Farson, >1.0-dv 21 days, max dv = 5.05** **Labarge, >1.0-dv 16 days, max dv = 3.97** **Merna, >1.0-dv 10 days, max dv = 1.93** **Pinedale, >1.0-dv 27 days, max dv = 8.56**	**Big Piney, >1.0-dv 19 days, max dv = 2.57** **Big Sandy, >1.0-dv 32 days, max dv = 3.48** **Boulder, >1.0-dv 20 days, max dv = 3.60** **Bronx, >1.0-dv 1 days, max dv = 1.68** **Cora, >1.0-dv 7 days, max dv = 3.13** **Daniel, >1.0-dv 11 days, max dv = 2.52** **Farson, >1.0-dv 11 days, max dv = 2.68** **Labarge, >1.0-dv 11 days, max dv = 2.85** **Merna, >1.0-dv 4 days, max dv = 1.11** **Pinedale, >1.0-dv 8 days, max dv = 4.18**	**Big Piney, >1.0-dv 13 days, max dv = 2.28** **Big Sandy, >1.0-dv 12 days, max dv = 2.13** **Boulder, >1.0-dv 9 days, max dv = 3.09** Bronx, >1.0-dv 0 days, max dv = 0.97 **Cora, >1.0-dv 2 days, max dv = 1.86** **Daniel, >1.0-dv 2 days, max dv = 1.47** **Farson, >1.0-dv 10 days, max dv = 1.87** **Labarge, >1.0-dv 6 days, max dv = 2.30** **Merna, >1.0-dv 1 days, max dv = 1.03** **Pinedale, >1.0-dv 6 days, max dv = 2.50**

Sources: USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. “Jonah Infill Drilling Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement,” August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. ”Jonah Infill Drilling Project Draft Air Quality Technical Support Document Supplement,” August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

Table A6-3. Early Project Development Stage Air Quality Concentrations and Deposition Impacts

Air Quality Component	Criteria	Source Group & Impact Area	Early-Project-Development Stage: WDR250
Concentrations	Air Quality Standards	Project: In-Field	PM_{10} < NAAQS & WAAQS $PM_{2.5}$ < NAAQS & WAAQS NO_2 < NAAQS & WAAQS SO_2 < NAAQS & WAAQS
		Cumulative: In-Field	PM_{10} < NAAQS & WAAQS $PM_{2.5}$ < NAAQS & WAAQS NO_2 < NAAQS & WAAQS SO_2 < NAAQS & WAAQS
		Project Far-Field	PM_{10} < NAAQS & WAAQS $PM_{2.5}$ < NAAQS & WAAQS NO_2 < NAAQS & WAAQS SO_2 < NAAQS & WAAQS
		Cumulative: Far-Field	PM_{10} < NAAQS & WAAQS $PM_{2.5}$ < NAAQS & WAAQS NO_2 < NAAQS & WAAQS SO_2 < NAAQS & WAAQS
	PSD Class I Increments[1]	Cumulative: Far-Field	PM_{10} < increment NO_2 < increment SO_2 < increment
	PSD Class II Increments[1]	Cumulative: Far-Field	PM_{10} < increment NO_2 < increment SO_2 < increment
Atmospheric Deposition	N Deposition	Total: Far-Field	N < LOC, All Areas
	S Deposition	Total: Far-Field	S < LOC, All Areas
	Sensitive Lakes	Project: Far-Field	ANC Change < LAC, All Lakes
		Cumulative: Far-Field	ANC Change < LAC, All Lakes

[1] The PSD demonstrations serve information purposes only and do not constitute a regulatory PSD Increment Consumption Analysis.

Sources: USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. "Jonah Infill Drilling Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement," August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. “Jonah Infill Drilling Project Draft Air Quality Technical Support Document Supplement,” August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

Table A6-4. Early-Project-Development-Stage Visibility (Regional Haze) Impacts

Air Quality Component	Impact Area	Source Group	Early-Project-Development Stage: WDR250
Visibility (Regional Haze)	PSD Class I and Sensitive Class II Areas	Project	**Bridger WA: >1.0-dv 9 days, max dv = 2.42** Fitzpatrick WA: >1.0-dv 0 days, max dv = 0.95 **Popo Agie WA: >1.0-dv 2 days, max dv = 1.06** **Wind River RA: >1.0-dv 1 days, max dv = 1.01** Grand Teton NP: >1.0-dv 0 days, max dv = 0.67 Teton WA: >1.0-dv 0 days, max dv = 0.37 Yellowstone NP: >1.0-dv 0 days, max dv = 0.32 Washakie WA: >1.0-dv 0 days, max dv = 0.43
		Cumulative	**Bridger WA: >1.0-dv 61 days, max dv = 6.57** **Fitzpatrick WA: >1.0-dv 11 days, max dv = 3.37** **Popo Agie WA: >1.0-dv 23 days, max dv = 3.35** **Wind River RA: >1.0-dv 15 days, max dv = 3.39** **Grand Teton NP: >1.0-dv 8 days, max dv = 2.63** **Teton WA: >1.0-dv 4 days, max dv = 1.33** **Yellowstone NP: >1.0-dv 3 days, max dv = 1.22** **Washakie WA: >1.0-dv 2 days, max dv = 1.70**
	Wyoming Regional Communities	Project	**Big Piney: >1.0-dv 24 days, max dv = 6.62** **Big Sandy: >1.0-dv 24 days, max dv = 3.66** **Boulder: >1.0-dv 18 days, max dv = 3.37** **Bronx: >1.0-dv 8 days, max dv = 1.79** **Cora: >1.0-dv 11 days, max dv = 2.17** **Daniel: >1.0-dv 14 days, max dv = 2.93** **Farson: >1.0-dv 33 days, max dv = 5.18** **Labarge: >1.0-dv 11 days, max dv = 5.73** **Merna: >1.0-dv 7 days, max dv = 2.46** **Pinedale: >1.0-dv 14 days, max dv = 2.94**

Air Quality Component	Impact Area	Source Group	Early-Project-Development Stage: WDR250
		Cumulative	**Big Piney: >1.0-dv 85 days, max dv = 14.43** **Big Sandy: >1.0-dv 108 days, max dv = 8.42** **Boulder: >1.0-dv 131 days, max dv = 10.59** **Bronx: >1.0-dv 63 days, max dv = 9.60** **Cora: >1.0-dv 73 days, max dv = 9.95** **Daniel: >1.0-dv 88 days, max dv = 12.68** **Farson: >1.0-dv 77 days, max dv = 10.85** **Labarge: >1.0-dv 39 days, max dv = 11.12** **Merna: >1.0-dv 33 days, max dv = 6.25** **Pinedale: >1.0-dv 113 days, max dv = 10.32**

Sources: USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. "Jonah Infill Drilling Project Draft Environmental Impact Statement Air Quality Impact Analysis Supplement," August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

USDI Bureau of Land Management and Wyoming Department of Environmental Quality 2005. "Jonah Infill Drilling Project Draft Air Quality Technical Support Document Supplement," August 2005. Prepared for BLM Pinedale Field Office and Wyoming Air Quality Division. Prepared by TRC Environmental Corporation, Laramie, Wyoming.

APPENDIX 7. OIL AND GAS LEASE STIPULATIONS FOR THE JMH CAP AREA

This appendix describes oil and gas standard lease terms and conditions and reasonable measures to reduce the environmental effects of oil and gas operations. It also shows oil and gas leasing stipulations, including criteria for exception, modification, or waiver. The information in this appendix clarifies information provided in the final environmental impact statement including: Chapter 2 (Wildlife Habitat Management and Lease Stipulations under the Leasable Fluid Minerals Management section), Table 2-2, and Appendices 4, 5, 6, and 14. Also see Appendices 4 and 5 in the JMH CAP. Other sources of information for this appendix include the "Uniform Format for Oil and Gas Lease Stipulations" (USDI and USDA 1989) and the notices of competitive oil and gas lease sales published by BLM on a bi-monthly basis. Both of these documents can be found on the BLM website: http://www.wy.blm.gov/minerals/og/leasing/oilgasleasing.html.

Standard leasing terms for oil and gas are listed in Section 6 of Form 3100-11, Offer to Lease and Lease for Oil and Gas (see Figure A7-1). Section 6 states:

> Lessee shall conduct operations in a manner that minimizes adverse impacts to the land, air and water, to cultural, biological, visual and other resources, and to other land uses or users. Lessee shall take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses shall be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.
>
> Prior to disturbing the surface of the leased lands, lessee shall contact BLM to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary. Areas to disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short-term special studies under guidelines provided by lessor. If in the conduct of operations, T&E species, objects of historic or scientific interest or substantial unanticipated environmental effects are observed, the lessee shall immediately contact lessor. Lessee shall cease any operations that would result in the destruction of such species or objects until appropriate steps have been taken to protect the site or recover the resources as determined by BLM in consultation with other appropriate agencies.

LEASE NOTICES

Lease notices provide more detailed information concerning limitations that already exist in law, lease terms, regulations, or operational orders. A Lease Notice also

addresses special items the lessee should consider when planning operations, but does not impose new or additional restrictions protect other resource values or land uses.

Standard Lease Notices

Lease Notice No. 1 (This Notice Applies To All Parcels)

BACKGROUND

Under Regulation 43 CFR 3101.1-2 and terms of the lease (BLM Form 3100-11), the authorized officer may require reasonable measures to minimize adverse impacts to other resource values, land uses, and users not addressed in lease stipulations at the time operations are proposed. Such reasonable measures may include, but are not limited to—

1. Modification of facility siting or design
2. Timing of operations
3. Specification of interim and final reclamation measures, which may require relocating proposed operations up to 200 meters, but not off the leasehold, and prohibiting surface disturbance activities for up to 60 days.

The lands within this lease may include areas not specifically addressed by lease stipulations that may contain special values, may be needed for special purposes, or may require special attention to prevent damage to surface and/or other resources. Possible special areas are identified below. Any surface use or occupancy within such special areas will be strictly controlled or, if absolutely necessary, prohibited. Appropriate modifications to imposed restrictions will be made for the maintenance and operation of producing wells.

1. Slopes in excess of 25 percent
2. Within 500 feet of surface water and/or riparian areas
3. Construction with frozen material or during periods when soil material is saturated or when watershed damage is likely to occur
4. Within 500 feet of interstate highways and 200 feet of other existing rights-of-way (i.e., U.S. and State highways, roads, railroads, pipelines, power lines)
5. Within 1/4 mile of occupied dwellings
6. Material sites.

GUIDANCE

The intent of this notice is to inform interested parties (potential lessees, permittees, operators) that when one or more of the above conditions exist, surface disturbing activities will be prohibited unless or until the permittee or designated representative

and the surface management agency (SMA) arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development and become a condition for approval when authorizing the action.

Specific threshold criteria (e.g., 500 feet from water) have been established based on the best information available. However, geographical areas and time periods of concern must be delineated at the field level (i.e., “surface water and/or riparian areas” may include both intermittent and ephemeral water sources or may be limited to perennial surface water).

The referenced oil and gas leases on these lands are hereby made subject to the stipulation that the exploration or drilling activities will not interfere materially with the use of the area as a materials site/free use permit. At the time operations on the above lands are commenced, notification will be made to the appropriate agency. The name of the appropriate agency may be obtained from the proper BLM field office.

Lease Notice No. 2 (This Notice Applies To All Parcels)

BACKGROUND

The Bureau of Land Management (BLM), by including National Historic Trails within its National Landscape Conservation System, has recognized these trails as national treasures. Our responsibility is to review our strategy for management, protection, and preservation of these trails. The National Historic Trails in Wyoming, which include the Oregon, California, Mormon Pioneer, and Pony Express Trails, as well as the Nez Perce Trail, were designated by Congress through the National Trails System Act (P.L. 90-543; 16 U.S.C. 1241-1251), as amended through P.L. 106-509 dated November 13, 2000. Protection of the National Historic Trails is normally considered under the National Historic Preservation Act (P.L. 89-665; 16 U.S.C. 470 et seq.) as amended through 1992 and the National Trails System Act. Additionally, Executive Order 13195, “Trails for America in the 21st Century,” signed January 18, 2001, states in Section 1: “Federal agencies will...protect, connect, promote, and assist trails of all types throughout the United States. This will be accomplished by: (b) Protecting the trail corridors associated with national scenic trails and the high priority potential sites and segments of national historic trails to the degrees necessary to ensure that the values for which each trail was established remain intact.”

Therefore, the BLM will consider all impacts and intrusions to National Historic Trails, their associated historic landscapes, and all associated features, such as trail traces, grave sites, historic encampments, inscriptions, natural features frequently commented on by emigrants in journals, letters and diaries, or any other feature contributing to the historic significance of the trails. Additional National Historic Trails will likely be designated amending the National Trails System Act. When these amendments occur, this notice will apply to those newly designated National Historic Trails as well.

STRATEGY

The BLM will proceed in this objective by conducting a viewshed analysis on either side of the designated centerline of the National Historic Trails in Wyoming, except, at this time, for the Nez Perce Trail, for the purpose of identifying and evaluating potential impacts to the trails, their associated historic landscapes, and their associated historic features. Subject to the viewshed analysis and archaeological inventory, reasonable mitigation measures may be applied. These may include, but are not limited to, modification of siting or design of facilities to camouflage or otherwise hide proposed operations within the viewshed. Additionally, specification of interim and final reclamation measures may require relocating proposed operations within the leasehold. Surface disturbing activities will be analyzed in accordance with the National Environmental Policy Act of 1969 (P.L. 91-190; 42 U.S.C. 4321-4347) as amended through P.L. 94-52, July 3, 1975 and P.L. 94-83, August 9, 1975, and the National Historic Preservation Act, supra, to determine if any design, siting, timing, or reclamation requirements are necessary. This strategy is necessary until the BLM determines that, based on the results of the completed viewshed analysis and archaeological inventory, the existing land use plans (Resource Management Plans) have to be amended.

The use of this lease notice is a pre-decisional action, necessary until final decisions regarding surface disturbing restrictions are made. Final decisions regarding surface disturbing restrictions will take place with full public disclosure and public involvement over the next several years if BLM determines that it is necessary to amend existing land use plans.

GUIDANCE

The intent of this notice is to inform interested parties (potential lessees, permittees, operators) that when any oil and gas lease contains remnants of National Historic Trails or is located within the viewshed of a National Historic Trails' designated centerline, surface disturbing activities will require the lessee, permittee, operator or, their designated representative, and the surface management agency to arrive at an acceptable plan for mitigation of anticipated impacts. This negotiation will occur prior to development and become a condition for approval when authorizing the action.

Lease Notice (Attachment to each lease)

Provisions of the Mineral Leasing Act (MLA) of 1920, as amended by the Federal Coal Leasing Amendments Act of 1976, affect an entity's qualifications to obtain an oil and gas lease. Section 2(a)(2)(A) of the MLA, 30 U.S.C. 201 (a)(2)(A), requires that any entity that holds and has held a Federal coal lease for 10 years beginning on or after August 4, 1976, and who is not producing coal in commercial quantities from each such lease, cannot qualify for the issuance of any other lease granted under the MLA. Compliance by coal lessees with Section 2(a)(2)(A) is explained in 43 CFR 3472.

In accordance with the terms of this oil and gas lease, with respect to compliance by the initial lessee with qualifications concerning Federal coal lease holdings, all assignees and transferees are hereby notified that this oil and gas lease is subject to cancellation if: (1) the initial lessee as assignor or as transferor has falsely certified

compliance with Section 2(a)(2)(A), or (2) because of a denial or disapproval by a State Office of a pending coal action, i.e., arms-length assignment, relinquishment, or logical mining unit, the initial lessee as assignor or as transferor is no longer in compliance with Section 2(a)(2)(A). The assignee, sublessee or transferee does not qualify as a bona fide purchaser and, thus, has no rights to bona fide purchaser protection in the event of cancellation of this lease due to noncompliance with Section 2(a)(2)(A).

Information regarding assignor, sublessor, or transferor compliance with Section 2(a)(2)(A) is contained in the lease case file as well as in other Bureau of Land Management records available through the State Office issuing this lease.

LEASE STIPULATIONS

Lease stipulations protect other resource values or land uses. A stipulation is a provision that modifies lease rights and is attached to and made a part of the lease.

Standard Lease Stipulation Format

Each lease parcel is reviewed and stipulations identified in the land use plan are applied. A standard format has been established for the application of oil and gas lease stipulations. Three categories of stipulations have been identified: No Surface Occupancy; Timing Limitation Stipulation (TLS); and Controlled Surface Use (CSU). Specific information regarding the location and purpose of the stipulation is included in each stipulation. Examples of the standard lease stipulation language are described in more detail below.

NO SURFACE OCCUPANCY STIPULATION - NSO

No surface occupancy or use is allowed on the lands described below (legal subdivision or other description).

NSO (1)

For the purpose of:

NSO (2)

<u>Exceptions</u>
There are no exceptions to the No Surface Occupancy Stipulation.

<u>Modifications and Waivers</u>
Modification of lease stipulations or permanent waivers of lease stipulations are analyzed, and approved or denied, by the Authorized Officer at the State Office. These actions require a separate NEPA analysis.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

TIMING LIMITATION STIPULATION - TLS

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

TLS (1)

On the lands described below:

TLS (2)

For the purpose of (reasons):

TLS (3)

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

CONTROLLED SURFACE USE STIPULATION—CSU

Rationale for CSU

Prohibition or limitation of surface use and other disruptive activities is intended to protect specific areas or values within the use area (for example, wildlife values that cannot be sufficiently protected using only seasonal restrictions). These areas and values include factors that limit such lifecycle activities as breeding grounds (leks, nesting sites, and early brood-rearing areas), and winter concentration areas. Surface disturbing and other disruptive activities include, but are not limited to, energy exploration, energy development, excavation for recovery cultural site information, reclamation activities, and potentially, maintenance and operations of facilities.

Surface occupancy or use is subject to the following special operating constraints.

CSU (1)

On the lands described below:

CSU (2)

For the purpose of:

CSU (3)

Exceptions

Exceptions to requirements developed from this guideline must be based on site-specific analysis of proposals (e.g., activity plans, plans of development, plans of operation, and applications for permits to drill). This analysis will occur case-by-case

and include consideration of exception criteria, as well as coordination with other agencies where appropriate.

Modifications and Waivers

Modifications of lease stipulations or permanent waivers of lease stipulations are analyzed, and approved or denied, by the Authorized Officer at the State Office. These actions require a separate NEPA analysis.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Oil and Gas Lease Stipulations That Apply to All Parcels

Resource: **Threatened, Endangered, and Special Status Species**

Stipulation: Controlled Surface Use**.** The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species, or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 et seq., including completion of any required procedure for conference or consultation.

Objective: To protect Threatened, Endangered, and Special Status Species.

Resource: **Existing Mineral Leases**

Stipulation: Operations will not be approved which, in the opinion of the authorized officer, would unreasonably interfere with the orderly development and/or production from a valid existing mineral lease issued prior to this one for the same lands.

Objective: To protect valid existing mineral leases.

Oil and Gas Lease Stipulations for Potentially Affected Lands and Resources

Table A7-1 describes the lease stipulations for the JMH CAP planning area. These stipulations are identified in Table 5 in the JMH CAP. Criteria to be considered for granting exceptions and for considering modifications or waivers are also discussed.

Table A7-1. Oil and Gas Lease Stipulations for Potentially Affected Lands and Resources[1]

Resource: Big Game Crucial Winter Ranges

Stipulation: Timing Limitation. No activity from November 15 through April 30 in big game crucial winter range.

Objective: To protect mule deer, elk, antelope, and moose range from disturbance during the winter season, and to facilitate long-term maintenance of wildlife populations.

Exception: The authorized officer may grant an exception to this stipulation, in consultation with WGFD, if the operator submits a plan that demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The authorized officer may modify the boundaries of the stipulated area if the WGFD determines that portions of the area no longer contain big game crucial winter range. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains big game crucial winter range for wildlife.

Resource: Big Game Parturition (Birthing) Areas

Stipulation: Timing Limitation. Activity is prohibited from May 1 through June 30 in elk or mule deer parturition areas.

Objective: To protect elk and mule deer parturition activities from disturbance and facilitate long-term maintenance of populations.

Exception: The authorized officer my grant an exception to this stipulation if the operator submits a plan which demonstrates that impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The authorized officer may modify the boundaries of the stipulated area if the WGFD determines that portions of the area no longer contain parturition habitat. The dates for the timing restriction may be modified if new information indicates that the dates are not valid for the leasehold. The dates for the timing restriction may be modified if new wildlife use

information indicates that the May 1 through June 30 dates are not valid for the leasehold.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains big game parturition habitat.

Resource: Greater sage-grouse leks[2]

Stipulation: Controlled Surface Use. Surface occupancy or use on, or within ¼ mile of the perimeter of leks is prohibited, unless anticipated adverse impacts can be adequately mitigated.

Objective: To protect greater sage-grouse leks.

Exception: The authorized officer may grant an exception for a proposed action if site-specific analysis determines the proposed action would not impair the use, function, or utility of the site for current or future mating activities. For example, some linear disturbances may not impair the function or utility of the site and, if the action does not adversely affect use of the habitat by the greater sage-grouse, the exception could be granted.

Modification: The authorized officer may modify the boundaries of the stipulated area if the WGFD determines that portions of the area no longer contain greater sage-grouse lek(s) and are not within ¼ of a mile of a lek perimeter.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains greater sage-grouse lek(s).

Resource: Greater sage-grouse nesting/early brood-rearing habitats[2]

Stipulation: Controlled Surface Use. Surface occupancy or use is restricted or prohibited unless anticipated adverse impacts can be adequately mitigated.

Objective: To protect suitable nesting and early brood-rearing habitat.

Exception: The authorized officer may grant an exception if a site-specific analysis determines that the action, as proposed or conditioned, would not impair the use, function, or utility of the site and the action does not adversely affect use of the habitat by the greater sage-grouse.

Modification: The authorized officer may modify the boundaries of the stipulated area if the WGFD determines that portions of the

area no longer contain greater sage-grouse nesting and early brood-rearing habitat.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains greater sage-grouse nesting and early brood-rearing habitat.

Resource: Greater sage-grouse winter concentration areas[2]

Stipulation: Controlled Surface Use. Surface occupancy or use is restricted or prohibited unless anticipated adverse impacts can be adequately mitigated.

Objective: To protect greater sage-grouse winter concentration areas (habitat).

Exception: The authorized officer may grant an exception for a proposed action if site-specific analysis determines the proposed action would not impair the function or utility of the site for winter use by greater sage-grouse, and the action does not adversely affect use of the habitat by the greater sage-grouse.

Modification: The authorized officer may modify the boundaries of the stipulated area if the WGFD determines that portions of the area no longer contain greater sage-grouse winter concentration areas (habitat).

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains greater sage-grouse winter concentration areas (habitat).

Resource: Breeding greater sage-grouse[2]

Stipulation: Timing Limitation. No disruptive activities are allowed on leks, or within ¼ mile of the perimeter of leks from March 1 to May 15 between the hours of 8:00 pm through 8:00 am daily.

Objective: To maintain use of the lek by greater sage-grouse.

Exception: The authorized officer may grant an exception if site-specific analysis determines that the action, as proposed or conditioned, would not adversely affect attendance on the lek during the mating season.

Modification: The authorized officer may modify the boundaries of the stipulated times or dates if, after consultation with the WGFD, it is determined that modifying the dates or time of day would not adversely impact greater sage-grouse breeding activities.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains greater sage-grouse lek(s).

Resource: Nesting/early brood-rearing greater sage-grouse[2]

Stipulation: Timing Limitation. No disruptive activities are allowed in greater sage-grouse nesting/early brood-rearing habitat from March 15 to July 15.

Objective: To protect greater sage-grouse during nesting/early brood-rearing.

Exception: The authorized officer may grant an exception if site-specific analysis determines that the action, as proposed, mitigated or conditioned, does not adversely affect nesting or early brood-rearing success.

Modification: The authorized officer may modify the boundaries of the stipulated times or dates if, after consultation with the WGFD, it is determined that modifying the dates would not adversely impact greater sage-grouse nesting/early brood-rearing activities.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains greater sage-grouse nesting/early brood-rearing activities.

Resource: Wintering greater sage-grouse[2]

Stipulation: Timing Limitation. Disruptive activities are prohibited in greater sage-grouse winter concentration areas from November 15 through March 14.

Objective: To protect wintering greater sage-grouse.

Exception: The authorized officer may grant an exception if site-specific analysis determines that the action, as proposed, mitigated or conditioned, does not adversely affect wintering greater sage-grouse.

Modification: The authorized officer may modify the stipulated dates if, after consultation with the WGFD, it is determined that modifying the dates would not adversely impact wintering greater sage-grouse.

Waiver: The authorized officer may waive this stipulation if the WGFD determines that the entire leasehold no longer contains winter habitat for greater sage-grouse.

Resource: Raptor Nest Sites

Stipulation: No Surface Occupancy. Activity is prohibited within ¼- to ½-mile (species dependent) of raptor nests.

Objective: To protect nesting raptors.

Exception: No exception for the nest. The authorized officer may grant an exception to this stipulation for the placement of facilities, "on" (very low profile) or below ground, and temporary disruptive activities, such as occur with pipeline construction, within the ½- to 1-mile area surrounding the nest if the operator submits a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The authorized officer may modify the boundaries of the stipulated area if, in coordination with USFWS, it is determined that area can be occupied without adversely affecting raptor nest sites or nesting.

Waiver: The authorized officer may waive this stipulation if, in coordination with USFWS, it is determined that the entire leasehold can be occupied without adversely affecting raptor nest sites or nesting habitat.

Resource: Raptor Nest Sites

Stipulation: Timing Limitation. No activity is allowed from February 1 through July 31 in a ½- to 1-mile (species-dependent) radius around raptor nest sites that have been active within the past 5 years.

Objective: To protect reproductive potential of breeding habitat for raptors.

Exception: No exception for the nest. The authorized officer may grant an exception to this stipulation for placement of facilities, "on" (very low profile) or below ground, and temporary disruptive activities, such as occur with pipeline construction, within the ½- to 1-mile area surrounding the nest if the operator submits a plan that demonstrates the impacts from the proposed action are minimal or can be adequately mitigated.

Modification: The authorized officer may modify the boundaries of the stipulated area if it is determined that portions of the area no longer are within ½-mile of raptor nest sites. The dates for the timing restriction may be modified if new information indicates

that the February 1 through July 31 dates are not valid for the leasehold.

Waiver: The authorized officer may waive this stipulation if it is determined that the entire leasehold no longer is within ½- to 1 mile of raptor nest sites.

Resource: Mountain Plover

Stipulation: Timing Limitation. Where nesting plovers are found, activity within 1/4 mile (or appropriate distance) would be restricted from April 10 to July 10.

Objective: To facilitate reproductive efforts of mountain plover.

Exception: The authorized officer may grant an exception to this stipulation if the operator submits a plan demonstrating that the impacts from the proposed action are minimal or can be adequately mitigated. The appropriate buffer area may be adjusted to prevent direct loss of the nest or indirect impacts from human-related disturbance. The appropriate buffer distance will vary depending on topography, type of activity proposed, and duration of disturbance.

Modification: The authorized officer may modify the boundaries of the stipulated area if it is determined that portions of the area no longer are within the buffer of mountain plover nest sites. The dates for the timing restriction may be modified if new information indicates that the April 10 to July 10 dates are not valid for the leasehold.

Waiver: The authorized officer may waive this stipulation if it is determined that the entire leasehold no longer is within buffer of mountain plover nest sites.

Resource: Game and Special Status Fish Species

Stipulation: Timing Limitation. Seasonal stipulations will be applied to protect spawning areas. Times of closure are dependent on the species affected and specific the location(s).

Objective: To ensure healthy populations of game and special status fish.

Exception: An exception may be granted after a site assessment is conducted and if the operator can demonstrate in a surface use plan of operations that adverse effects can be eliminated and activities would not affect game or special status fish.

Modification: The authorized officer may modify the boundaries of the stipulated area if, in consultation with WGFD, it is determined that portions of the area can be occupied without adversely affecting game or special status fish.

Waiver: A waiver may be granted if it is determined, in consultation with the WGFD, that the entire leasehold does not contain game or special status fish.

Resource: Special Status Plants

Stipulation: No Surface Occupancy. Surface disturbing activity is prohibited on, or within a specific distance (species-specific) of special status plants.

Objective: To protect populations of special status plants.

Exception: None.

Modification: The authorized officer may modify the boundaries of the stipulated area if it is determined that portions of the area are no longer capable of supporting special status plants.

Waiver: The authorized officer may waive this stipulation if, in coordination with USFWS (if appropriate), it is determined that the entire leasehold is no longer capable of supporting special status plants.

Resource: Special Status Plants Potential Habitat

Stipulation: Controlled Surface Use. Surface disturbing activity is limited or prohibited on, or within a specific distance (species-specific) of special status plant potential habitats.

Objective: To protect populations of special status plants.

Exception: The authorized officer may grant an exception if searches determine that the plant is not within the area and the operator submits a plan demonstrating that the proposed action will not affect the special status plants or their habitats. Where impacts to sensitive resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the stipulated area if it is determined that portions of the area are no longer capable of supporting special status plants.

Waiver: The authorized officer may waive this stipulation if, in coordination with USFWS (if appropriate), it is determined that the entire leasehold is no longer capable of supporting special status plants.

Resource: Developed Recreation Sites

Stipulation: No Surface Occupancy. Activity is prohibited in the Greater Sand Dunes ACEC developed recreation sites and parking lot.

Objective: To recognize and protect the public's opportunity for quality recreation experiences at sites developed for that purpose. This stipulation would protect capital investment, and to a limited extent, visitors' recreation experiences while at the site.

Exception: None.

Modification: The authorized officer may modify the boundaries of the area if the recreation area boundaries are changed.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains a developed recreation area.

Resource: Indian Gap

Stipulation: No Surface Occupancy. Activity is prohibited on and within 100 feet of Indian Gap.

Objective: To recognize and protect Indian Gap and setting.

Exception: None.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of Indian Gap are changed.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the Indian Gap area.

Resource: Crookston Ranch Site

Stipulation: No Surface Occupancy. Activity is prohibited on the Crookston Ranch site and surrounding ½-mile area.

Objective: To preserve historic features, and for interpretation of ranching history in the area.

Exception: None for the ranch site. An exception for the ½-mile area surrounding the Crookston Ranch site could be considered if the activity would not affect the historic feature or the setting.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of Crookston Ranch are changed.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the Crookston Ranch area.

Resource: Sensitive Resources

Stipulation: No Surface Occupancy. Activity is prohibited on overlapping sensitive resources.

Objective: To protect areas with a high concentration of overlapping sensitive resource values, including, but not limited to, key wildlife habitat, cultural resources, Native American Respected Places, and scenic values.

Exception: None.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the sensitive resources change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the overlapping sensitive resources.

Resource: Sensitive Resources

Stipulation: Controlled Surface Use. Activity is limited or prohibited on overlapping sensitive resources.

Objective: To protect areas with a high concentration of overlapping sensitive resource values, including, but not limited to, key wildlife habitat, cultural resources, Native American Respected Places, and scenic values.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that the adverse impacts to sensitive resources can be mitigated. Where impacts to sensitive resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the sensitive resources change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the overlapping sensitive resources.

Resource: Area for ½-mile within Area 3

Stipulation: No Surface Occupancy. Activity is prohibited for a distance of ½ mile within portions of the boundary of Area 3.

Objective: To provide adequate habitat, as well as opportunity for the use of crucial winter range, calving/fawning areas, migration corridors, etc., protection of sensitive resources, and protection of public health and safety.

Exception: None.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of Area 3 change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer falls within ½ mile of the boundary of Area 3.

Resource: South Pass Historic Landscape ACEC (Visible Portion)

Stipulation: No Surface Occupancy. Activity is prohibited on the area surrounding the trails and visible from the trails.

Objective: To protect the visual and historical integrity of the historic trails and surrounding viewscape.

Exception: None.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the portion visible from the trails change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the boundaries of the portion visible from the trails.

Resource: South Pass Historic Landscape ACEC (Non-Visible Portion)

Stipulation: Controlled Surface Use. Activity is limited or prohibited on the area surrounding the trails that are shielded by topography and not visible from the trails.

Objective: To protect the visual and historical integrity of the historic trails and surrounding area.

Exception: The authorized officer may grant an exception if the activity is subordinate to the landform and not visible from the historic trails, and provided environmental analysis indicates the visual integrity of the area can be maintained. Where impacts to sensitive resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the portion not visible from the trails change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the boundaries of the portion not visible from the trails.

Resource: 100-year Floodplains, Wetlands, or Riparian Areas

Stipulation: Controlled Surface Use. Surface disturbing activity is limited or prohibited for such permanent facilities as storage tanks and structure pits in 100-year floodplains, wetlands, or riparian areas.

Objective: To protect water quality and provide for healthy riparian areas.

Exception: The authorized officer may grant an exception for structures that would enhance protection and management of 100-year floodplains, wetlands, and riparian areas. The authorized officer also may grant an exception for linear crossings in these areas if the lessee or operator submits a plan demonstrating that adverse impacts to sensitive can be mitigated. Where impacts to sensitive resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the stipulated area if it is determined that portions of the area are no longer capable of supporting special status plants.

Waiver: The authorized officer may waive this stipulation if the entire leasehold is no longer contains 100-year floodplains, wetlands or riparian areas.

Resource: Slopes Greater Than 20 Percent

Stipulation: Controlled Surface Use. Activity is limited or prohibited on slopes greater than 20 percent.

Objective: To protect slopes, which provide key habitat, hiding cover, and topographic relief for wildlife.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to slopes and related resources can be mitigated. Where impacts to slopes cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the sensitive resources change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains slopes greater than 20 percent.

Resource: Greater Sand Dunes ACEC

Stipulation: Controlled Surface Use. Activity is limited or prohibited in the Greater Sand Dunes ACEC (eastern portion).

Objective: To preserve and protect the integrity of the unique values in the area for future public use and enjoyment. These values include: the unusual geological features associated with the sand dunes and the area around Boars Tusk; the biological interrelationships supported by the dunes, especially the Steamboat desert elk herd, mule deer herd, and other dependent plants and animals; and a variety of recreation uses.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to ACEC resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the ACEC change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the ACEC.

Resource: Steamboat Mountain ACEC

Stipulation: Controlled Surface Use. Activity is limited or prohibited in the Steamboat Mountain ACEC.

Objective: 1) To enhance and maintain the water quality, vegetation, soil, and wildlife resources to ensure biological diversity and a healthy ecosystem; 2) to maintain the unique diverse habitats (big sagebrush, aspen, limber pine, and mountain shrub communities) in the Steamboat Mountain area, especially on stabilized sand dunes along Steamboat Rim, Indian Gap, and in the Johnson, Lafonte, and Box Canyon areas; and 3) provide suitable habitat to maintain the continued existence of the Steamboat elk herd and other big game populations preserve and protect the integrity of the unique values in the area for future public use and enjoyment.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to ACEC resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the ACEC change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the ACEC.

Resource: West Sand Dunes Archaeological District

Stipulation: Controlled Surface Use. Activity is limited or prohibited in the West Sand Dunes Archaeological District.

Objective: To protect important heritage resources and provide for scientific study, education, and interpretation.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to area resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the West Sand Dunes Archaeological District change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the area.

Resource: Red Desert Watershed Management Area

Stipulation: Controlled Surface Use. Activity is limited or prohibited in the Red Desert Watershed Management Area.

Objective: To protect visual resources, watershed values, and wildlife resources, and to provide large areas of unobstructed views for enjoyment of scenic qualities.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to area resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the area if the boundaries of the Red Desert Watershed Management Area change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the Red Desert Watershed Management Area.

Resource: Steamboat Mountain Management Area

Stipulation: Controlled Surface Use. Activity is limited or prohibited in the Steamboat Mountain Management Area.

Objective: To protect important Native American cultural values, Indian Gap, important watershed values, unique wildlife habitat features, and crucial and overlapping big game habitat.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to area resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the Steamboat Mountain Management Area if the boundaries of the area change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the Steamboat Mountain Management Area.

Resource: Portions of White Mountain

Stipulation: Controlled Surface Use. Activity is limited or prohibited on portions of White Mountain.

Objective: To protect important visual resources, heritage resources and Native American Respected Places.

Exception: The authorized officer may grant an exception if the lessee or operator submits a plan demonstrating that adverse impacts to area resources can be mitigated. Where impacts to these resources cannot be mitigated to the satisfaction of the Surface Managing Agency, surface occupancy on that area must be prohibited.

Modification: The authorized officer may modify the boundaries of the White Mountain area if the boundaries of the area change.

Waiver: The authorized officer may waive this stipulation if the entire leasehold no longer contains the portions of White Mountain.

[1]These actions may also be applied to activities other than those associated with oil and gas development based upon a site specific NEPA analysis.

[2]For further clarification on lease stipulations, COAs, and the criteria used for granting exceptions, see Appendix 4 and Appendix 5.

Figure A7-1. Standard Lease Form 3100-011

Form 3100-11
(January 2006)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0185
Expires: 6/30/2006

Serial Number

OFFER TO LEASE AND LEASE FOR OIL AND GAS

The undersigned (page 2) offers to lease all or any of the lands in Item 2 that are available for lease pursuant to the Mineral Leasing Act of 1920, as amended and supplemented (30 U.S.C. 181 et seq.), the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351-359), the Attorney General's Opinion of April 2, 1941 (40 Op. Atty. Gen. 41), or the Combined Hydrocarbon Leasing Act of 1981 (95 Stat 1070).

READ INSTRUCTIONS BEFORE COMPLETING

1. Name
   Street
   City, State, Zip

2. This application/offer/lease is for: *(Check Only One)* PUBLIC DOMAIN LANDS ACQUIRED LANDS (percent U.S. interest _____)

Surface managing agency if other than Bureau of Land Management (BLM): _____ Unit/Project _____

Legal description of land requested: *Parcel No.: _____ *Sale Date (mm/dd/yyyy): _____

***See Item 2 in Instructions below prior to completing Parcel Number and Sale Date.**

T.	R.	Meridian	State	County

Total acres applied for _____

Amount remitted: Filing fee $ _____ Rental fee $ _____ Total $ _____

DO NOT WRITE BELOW THIS LINE

3. Land included in lease:

T.	R.	Meridian	State	County

Total acres in lease _____

Rental retained $ _____

This lease is issued granting the exclusive right to drill for, mine, extract, remove and dispose of all the oil and gas (except helium) in the lands described in Item 3 together with the right to build and maintain necessary improvements thereupon for the term indicated below, subject to renewal or extension in accordance with the appropriate leasing authority. Rights granted are subject to applicable laws, the terms, conditions, and attached stipulations of this lease, the Secretary of the Interior's regulations and formal orders in effect as of lease issuance, and to regulations and formal orders hereafter promulgated when not inconsistent with lease rights granted or specific provisions of this lease.

NOTE: This lease is issued to the high bidder pursuant to his/her duly executed bid or nomination form submitted under 43 CFR 3120 and is subject to the provisions of that bid or nomination and those specified on this form.

Type and primary term:

Noncompetitive lease (ten years)

Competitive lease (ten years)

Other _____

THE UNITED STATES OF AMERICA

by _____
(BLM)

_____
(Title) (Date)

EFFECTIVE DATE OF LEASE _____

(Continued on page 2)

Figure A7-1. Standard Lease Form 3100-011

4. (a) Undersigned certifies that (1) offeror is a citizen of the United States; an association of such citizens; a municipality; or a corporation organized under the laws of the United States or of any State or Territory thereof, (2) all parties holding an interest in the offer are in compliance with 43 CFR 3100 and the leasing authorities; (3) offeror's chargeable interests, direct and indirect, in each public domain and acquired lands separately in the same State, do not exceed 246,080 acres in oil and gas leases (of which up to 200,000 acres may be in oil and gas options or 300,000 acres in leases in each leasing District in Alaska of which up to 200,000 acres may be in options, (4) offeror is not considered a minor under the laws of the State in which the lands covered by this offer are located; (5) offeror is in compliance with qualifications concerning Federal coal lease holdings provided in sec. 2(a)2(A) of the Mineral Leasing Act; (6) offeror is in compliance with reclamation requirements for all Federal oil and gas lease holdings as required by sec. 17(g) of the Mineral Leasing Act; and (7) offeror is not in violation of sec. 41 of the Act. (b) Undersigned agrees that signature to this offer constitutes acceptance of this lease, including all terms conditions, and stipulations of which offeror has been given notice, and any amendment or separate lease that may include any land described in this offer open to leasing at the time this offer was filed but omitted for any reason from this lease. The offeror further agrees that this offer cannot be withdrawn, either in whole or in part unless the withdrawal is received by the proper BLM State Office before this lease, an amendment to this lease, or a separate lease, whichever covers the land described in the withdrawal, has been signed on behalf of the United States.

This offer will be rejected and will afford offeror no priority if it is not properly completed and executed in accordance with the regulations, or if it is not accompanied by the required payments.

Duly executed this _____ day of _____ , 20 ____ _____

(Signature of Lessee or Attorney-in-fact)

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 make it a crime for any person knowingly and willfully to make to any department or Agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

LEASE TERMS

Sec. 1. Rentals--Rentals must be paid to proper office of lessor in advance of each lease year. Annual rental rates per acre or fraction thereof are:

(a) Noncompetitive lease, $1.50 for the first 5 years; thereafter $2.00;

(b) Competitive lease, $1.50; for the first 5 years; thereafter $2.00;

(c) Other, see attachment, or

as specified in regulations at the time this lease is issued.

If this lease or a portion thereof is committed to an approved cooperative or unit plan which includes a well capable of producing leased resources, and the plan contains a provision for allocation of production, royalties must be paid on the production allocated to this lease. However, annual rentals must continue to be due at the rate specified in (a), (b), or (c) rentals for those lands not within a participating area.

Failure to pay annual rental, if due, on or before the anniversary date of this lease (or next official working day if office is closed) must automatically terminate this lease by operation of law. Rentals may be waived, reduced, or suspended by the Secretary upon a sufficient showing by lessee.

See. 2. Royalties--Royalties must be paid to proper office of lessor. Royalties must be computed in accordance with regulations on production removed or sold. Royalty rates are:

(a) Noncompetitive lease, 12 1/2%;

(b) Competitive lease, 12 1/2 %;

(c) Other, see attachment; or

as specified in regulations at the time this lease is issued.

Lessor reserves the right to specify whether royalty is to be paid in value or in kind, and the right to establish reasonable minimum values on products after giving lessee notice and an opportunity to be heard. When paid in value, royalties must be due and payable on the last day of the month following the month in which production occurred. When paid in kind, production must be delivered, unless otherwise agreed to by lessor, in merchantable condition on the premises where produced without cost to lessor. Lessee must not be required to hold such production in storage beyond the last day of the month following the month in which production occurred, nor must lessee be held liable for loss or destruction of royalty oil or other products in storage from causes beyond the reasonable control of lessee.

Minimum royalty in lieu of rental of not less than the rental which otherwise would be required for that lease year must be payable at the end of each lease year beginning on or after a discovery in paying quantities. This minimum royalty may be waived, suspended, or reduced, and the above royalty rates may be reduced, for all or portions of this lease if the Secretary determines that such action is necessary to encourage the greatest ultimate recovery of the leased resources, or is otherwise justified.

An interest charge will be assessed on late royalty payments or underpayments in accordance with the Federal Oil and Gas Royalty Management Act of 1982 (FOGRMA) (30 U.S.C. 1701). Lessee must be liable for royalty payments on oil and gas lost or wasted from a lease site when such loss or waste is due to negligence on the part of the operator, or due to the failure to comply with any rule, regulation, order, or citation issued under FOGRMA or the leasing authority.

(Continued on page 3)

Figure A7-1. Standard Lease Form 3100-011

Sec. 3. Bonds-A bond must be filed and maintained for lease operations as required under regulations.

Sec. 4. Diligence, rate of development, unitization, and drainage-Lessee must exercise reasonable diligence in developing and producing, and must prevent unnecessary damage to, loss of, or waste of leased resources. Lessor reserves right to specify rates of development and production in the public interest and to require lessee to subscribe to a cooperative or unit plan, within 30 days of notice, if deemed necessary for proper development and operation of area, field, or pool embracing these leased lands. Lessee must drill and produce wells necessary to protect leased lands from drainage or pay compensatory royalty for drainage in amount determined by lessor.

Sec. 5. Documents, evidence, and inspection-Lessee must file with proper office of lessor, not later than 30 days after effective date thereof, any contract or evidence of other arrangement for sale or disposal of production. At such times and in such form as lessor may prescribe, lessee must furnish detailed statements showing amounts and quality of all products removed and sold, proceeds there from, and amount used for production purposes or unavoidably lost. Lessee may be required to provide plats and schematic diagrams showing development work and improvements, and reports with respect to parties in interest, expenditures, and depreciation costs. In the form prescribed by lessor, lessee must keep a daily drilling record, a log, information on well surveys and tests, and a record of subsurface investigations and furnish copies to lessor when required. Lessee must keep open at all reasonable times for inspection by any authorized officer of lessor, the leased premises and all wells, improvements, machinery, and fixtures thereon, and all books, accounts, maps, and records relative to operations, surveys, or investigations on or in the leased lands. Lessee must maintain copies of all contracts, sales agreements, accounting records, and documentation such as billings, invoices, or similar documentation that supports costs claimed as manufacturing, preparation, and/or transportation costs. All such records must be maintained in lessee's accounting offices for future audit by lessor. Lessee must maintain required records for 6 years after they are generated or, if an audit or investigation is underway, until released of the obligation to maintain such records by lessor.

During existence of this lease, information obtained under this section will be closed to inspection by the public in accordance with the Freedom of Information Act (5 U.S.C. 552).

Sec. 6. Conduct of operations-Lessee must conduct operations in a manner that minimizes adverse impacts to the land, air, and water, to cultural, biological, visual, and other resources, and to other land uses or users. Lessee must take reasonable measures deemed necessary by lessor to accomplish the intent of this section. To the extent consistent with lease rights granted, such measures may include, but are not limited to, modification to siting or design of facilities, timing of operations, and specification of interim and final reclamation measures. Lessor reserves the right to continue existing uses and to authorize future uses upon or in the leased lands, including the approval of easements or rights-of-way. Such uses must be conditioned so as to prevent unnecessary or unreasonable interference with rights of lessee.

Prior to disturbing the surface of the leased lands, lessee must contact lessor to be apprised of procedures to be followed and modifications or reclamation measures that may be necessary.

Areas to be disturbed may require inventories or special studies to determine the extent of impacts to other resources. Lessee may be required to complete minor inventories or short term special studies under guidelines provided by lessor. If in the conduct of operations, threatened or endangered species, objects of historic or scientific interest or substantial unanticipated environmental effects are observed, lessee must immediately contact lessor. Lessee must cease any operations that would result in the destruction of such species or objects.

See. 7. Mining operations-To the extent that impacts from mining operations would be substantially different or greater than those associated with normal drilling operations, lessor reserves the right to deny approval of such operations.

Sec. 8. Extraction of helium-Lessor reserves the option of extracting or having extracted helium from gas production in a manner specified and by means provided by lessor at no expense or loss to lessee or owner of the gas. Lessee must include in any contract of sale of gas the provisions of this section.

Sec. 9. Damages to property-Lessee must pay lessor for damage to lessor's improvements, and must save and hold lessor harmless from all claims for damage or harm to persons or property as a result of lease operations.

Sec. 10. Protection of diverse interests and equal opportunity-Lessee must: pay when due all taxes legally assessed and levied under laws of the State or the United States; accord all employees complete freedom of purchase; pay all wages at least twice each month in lawful money of the United States; maintain a safe working environment in accordance with standard industry practices and take measures necessary to protect the health and safety of the public.

Lessor reserves the right to ensure that production is sold at reasonable prices and to prevent monopoly. If lessee operates a pipeline, or owns controlling interest in a pipeline or a company operating a pipeline, which may be operated accessible to oil derived from these leased lands, lessee must comply with section 28 of the Mineral Leasing Act of 1920.

Lessee must comply with Executive Order No. 11246 of September 24, 1965, as amended, and regulations and relevant orders of the Secretary of Labor issued pursuant thereto. Neither lessee nor lessee's subcontractors must maintain segregated facilities.

Sec. I 1. Transfer of lease interests and relinquishment of lease-As required by regulations, lessee must file with lessor any assignment or other transfer of an interest in this lease. Lessee may relinquish this lease or any legal subdivision by filing in the proper office a written relinquishment, which will be effective as of the date of filing, subject to the continued obligation of the lessee and surety to pay all accrued rentals and royalties.

Sec. 12. Delivery of premises-At such time as all or portions of this lease are returned to lessor, lessee must place affected wells in condition for suspension or abandonment, reclaim the land as specified by lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by lessor for preservation of producible wells.

Sec. 13. Proceedings in case of default-If lessee fails to comply with any provisions of this

lease, and the noncompliance continues for 30 days after written notice thereof, this lease will be subject to cancellation unless or until the leasehold contains a well capable of production of oil or gas in paying quantities, or the lease is committed to an approved cooperative or unit plan or communitization agreement which contains a well capable of production of unitized substances in paying quantities. This provision will not be construed to prevent the exercise by lessor of any other legal and equitable remedy, including waiver of the default. Any such remedy or waiver will not prevent later cancellation for the same default occurring at any other time. Lessee must be subject to applicable provisions and penalties of FOGRMA (30 U.S. C. 170 1).

Sec. 14. Heirs and successors-in-interest-Each obligation of this lease will extend to and be binding upon, and every benefit hereof will inure to the heirs, executors, administrators, successors, beneficiaries, or assignees of the respective parties hereto.

(Continued on page 4)

Figure A7-1. Standard Lease Form 3100-011

INSTRUCTIONS

A. General

1. Page 1 of this form is to be completed only by parities filing for a noncompetitive lease. The BLM will complete page 1 of the form for all other types of leases.
2. Entries must be typed or printed plainly in ink. Offeror must sign Item 4 in ink.
3. An original and two copies of this offer must he prepared and filed in the proper BLM State Office. See regulations at 43 CFR 1821.2-1 for office locations.
4. If more space is needed, additional sheets must be attached to each copy of the form submitted.

B. Special

Item 1-Enter offeror's name and billing address.

Item 2-Identify the mineral status and, if acquired lands, percentage of Federal ownership of applied for minerals. Indicate the agency controlling the surface of the land and the name of the unit or Project which the land is a part. The same offer may not include both Public Domain and Acquired lands. Offeror also may provide other information that will assist in establishing title for minerals. The description of land must conform to 43 CFR 31 10. A single parcel number and Sale Date will be the only acceptable description during the period from the first day following the end of a competitive process until the end of that same month, using the parcel number on the List of Lands Available for Competitive Nominations or the Notice of Competitive Lease Sale, whichever is appropriate.

Payments: The amount remitted must include the filing fee and the first year's rental at the rate of $1.50 per acre or fraction thereof. The full rental based on the total acreage applied for must accompany an offer even if the mineral interest of the United States is less than 100 percent. The filing fee will be retained as a service charge even if the offer is completely rejected or withdrawn. To protect priority, it is important that the rental submitted be sufficient to cover all the land requested. If the land requested includes lots or irregular quarter-quarter sections, the exact area of which is not known to the offeror, rental should be submitted on the basis of each such lot or quarter-quarter section containing 40 acres. If the offer is withdrawn or rejected in whole or in part before a lease issues, the rental remitted for the parts withdrawn or rejected will be returned.

Item 3-This space will be completed by the United States.

NOTICES

The Privacy Act of 1974 and the regulations in 43 CFR 2.48(d) provide that you be furnished with the following information in connection with information required by this oil and gas lease offer.

AUTHORITY: 30 U.S.C. 181 et seq.; 30 U.S.C 351-359

PRINCIPAL PURPOSE: The information is to be used to process oil and gas offers and leases.

ROUTINE USES: (1) The adjudication of the lessee's rights to the land or resources. (2) Documentation for public information in support of notations made on land status records for the management, disposal, and use of public lands and resources. (3) Transfer to appropriate Federal agencies when consent or concurrence is required prior to granting a right in public lands or resources. (4)(5) Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions.

EFFECT OF NOT PROVIDING INFORMATION: If all the information is not provided, the offer may be rejected. See regulations at 43 CFR 3100.

The Paperwork Reduction Act of 1995 requires us to inform you that:

This information is being collected pursuant to the law.

This information will be used to create and maintain a record of oil and gas lease activity.

Response to this request is required to obtain a benefit.

BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 1 hour per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0145), Bureau Information Collection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop, 401LS, Washington, D.C. 20240

APPENDIX 8. ACEC CRITERIA

As part of the process for developing the Jack Morrow Hills Coordinated Activity Plan (JMH CAP), the Bureau of Land Management (BLM) planning team reviewed all BLM-administered public lands in the planning area to determine whether any areas should be considered for designation as an Area of Critical Environmental Concern (ACEC). Four existing ACECs were not reviewed to determine whether any existing ACEC designations should be modified or terminated, as this task was accomplished and documented through the Green River Resource Management Plan (RMP). The Steamboat Mountain ACEC was reviewed and considered for removal or termination in Alternative 2 of the EIS. Only BLM-administered public lands (i.e., public land "surface") can be considered for ACEC designation.

Three potential new ACECs, and three potential expansions to existing ACECS were identified and addressed during the Jack Morrow Hills CAP planning effort.

Of the 6 areas and expansions reviewed, the BLM-administered lands on five areas were found to not need the special management emphasis of an ACEC designation and were dropped from further consideration. Expansion of one area, the Steamboat Mountain ACEC, was recommended. The BLM-administered lands on the five existing ACECs within the JMH CAP planning area, including the Steamboat Mountain ACEC, were retained. Appendix 1 in the Green River RMP contains a listing of the existing ACECs for the entire Green River RMP area (currently the Rock Springs Field Office).

To be eligible for designation as an ACEC, an area must meet the relevance and importance criteria described in 43 CFR 1610.7-2 and BLM Manual 1613.

Relevance and importance are defined as follows:

- **Relevance:** There shall be present a significant historic, cultural, or scenic value; a fish or wildlife resource or other natural system or process; or natural hazard.
- **Importance:** The above-described value, resource, system, process, or hazard shall have substantial significance and values. This generally requires qualities of more than local significance and special worth, consequence, meaning, distinctiveness, or cause for concern. A natural hazard can be important if it is a significant threat to life or property.

RELEVANCE

An area meets the relevance criterion if it contains one or more of the following:

1. A significant historic, cultural, or scenic value (including, but not limited to, rare or sensitive archeological resources and religious or cultural resources important to Native Americans)
2. A fish and wildlife resource (including, but not limited to, habitat for endangered, sensitive, or threatened species, or habitat essential for maintaining species diversity)

3. A natural process or system (including, but not limited to, endangered, sensitive, or threatened plant species; rare, endemic, or relic plants or plant communities that are terrestrial, aquatic, or riparian; or rare geological features)
4. Natural hazards (including, but not limited to, areas of avalanche, dangerous flooding, landslides, unstable soils, seismic activity, or dangerous cliffs). A hazard caused by human action may meet the relevance criteria if it is determined through the resource management planning process to have become part of a natural process.

IMPORTANCE

An area meets the importance criterion if it meets one or more of the following:

1. More than locally significant qualities that give it special worth, consequence, meaning, distinctiveness, or cause for concern, especially compared to any similar resource
2. Qualities or circumstances that make it fragile, sensitive, rare, irreplaceable, exemplary, unique, endangered, threatened, or vulnerable to adverse change
3. Recognized as warranting protection to satisfy national priority concerns or to carry out the mandates of the Federal Land Policy and Management Act (FLPMA)
4. Qualities that warrant highlighting to satisfy public or management concerns about safety and public welfare
5. Poses a significant threat to human life and safety or to property.

Table A8-1 shows the areas that were identified in the review, and the BLM relevance and importance determinations that were made.

The Green River RMP interdisciplinary team identified potential expansions for two of the existing ACECs, to be addressed during the JMH CAP planning effort.

Based on the criteria, expansions were reviewed for two areas. The existing ACECs were not reevaluated. One of the proposed expansions would add an additional species to the existing Special Status Plant Species ACEC. The other expansion would add the wildlife habitat and migration corridors of the core area to the Steamboat Mountain ACEC.

Table A8-1. Evaluation of ACEC Relevance and Importance Criteria

Existing or Proposed ACECs	Relevance Criteria (resources)	Importance Criteria	Recommended	Comments
BASIN BIG SAGEBRUSH/LEMON SCURFPEA (Outside Steamboat Mountain ACEC Proposed Expansion Area)	Criterion 3	Criteria 1, 2	No	Listed in Wyoming Natural Diversity Database (WYNDD) reports as rare and unique and worth special protection; fragile habitat; used extensively by a desert elk herd. Meets the relevance criteria for natural processes or systems. Meets the importance criteria for more than locally significant qualities that give the area special distinctiveness, and cause for concern because of qualities that make the area fragile, sensitive, rare, and vulnerable to adverse change. Compared to the Steamboat Mountain ACEC proposed expansion area, the vegetative habitat outside the proposed expansion area does not need equal special management emphasis. See discussion of the expansion of the Steamboat Mountain ACEC.
CUSHION PLANT COMMUNITY	Criteria 2, 3	Criteria 1, 2, 3	No	Listed in WYNDD reports as fragile, unique, and worth special protection. Is also a special habitat used by the mountain plover, a BLM Sensitive species. Meets the relevance criteria for wildlife resource and natural processes or systems. Meets the importance criteria for more than locally significant qualities that give the area special distinctiveness and cause for concern because of qualities that make it fragile and vulnerable to adverse change, warranting protection to satisfy national priority concerns and to carry out the mandates of FLPMA. The area can be effectively managed through the proposed management decisions that cover this area without the need for special management emphasis or ACEC designation.

Table A8-1. Evaluation of ACEC Relevance and Importance Criteria

Existing or Proposed ACECs	Relevance Criteria (resources)	Importance Criteria	Recommended	Comments
PALEOSOL DEPOSITION AREA (proposed Greater Sand Dunes ACEC expansion)	Criteria 1, 3	Criteria 1, 2	No	Meets the relevance criteria for significant cultural resources; eligible for inclusion in National Register of Historic Places (NRHP) under Criteria D (36 CFR 60) for scientific information presence and potential. The archeological and geological deposits are relevant for the study of environmental change during the transition from the Pleistocene to the Holocene geological age and the study of human adaptation to these natural systemic changes over time. Meets the importance criteria for scientific qualities pursuant to nationally significant issues in archeological science. The circumstances (e.g., archeological and geological strata) of these qualities are fragile, sensitive, rare, exemplary, unique, and irreplaceable. The archeological and geological deposits from the Pleistocene to Holocene transition are unique and in an excellent state of preservation. Considering that the real values of these deposits can only be determined through careful scientific excavation, the legal and regulatory requirements for those activities and the proposed management prescriptions for the area are sufficient to effectively manage the area. Special management emphasis or ACEC designation is unnecessary.
PINNACLES GEOGRAPHIC AREA	Criteria 1, 3	Criteria 1, 2	No	Meets the relevance criteria for significant scenic value and natural processes or systems. Meets the importance criteria for more than locally significant qualities and for qualities that make the area fragile, sensitive, rare, and vulnerable to adverse change. The proposed management prescription for the area is sufficient to effectively manage the area, and special management emphasis or ACEC designation is unnecessary.

Table A8-1. Evaluation of ACEC Relevance and Importance Criteria

Existing or Proposed ACECs	Relevance Criteria (resources)	Importance Criteria	Recommended	Comments
SPECIAL STATUS (CANDIDATE) PLANT SPECIES (Proposed Expansion) Large-fruited bladderpod *(Lesquerella macrocarpa)* Nelson's milkvetch (*Astragalus nelsonianus*) Meadow pussytoes (*Antennaria arcuata*)	Criterion 3	Criteria 1, 2, 3	No	Meets the relevance criteria for natural processes or systems. Meets importance criteria for more than locally significant qualities; fragile, sensitive, rare, vulnerable to adverse change; and warrants protection to satisfy national priority concerns and carry out the mandates of FLPMA. Populations of this plant are found outside the planning area. The status of this plant has not changed since completion of the Green River RMP. The management prescriptions in the Green River RMP are sufficient to provide the needed protection for these species, and special management emphasis or ACEC designation is unnecessary.
STEAMBOAT MOUNTAIN (proposed expansion)	Criteria 1, 2, 3	Criteria 1, 2	Yes	Meets the relevance and importance criteria for wildlife, cultural values of national significance, natural systems, unique habitat features found nowhere else in the Field Office Administrative Area, and values needing special management emphasis to be effectively managed. Includes the highest concentration and overlap of unique habitat features, natural systems, and cultural values. These include a portion of the sand dunes stabilized by the basin big sagebrush/lemon scurfpea plant community and the Native American respected places of Indian Gap and portions of the Indian Gap Trail.