



## Appendix A

### Federal and Montana

### Current Ambient Air Quality Standards

<i>Pollutant</i>	<i>Time Period</i>	<i>Federal (NAAQS)</i>	<i>Montana (MAAQS)</i>	<i>Standard Type</i>
Carbon Monoxide	Hourly Average	35 ppm	23 ppm	Primary
	8-Hour Average	9 ppm	9 ppm	Primary
Fluoride in Forage	Monthly Average	--	50 µg/g	--
	Grazing Season	--	35 µg/g	--
Hydrogen Sulfide	Hourly Average	--	0.05 ppm	--
Lead	Rolling 3-Month Average	0.15 µg/m <sup>3</sup>		Primary and Secondary
	90-Day Average	--	1.5 µg/m <sup>3</sup>	--
	Quarterly Average	1.5 µg/m <sup>3</sup>	--	Primary and Secondary
Nitrogen Dioxide	Hourly Average	--	0.30 ppm	--
	Annual Average	0.053 ppm	0.05 ppm	Primary and Secondary
Ozone	Hourly Average	0.12 ppm	0.10 ppm	Primary and Secondary
	8-Hour Average	0.075 ppm	--	Primary and Secondary
Particulate Matter (PM <sub>10</sub> )	24-Hour Average	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Primary and Secondary
	Annual Average	--	50 µg/m <sup>3</sup>	Primary and Secondary
Particulate Matter (PM <sub>2.5</sub> )	24-Hour Average	35 µg/m <sup>3</sup>	--	Primary and Secondary
	Annual Average	15 µg/m <sup>3</sup>	--	Primary and Secondary
Settleable Particulate	30-Day Average	--	10 g/m	--
Sulfur Dioxide	Hourly Average	--	0.50 ppm	--
	3-Hour Average	0.50 ppm	--	Secondary
	24-Hour Average	0.14 ppm	0.10 ppm	Primary
	Annual Average	0.03 ppm	0.02 ppm	Primary
Visibility	Annual Average	--	3 x 10 <sup>-5</sup> /m	--



# Appendix B

## Standards for Rangeland Health and Guidelines for Livestock Grazing Management

### *Standards for Rangeland Health*

Standards are statements of physical and biological condition or degree of function required for healthy sustainable rangelands. Achieving or making significant and measurable progress towards these functions and conditions is required of all uses of public rangelands. Historical data, when available, should be used when assessing progress towards these standards.

#### **Standard #1: Uplands are in proper functioning condition.**

This means that soils are stable and provide for capture, storage and safe release of water appropriate to soil type, climate and landform. The amount and distribution of ground cover (i.e., litter, live and standing dead vegetation, microbiotic crusts, and rock/gravel) for identified ecological site(s) or soil-plant associations are appropriate for soil stability.

Evidence of accelerated erosion in the form of rills and/or gullies, erosional pedestals, flow patterns, physical soil crusts/surface scaling and compaction layers below the soil surface is minimal. Ecological processes including hydrologic cycle, nutrient cycle and energy flow are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential and there is a diversity of species characteristic of and appropriate to the site. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

##### Physical Environment

- erosional flow patterns
- surface litter
- soil movement by water and wind
- soil crusting and surface sealing
- compaction layer
- rills
- gullies
- cover amount
- cover distribution

##### Biotic Environment

- community richness
- community structure
- exotic plants
- plant status
- seed production
- recruitment
- nutrient cycle

#### **Standard #2: Riparian and wetland areas are in proper functioning condition.**

This means that the functioning condition of riparian-wetland areas is a result of the interaction among geology, soil, water and vegetation. Riparian-wetland areas are functioning properly when adequate

vegetation, landform or large woody debris is present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality; filter sediment, capture bedload, and aid floodplain development; improve flood water retention and groundwater recharge; develop root masses that stabilize streambanks against cutting action; develop diverse ponding and channel characteristics to provide the habitat and the water depth, duration, and temperature necessary for native fish production, waterfowl breeding, and other uses appropriate for the area that will support greater species richness.

The riparian-wetland vegetation is a mosaic of species richness and community structure serving to control erosion, shade water, provide thermal protection, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase recharge of groundwater where appropriate to landform. The stream channels and flood plain dissipate energy of high water flows and transport sediment appropriate for the geomorphology (e.g., gradient, size, shape, roughness, confinement, and sinuosity), climate, and landform. Soils support appropriate riparian-wetland vegetation, allowing water movement, filtering sediment, and slowing ground water movement for later release. Stream channels are not entrenching beyond natural climatic variations and water levels maintain appropriate riparian-wetland species.

Riparian areas are defined as land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lake shores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

#### Hydrologic

- floodplain inundated in relatively frequent events (1-3 years)
- amount of altered streambanks
- sinuosity, width/depth ratio, and gradient are in balance with the landscape setting (i.e., landform, geology, and bioclimatic region)
- upland watershed not contributing to riparian degradation

#### Erosion/Deposition

- floodplain and channel characteristics; i.e., rocks, coarse and/or woody debris adequate to dissipate energy
- point bars are being created and older point bars are being vegetated
- lateral stream movement is associated with natural sinuosity
- system is vertically stable
- stream is in balance with water and sediment being supplied by the watershed (i.e., no excessive erosion or deposition)

#### Vegetation

- reproduction and diverse age class of vegetation
- diverse composition of vegetation
- species present indicate maintenance of riparian soil moisture characteristics
- streambank vegetation is comprised of those plants or plant communities that have deep binding root masses capable of withstanding high streamflow events
- utilization of trees and shrubs
- riparian plants exhibit high vigor
- adequate vegetative cover present to protect banks and dissipate energy during high flows
- where appropriate, plant communities in the riparian area are an adequate source of woody debris

**Standard #3: Water quality meets Montana State standards.**

This means that surface and ground water on public lands fully support designated beneficial uses described in the Montana Water Quality Standards. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- dissolved oxygen concentration
- pH
- turbidity
- temperature
- fecal coliform
- sediment
- color
- toxins
- others: ammonia, barium, boron, chlorides, chromium, cyanide, endosulfan, lindane, nitrates, phenols, phosphorus, sodium, sulfates, etc.

**Standard #4: Air quality meets Montana State standards.**

This means that air quality on public lands helps meet the goals set out in the State of Montana Air Quality Implementation Plan. Efforts will be made to limit unnecessary emissions from existing and new point or non-point sources.

The BLM management actions or use authorizations do not contribute to air pollution that violates the quantitative or narrative Montana Air Quality Standards or contributes to deterioration of air quality in selected class area.

As indicated by:

Section 176(c) Clean Air Act which states that activities of all federal agencies must conform to the intent of the appropriate State Air Quality Implementation Plan and not:

- cause or contribute to any violations of ambient air quality standards
- increase the frequency of any existing violations
- impede the State's progress in meeting their air quality goals

**Standard #5: Habitats are provided to maintain healthy, productive and diverse populations of native plant and animal species, including special status species (federally threatened, endangered, candidate or Montana species of special concern as defined in BLM Manual 6840, Special Status Species Management).**

This means that native plant and animal communities will be maintained or improved to ensure the proper functioning of ecological processes and continued productivity and diversity of native plant lifeforms. Where native communities exist, the conversion to exotic communities after disturbance will be minimized. Management for indigenous vegetation and animals is a priority. Ecological processes including hydrologic cycle, and energy flow, and plant succession are maintained and support healthy biotic populations. Plants are vigorous, biomass production is near potential, and there is a diversity of plant and animal species characteristic of and appropriate to the site. The environment contains components necessary to support viable populations of a sensitive/threatened and endangered species in a given area relative to site potential. Viable populations are wildlife or plant populations that contain an adequate number of reproductive individuals distributed on the landscape to ensure the long-term existence of the species. Assessing proper functioning conditions will consider use of historical data.

As indicated by:

- plants and animals are diverse, vigorous and reproducing satisfactorily; noxious weeds are absent or insignificant in the overall plant community
- spatial distribution of species is suitable to ensure reproductive capability and recovery
- a variety of age classes are present
- connectivity of habitat or presence of corridors prevents habitat fragmentation
- species richness (including plants, animals, insects and microbes) are represented
- plant communities in a variety of successional stages are represented across the landscape

## ***Guidelines for Livestock Grazing Management***

Guidelines for management of herbivory (including domestic animals and wildlife) are preferred or advisable approaches to ensure that standards can be met or that significant progress can be made toward meeting the standard(s). Responsible state and federal wildlife agencies must be involved in this management if standards are to be achieved.

Guidelines are provided to maintain or improve resource conditions in upland and riparian habitats. In both riparian and upland habitats, these guidelines focus on establishing and maintaining proper functioning conditions. The application of these guidelines is dependent on individual management objectives. Desired future conditions in plant communities and streambank characteristics will be determined on a case-by-case basis.

**Guideline #1:** Grazing will be managed in a manner that will maintain the proper balance between soils, water, and vegetation over time. This balance varies with location and management objectives, historic use, and natural fluctuations, but acceptable levels of use can be developed that are compatible with resource objectives.

**Guideline #2:** Manage grazing to maintain watershed vegetation, species richness, and floodplain function. Maintain riparian vegetative cover and structure to trap and hold sediments during run-off events to build streambanks, recharge aquifers, and dissipate flood energy. Grazing management should promote deep-rooted herbaceous vegetation to enhance streambank stability. Where non-native species are contributing to proper functioning conditions, they are acceptable. Where potential for palatable woody shrub species (willows, dogwood, etc.) exists, promote their growth and expansion within riparian zones.

**Guideline #3:** Pastures and allotments will be managed based on their sensitivity and suitability for livestock grazing. Where determinations have not been previously documented, suitability for grazing will be determined by: topography, slope, distance from water, vegetation habitat types, and soil types must be considered when determining grazing suitability. Unsuitable areas should be excluded from grazing.

**Guideline #4:** Management strategies for livestock grazing will ensure that long-term resource capabilities can be sustained. End of season stubble heights, streambank moisture content, and utilization of herbaceous and woody vegetation are critical factors which must be evaluated in any grazing strategy. These considerations are essential to achieving long-term vegetation or stream channel objectives and should be identified on a site-specific basis and used as terms and conditions.

**Guideline #5:** Grazing will be managed to promote desired plants and plant communities of various age classes, based on the rate and physiological conditions of plant growth. Management approaches will be identified on a site-specific basis and implemented through terms and conditions. Caution should be used to avoid early spring grazing use when soils and streambanks are wet and susceptible to compaction and physical damage that occurs with animal trampling. Likewise, late summer and fall treatments in woody shrub communities should be monitored closely to avoid excessive utilization.

**Guideline #6:** The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect the ecological functions and processes of those sites.

**Guideline #7:** Locate facilities (e.g., corrals, water developments) away from riparian-wetland areas.

**Guideline #8:** When provided, supplemental salt and minerals should not be placed adjacent to watering locations or in riparian-wetland areas so not to adversely impact streambank stability, riparian vegetation, water quality, or other sensitive areas (i.e., key wildlife wintering areas). Salt and minerals should be placed in upland sites to draw livestock away from watering areas or other sensitive areas and to contribute to more uniform grazing distribution.

**Guideline #9:** Noxious weed control is essential and should include: cooperative agreements, public education, and integrated pest management (mechanical, biological, chemical).

**Guideline #10:** Livestock management should utilize practices such as those referenced by the NRCS published prescribed grazing technical guide to maintain, restore or enhance water quality.

**Guideline #11:** Grazing management should maintain or improve habitat for federally listed threatened, endangered, and sensitive plants and animals.

**Guideline #12:** Grazing management should maintain or promote the physical and biological conditions to sustain native populations and communities.

**Guideline #13:** Grazing management should give priority to native species. Non-native plant species should only be used in those situations where native seed is not readily available in sufficient quantities, where native plant species cannot maintain or achieve standards, or where non-native plant species provide an alternative for the management and protection of native rangelands.

**Guideline #14:** Allotment monitoring determines how ongoing management practices are affecting rangeland. To do so, the evaluations should be based on: 1. measurable management objectives; 2. permanent and/or repeatable monitoring locations; and; 3. short-term and long-term data.





## Appendix C

### Best Management Practices

The following Best Management Practices (BMPs) provide for the protection of wildlife, soils, vegetation, water quality and visual resources. While the BMPs below are listed under specific categories, the applicable BMPs would vary with the location of a project and the resource issues in that area. The best practices would be applied on a case-by-case basis to meet site-specific needs.

#### *Range Improvements*

1. Potential reservoirs and pit sites should be core drilled to determine if gravel lenses are below the structure.
2. All proposed range improvements will be designed to limit erosion, saline seeps, salt accumulations and rapid sedimentation.
3. Topsoil and suitable subsoil will be identified and stockpiled during all soil excavation activities and will be used to rehabilitate the area when the project is completed. Exceptions to this may be granted, based on a site-specific evaluation. Disturbed areas will be monitored for noxious plant infestation and control measures will be implemented as needed.

#### *Forest Products*

1. Harvest Design
  - a. The following should be considered during the development of timber harvest systems:
    - 1) Soil characteristics and erosion hazard identification.
    - 2) Rainfall characteristics.
    - 3) Topography.
    - 4) Plant cover (forest type understory, silvics).
    - 5) Critical components (aspect, water courses, landform, etc.).
    - 6) Silvicultural objectives.
    - 7) Existing watershed condition.
    - 8) Potential effects of multiple resource management activity on beneficial water uses.
    - 9) Compliance with the Montana Water Quality Act, Public Water Supply Act, and state water quality standards. Manage community and non-community public water supply watersheds to comply with state water quality standards. The Public Water Supply Act (75-6-101-MCA) requires approval of plans and specifications for roads and other disturbances from the Montana Water Quality Bureau for activities planned for public water supply watersheds.
  - b. Leave streamside management zones on both sides of perennial streams and intermittent streams with a well-defined channel. This zone provides shading, soil stabilization, and sediment and water filtering effects.

- c. Use the logging system that best fits the topography, soil type, and season, while minimizing soil disturbance and economically accomplishing silvicultural objectives. Avoid tractor skidding on slopes greater than 35%.
- d. Skid trail locations require special considerations for slopes steeper than 15% or greater.
- e. Design and locate skid trails and skidding operations to minimize soil disturbance. The use of designated skid trails is one means of limiting site disturbance and soil compaction.
- f. Locate skid trails to avoid concentrating runoff and provide breaks in grade.
- g. Locate skid trails and landings away from natural drainage systems and divert runoff to stable areas.
- h. Use the economically feasible yarding system which will minimize road densities.
- i. Roads and trails will be built or upgraded with due regard for environmental considerations. Cut-and-fill slopes should be no steeper than 3:1 where feasible. This will promote quick revegetation and soil stabilization and discourage invasion by weeds. The type of terrain (flat to steep) will be a major factor in applying the 3:1 guideline. The intent is to provide a stable seedbed where practical. After access roads are no longer needed, they will be contoured to a natural appearance and seeded. This could apply to any road within the Monument.

## 2. Harvesting Activities

- a. Mechanical thinning/harvesting should be conducted when the ground is dry, frozen, or snow covered to minimize soil compaction.
- b. Avoid falling trees or leaving slash in streams or water bodies.
- c. Limb or top trees where debris cannot fall or be dragged into the stream.
- d. A 124 or 310 permit (Natural Streambed and Land Preservation Act of 1975) is required for ground skidding through any perennial stream.
- e. Minimize operation of wheeled or tracked equipment within the streamside management zones of stream courses designated for protection. Do not operate equipment on stream banks.
- f. End-line logs out of streamside areas when ground skidding systems are employed.
- g. Fully suspend logs when line skidding across a stream and immediately above streambanks.
- h. Remove debris entering any stream concurrently with the yarding operation and before removal of equipment from the project site. Accomplish debris removal so the natural streambed conditions are not disturbed. Leave naturally occurring downfall material which provides fish habitat.
- i. Avoid equipment operation in wetlands, bogs, and wet meadows except on designated roads. Use end-lining and directional falling for harvest operations in these areas.
- j. Repair damage to a stream course caused by logging operations, including damage to banks and channel, to as reasonable a condition as possible without causing additional damage to the stream channel.
- k. Tractor skid when compaction, displacement, and erosion will be minimized.
- l. Install necessary water bars on tractor skid trails prior to expected periods of heavy runoff.

Appropriate spacing between bars is determined by the soil type and slope of the skid trail. Timely implementation is important.

- m. Construct drainage structures on skid trails to prevent water and sediment from being channeled directly into stream courses.
  - n. Construct water bars and/or seed skid trails and landings, where natural revegetation is inadequate to prevent accelerated erosion, before the next growing season. A light ground cover of slash or straw will help retard erosion.
  - o. For south and southwest aspects, light slash should be left on the site as much as possible to minimize water erosion.
  - p. Avoid skidding with the blade lowered.
  - q. Suspend the head end of the log whenever possible.
  - r. Minimize the size and number of landings to that necessary for safe, economical operation.
  - s. Avoid decking logs within the high water mark of any stream.
  - t. Provide suitable delivery, storage, and disposal for all fuels, shop debris, waste oil, etc.
3. Slash Treatment and Site Preparation
- a. Rapid reforestation of harvested areas is encouraged to reestablish protective vegetation.
  - b. Use brush blades on cats when piling slash. Avoid use of dozers with angle blades. Site preparation equipment producing irregular surfaces is preferred. Care should be taken to avoid severe disruption of the surface soil horizon.
  - c. Minimize or eliminate elongated exposure of soils up and down the slope during mechanical scarification.
  - d. Scarify the soil to the extent necessary to meet the reforestation objective of the site. Low slash and small brush should be left to slow surface runoff, return soil nutrients and provide shade for seedlings.
  - e. Carry out brush piling and scarification when soils are dry enough to minimize compaction and displacement.
  - f. Carry out scarification on steep slopes in a manner that minimizes erosion. Broadcast burning and/or herbicide application is a preferred means for site preparation on slopes greater than 40%.
  - g. Maintain streamside management zones between site preparation or slash disposal areas and streams.
  - h. Scarify landings and temporary roads on completion of use.
  - i. Do not apply chemical vegetation control treatment to water bodies. Provide suitable buffer strips between chemical mixing and application areas and all water bodies.
  - j. Apply pesticide and dispose of containers according to label and Environmental Protection Agency registration directions. Make contingency plans to follow in case of accidental spills. Mixing and disposal of chemicals should be supervised by a licensed applicator.

- k. Limit water quality impacts of prescribed fire: construct water bars in firelines; reduce fuel loadings in drainage channels; maintain the streamside management zone; avoid intense fires unless needed to meet silvicultural goals.
- l. Slash burning should be done with a cooler controlled fire.

## ***Fire***

1. Fire Suppression
  - a. Minimize watershed damage from fire suppression by avoiding heavy equipment operation on soils susceptible to severe erosion and steep slopes.
  - b. Stabilize suppression damage where erosion potential has increased. Treatments include installing water bars, seeding, planting, fertilizing, spreading slash or mulch on bare soil, repairing road drainage facilities, and clearing stream channels of debris.
  - c. Conduct burn area surveys where necessary to assess the need for rehabilitation of watershed damage. Rehabilitation measures may include: seeding, fertilizing, fencing, clearing debris from stream channels, constructing trash racks, channel stabilization structures and debris retention structures.
  - d. Consider the impacts of sewage disposal when establishing locations for fire camps, logging camps, or other similar facilities.
2. Prescribed Fire
  - a. Avoid burning on soils with a shallow surface layer and steep slopes to minimize damage to soils.

## ***Natural Gas Operations***

1. Location
  - a. Work with the operator to choose the best site access and facility location to mitigate for visual impacts.
  - b. Where practical, avoid construction in highly scenic areas.
  - c. Ridgetop facilities are highly visible from great distances because they are skylined. Roads, on the other hand, may be less visible if located along ridgetops, but if they are located on the ridge face they can be highly visible because of increased cut, fill and sidecast material.
  - d. Move facilities further from key observation points to reduce their apparent size. This may necessitate moving facilities from the shoulder of roads and trails, and placing them in the background of the view.
  - e. Avoid locating facilities near “prominent” features.
  - f. Use natural or artificial features such as topography, vegetation, or an artificial berm to help screen facilities. Locate facilities in a swale, around the bend, behind a ridge, or create a natural looking, vegetated berm.
  - g. Locate and construct roads and other linear facilities to follow the contour of the landform or mimic lines in the vegetation. Avoid a straight road that will draw the viewer’s eye and attention straight toward the production facilities at the end of the road.

- h. Where practical, use existing roads. When a suitable existing road is not available, construct a suitable road, but eliminate the redundant or obsolete roads.
- i. Do not reuse existing roads just because they are preexisting and you are hesitant to disturb new areas. Choose the best location for the road and its anticipated uses. Consider safety, anticipated traffic load, and maintenance requirements as well as visual and habitat needs.
- j. Avoid locating roads and pipelines on steep slopes. Follow the contours of the land to reduce earthwork/disturbance. If you must locate on a steep slope, a certified engineering and reclamation plan must be submitted and approved by the authorized officer.
- k. Avoid locating well pads on steep slopes. Well pads on steep slopes can create large cut and fill slopes which are more expensive to reclaim and are highly visible from long distances. If you must locate on a steep slope, a certified engineering and reclamation plan must be submitted and approved by the authorized officer.
- l. Construct the minimum road necessary. Consider using two-track roads for exploration wells that could become dry holes or production wells with very low vehicle use during production. The BLM 9113 Roads Manual states, "Bureau roads must be designed to an appropriate standard no higher than necessary to accommodate their intended functions..." Consider average daily traffic load, vehicle size, soils, topography, weather, season of use, safety, etc.

## 2. Operations

- a. Consider drilling multiple wells from a single well pad to reduce the footprint of oil and gas activity on wildlife habitat.
- b. Remote electronic monitoring of wells and related production equipment can reduce the number of maintenance and inspection truck trips made during critical time periods for wildlife and result in less wildlife disturbance.
- c. Bury power lines in or adjacent to the road to eliminate cross-country vegetation clearing and resulting habitat fragmentation.
- d. Noise can deter wildlife from using an area. Use noise reduction mufflers to comply with noise standards. Also, consider using earthen berms, walls, sheds, and/or distance to reduce sound levels in important habitats.
- e. Reduce vehicle traffic in important wildlife areas and during critical wildlife use periods. Consider:
  - 1) Seasonal restriction of public vehicular access in new development areas such as dead-ends, well access roads or designated portions of the field.
  - 2) Operator-enforced speed limits during critical seasons.
  - 3) Use of shuttle vans and buses to transport drilling rig workers and field service personnel.
- f. Cover all production-related pits and tanks to exclude wildlife, regardless of pit or tank size. Migratory birds can drown in small volumes of water and other fluids. Violations of the Migratory Bird Treaty Act can result in substantial penalties.
- g. Minimize the footprint of energy development. To reduce wildlife habitat fragmentation, loss, and degradation, consider lower class roads, smaller pads, and interim reclamation.

### 3. Reclamation

- a. Interim reclamation is short-term reclamation that occurs as the well is beginning initial production of oil and/or gas. It includes partially reshaping and revegetating roads and well pads to reduce the amount of bare ground created during construction and drilling activity.
- b. To minimize habitat loss and fragmentation, re-establish as much habitat as possible by maximizing the area reclaimed during well production operations. In many cases, this “interim” reclamation can cover nearly the entire site.
- c. Limit activities to only the area that is necessary.
- d. Interim reclamation should begin shortly after construction or establishing oil or gas production on the site. Steps include: (1) Fully recontour unneeded areas to the original contour or a contour that blends with the surrounding topography; (2) Respread topsoil over the entire pad; and (3) Revegetate to re-establish habitat.
- e. Seed with the proper species, varieties, and amounts of seed. The use of native species is preferred. Consider adding shrubs and forbs to the seed mixture, where appropriate, to re-establish habitat.
- f. Borrow ditches should be covered with topsoil and seeded. Consider seeding the road surface for low use roads. Forage and habitat is partially restored.
- g. When well production ends, begin final reclamation. Ensure the site is recontoured, stable, and fully revegetated.

## Roads

### 1. Location

- a. Minimize the number of roads constructed in a watershed through comprehensive road planning, recognizing intermingled ownership and foreseeable future uses. Use existing roads where practical.
- b. Fit the road to the topography. Locate roads on natural benches and stable soil types to minimize the area of road disturbance.
- c. Locate roads on well-drained soils and rock formations that tend to dip into the slope. Avoid slide-prone areas characterized by seeps, steep slopes, highly weathered bedrock, clay beds, concave slopes, hummocky topography, and rock layers that dip parallel to the slope.
- d. Avoid high erosion hazard sites, such as steep, narrow canyons, slide areas, slumps, swamps, wet meadows, or natural drainage channels. Where there is potential for material to enter a stream, obtain approval of the Conservation District and/or the Water Quality Bureau under applicable laws (i.e., 124 or 310 permit).
- e. Locate roads a safe distance from streams when roads are running parallel to stream channels. Provide an adequate streamside management zone in order to catch sediment and prevent its entry in to the stream.
- f. Minimize the number of stream crossings.
- g. Cross streams at right angles to the main channel if practical.
- h. Choose a stable stream crossing site and adjust the road grade to reach the site if possible.

- i. Avoid unimproved stream crossings. Where a culvert or bridge is not feasible, locate drive-throughs on a stable, rocky portion of the stream channel.
- j. A 124 or 310 permit (Natural Streambed and Land Preservation Act of 1975) is required before disturbance is allowed within the area between the normal high water marks of perennial streams.
- k. Avoid long, sustained, steep road grades. Where unavoidable, a certified engineering and reclamation plan must be submitted that demonstrates how erosion will be controlled and site productivity will be returned.
- l. Vary road grades to reduce concentrated flow in road drainage ditches and culverts to reduce erosion on cut and fill slopes and road surface.
- m. When locating roads, provide access to suitable log landing areas (flatter, well-drained) in order to reduce soil disturbance.

## 2. Design

- a. Incorporate preventive action into transportation plans. Minimize disturbance. Use available information to help identify erodible soils, unstable areas, and road surface materials.
- b. Plan roads to the minimum standard necessary to accommodate anticipated use and equipment. When using existing roads, avoid reconstruction unless absolutely necessary. The need for higher standard roads can be alleviated through better road use management.
- c. Construct cut and fill slopes at stable angles.
- d. Use plans that balance cuts and fills or use full bench construction (no fill slope) where stable fill construction is not possible. Haul excess material to a safe disposal site and include these waste areas in soil stabilization planning for the road.
- e. Contour and roll road grades for minimal disruption of drainage patterns.

## 3. Drainage

- a. Design water crossing structures at points where it is necessary to cross stream courses. Provide for adequate fish passage, minimum impact on water quality, and at a minimum the 25-year frequency runoff. A 124 or 310 permit is required for perennial stream crossings.
- b. Install culverts to conform to the natural stream bed and slope. Place culverts slightly below normal stream grade to avoid culvert outfall barriers.
- c. Design culvert installations to prevent erosion of fill. Compact the fill material to prevent seepage and failure. Armor the inlet and/or outlet with rock or other suitable material where needed.
- d. Provide adequate drainage for the road surface. Use outsloped roads, insloped roads with ditches and cross drains or drain dips. Dips should be constructed deep enough into the subgrade that traffic will not obliterate them.
- e. Plan ditch gradients steep enough, generally greater than 2%, but less than 8%, to prevent sediment deposition and ditch erosion. Gradient depends on parent material.
- f. Design the spacing of road drainage facilities based on geologic type, soil erosion class, and road grade.



- g. Where possible, install ditch relief culverts at the gradient of the original ground slope, otherwise anchor downspouts to carry water safely across the fill slope.
  - h. Skew relief culverts 20 to 30 degrees toward the inflow from the ditch to provide better inlet efficiency.
  - i. Provide energy dissipaters where necessary at the downstream end of ditch relief culverts to reduce the erosion energy of the emerging water.
  - j. Protect the upstream end of cross drain culverts from plugging with sediment and debris. Prevent downslope movement of sediment by using sediment catch basins, drop inlets, changes in road grade, headwalls, and recessed cut slopes.
  - k. Install culverts to assure protection from crushing due to traffic. Use 1-foot minimum cover for corrugated metal pipes 15 to 36 inches in diameter, and a cover of one-third diameter for larger corrugated metal pipes.
  - l. Use corrugated metal pipes with a minimum diameter of 15 inches to avoid plugging.
  - m. Install road drainage facilities above stream crossings so water may be routed through a streamside management zone before entering a stream.
4. Construction
- a. Place debris, overburden, and other waste materials associated with construction activities in a location to avoid entry into streams.
  - b. Minimize stream channel disturbances and related sediment problems during construction of roads and installation of stream crossing structures. Do not place easily eroded material into live streams. Remove material stockpiled on a floodplain before rising water reaches the stockpile. Locate bypass roads to have minimal disturbance on the stream course. Limit construction activity to specific times to protect beneficial water uses.
  - c. Minimize earth moving activities when soils appear excessively wet. Do not disturb roadside vegetation more than necessary to maintain slope stability and to serve traffic needs.
  - d. Clear all vegetative material before constructing the fill portion of the road prism.
  - e. On potentially erodable fill slopes, windrow slash at the toe of the fill slopes to trap sediment, particularly near stream crossings and on erodable fill slopes. Leave breaks for wildlife passage.
  - f. Stabilize erodable, exposed soils by seeding, compacting, riprapping, benching, mulching, or other suitable means prior to spring or fall runoff.
  - g. Keep slope stabilization, erosion and sediment control work as current as possible with road construction.
  - h. Install drainage structures concurrent with construction of new roads and always prior to spring or fall runoff.
  - i. Complete or stabilize road sections within the same operating season as construction is started, rather than leaving major road sections in a pioneer condition over a winter season.
  - j. Minimize sediment production from borrow pits and gravel sources through proper location, development, and reclamation.

5. Maintenance
  - a. Avoid cutting the toe of stable cut slopes when grading roads or pulling ditches.
  - b. When plowing snow for winter timber harvest, provide breaks in the snow berm to allow road drainage.
  - c. Keep erosion control measures functional through periodic inspection and maintenance.
  - d. Haul all excess material removed by maintenance operations to safe disposal sites. Apply stabilization measures to these sites to prevent erosion. Avoid sidecasting material where it will enter a stream or be available to erode directly into a stream.
  - e. Leave closed roads in a condition that provides adequate drainage without further maintenance.
  - f. Restrict the use of roads during wet periods and the spring breakup period if damage to road drainage features resulting in increased sedimentation is likely to occur.
6. Reclamation
  - a. Includes recontouring the road back to the original contour, seeding, controlling noxious weeds, and may also include other techniques to improve reclamation success, such as ripping, scarifying, replacing topsoil, placing waterbars, pitting, mulching, redistributing woody debris, and barricading.
  - b. Seeds of native, perennial species or other plan materials specified by the Monument Manager must be used. If waterbars were used, they should be removed and seeded following successful revegetation.



## Appendix D

### Cultural Resource Use Categories

#### *Upper Missouri River Breaks National Monument*

In order to allocate the numerous known sites and sites “projected to occur” (those yet to be found or recorded) into the identified use categories as found in BLM Manual 8110, criteria must be established which employ a combination of easily recognizable site type and site attribute information that can, for example, differentiate between small, short duration, limited activity sites and large, complex multiple-activity sites. For prehistoric resources the criteria are weighted to emphasize the “information potential,” since the determination of significance for such sites is generally related to their scientific value. For historic resources, the criteria are more reflective of site “condition and integrity” characteristics, which play a greater role in the evaluation of historic properties.

It is also important to recognize that it is possible for sites to be placed into more than one use category. As an example, a prehistoric site with little or no scientific value could be placed in a Discharge from Management category, but also be useful in the Experimental Use category. Similarly, an historic site could be placed in the Public Use category, but require stabilization and preservation efforts and therefore warrant placement into the Conserve for Future Use category as well.

#### Prehistoric Resources

Since over 90% of prehistoric sites in the planning area are defined as lithic scatters, it is important to be able to identify potential discriminating elements that can be used to segregate such a large category of prehistoric resources into different use categories. A qualitative assessment of certain aspects of material culture (relative diversity and quantity of artifactual materials) and complexity (spatial patterning of artifacts, presence/absence of features, presence/absence of buried deposits, etc.), coupled with a quantitative measure of site size (in acres) can be utilized to meet the purposes identified. These values will serve as indirect indicators of relative site function, relative duration of occupation, research value, and importance.

The important aspects of material culture include:

Artifact diversity – variety of cultural materials present such as raw material types, variety of materials present bone, stone, ethno botanical qualitatively measured from low to high.

Artifact quantity – relative quantity of material culture present (less than 50 items, hundreds, thousands, etc.) a qualitative measure intended to capture “magnitudes of difference.”

Site complexity – as indicated by any spatial patterning in distribution of cultural material, the presence or absence of associated features, the presence of buried deposits and stratigraphy. Site complexity is qualitatively measured from low to high.

Site size – a quantitative measure, looking for modal patterns in overall site size that may reflect a number of things, site function, duration of occupation, etc. These variables will serve as a model to distinguish between the small, more redundant and transient, or temporary, limited use lithic scatters, and larger, longer occupied, camps/habitation sites, and/or extractive use locations.

Based on the model presented above, it is expected that use categories to be reflected as follows:

#### Scientific Use

Prehistoric sites that exhibit high diversity and large quantity (>50 artifacts) of material culture, high complexity (spatial patterning of artifacts/activities, presence of features, stratified or buried deposits), and relatively larger size properties would be placed into the Scientific Use category.

## **Conservation Use**

Sites that are representative of rare, or exceptional examples (functionally or temporally) would be considered for Conservation Use.

## **Traditional Use**

In consultation with Native American groups, certain types of prehistoric sites retain particular importance and significance (Deaver 1986). These site types most commonly include: burial locations, pictograph/ petroglyph sites, and vision quest locations. Medicine wheels, dance grounds and intaglios (e.g., Napi Figures) also are in this category, but none are known to occur on public lands in the planning area. In addition, certain tipi ring sites may also fit this use category but need to be evaluated on a case-by-case basis. Collectively these sites amount to less than 1% of recorded cultural resources in the planning area.

## **Public Use**

Prehistoric sites could be considered for Public Use (interpretation) in those few instances where interpretive potential is high and site integrity could be insured through protective measures. Such uses should not be attempted without full consultation with interested Native American groups. Consequently, such prehistoric sites still require evaluation on a case-by-case basis. Current opportunities include the Nez Perce Trail and the Cow Island Crossing.

## **Experimental Use or Discharge from Use**

Sites with low diversity and limited quantity (<50) of artifacts; low or limited complexity; and small size (redundant small surface lithic scatter, information potential is exhausted with initial site recordation). Sites will be individually evaluated prior to placement into Experimental Use or Discharge from Use categories.

## **Historic Resources**

Unlike prehistoric resources, historic properties are more commonly determined to be significant for reasons other than their "scientific value." Similarly, condition and integrity also tend to play more obvious roles in the evaluation of historic properties, which contain architectural or structural remains. Historic resources in the planning area also vary greatly in size, function, and complexity; ranging from small trash dumps, homesteads and other agricultural developments, early exploration and river transportation, wood hawker activity, military establishments, and abandoned wagon roads.

## **Scientific Use**

Historic sites with archaeological and historical values and generally poor, structural integrity (collapsed or deteriorated), would be placed in this category.

## **Conservation Use**

Historical sites that are rare or exceptional examples that retain integrity would be considered for Conservation Use. In the planning area this would include well-preserved remnants of homesteads (Hagadone). It should be noted that the defined use categories are not necessarily mutually exclusive, and that many sites can be placed in both the Conservation Use category (need to stabilize and preserve the architectural features) and the Public Use Category and possibly Scientific Use for example.

## Traditional Use

Historic sites in this category would potentially include any sacred areas, traditional cultural properties, or plant gathering areas that have been historically utilized by Native American groups that have historically occupied the area. These sites would be determined in consultation with tribal representatives that have demonstrated historical use in the planning area. To date, Native American traditional use areas have been yet to be identified.

## Public Use

Historic sites that would be considered for Public Use include those where the interpretive potential is high and site integrity could be insured through protective measures. In addition, consideration is given for those standing structures that could be preserved and maintained for adaptive re-use for administrative or recreational uses. Historical themes that would lend themselves to interpretation include:

### Early Exploration

Lewis and Clark Corps of Discovery  
Fur Trade Era

### Historic Transportation Routes

Steamboat Era/Woodhawkers  
Cow Island Crossing  
Judith Landing  
Stafford Ferry  
Ervin Ridge Road

### Historic Homesteading/Ranching

Hagadone  
Gist Bottom  
Middleton  
Nelson

There are also numerous standing cabin structures and homesteads on public lands across the planning area that may potentially be sufficiently preserved, to be considered for a program of adaptive reuse and utilized as BLM administrative structures and/or in a recreational cabin rental program.

## Experimental Use or Discharge from Use

Like prehistoric sites, individual sites would be evaluated on a case-by-case basis before assignment to either the Experimental Use or Discharge from Use categories. In general, properties assigned to these categories would have been determined to contain little or no scientific or historical value. Sites in these categories would generally include isolated trash dumps and artifact scatters, isolated features such as prospect pits or claim markers, and collapsed structural remains that no longer retain integrity of design or workmanship. Only those sites that have been formally determined to be Not Eligible for the National Register of Historic Places would be placed into either of these categories.

Cultural properties are evaluated with reference to National Register criteria for the purposes of assessing their historical values and their public significance. Such evaluations are carefully considered when cultural properties are allocated to use categories. Although preservation and nomination priorities must be weighted on a case-by-case basis, Table D.1 serves as a general guide illustrating the relationship between National Register evaluation and allocation to use categories.

**Table D.1**  
**Relationship Among Cultural Resource Use Categories, National Register Eligibility,**  
**and Preservation/National Register Nomination**

<i>Cultural Resource Use Category</i>	<i>National Register Eligibility</i>	<i>Preservation/National Register Nomination</i>	<i>Site Types Generally Included</i>
Scientific Use	Usually Eligible	Long-term preservation not critical; medium National Register nomination priority.	<p><b>Prehistoric:</b> Sites with high artifact count and diversity, high complexity, and larger size;</p> <p><b>Historic:</b> Sites with archaeological and historic values, and generally poor structural integrity.</p>
Conservation for Future Use	Always Eligible	Long-term preservation is required; highest nomination priority.	<p><b>Prehistoric:</b> Sites inherently complex, or rare, or fragile and exhibit exceptional scientific values (e.g. deeply stratified deposits, or large quarries);</p> <p><b>Historic:</b> Sites inherently complex, or rare, or fragile, generally significant standing structures (stabilization and preservation required).</p>
Traditional Use	May Be Eligible	Long-term preservation is desirable; nomination priority is determined in consultation with the appropriate cultural group(s).	<p>Sites and locations determined in consultation with Tribal Groups.</p> <p><b>Prehistoric</b> may include: Burial locations, vision quest locations, pictographs and petroglyphs, certain tipi ring sites;</p> <p><b>Historic/Modern:</b> Plant gathering locations, areas considered sacred for religious purposes, etc.</p>
Public Use	Usually Eligible	Long-term preservation is desirable; high nomination priority.	<p><b>Prehistoric:</b> High interpretive potential and can insure protection;</p> <p><b>Historic:</b> High interpretive potential and can insure stabilization and protection, and/or adaptive reuse.</p>
Experimental Use	May Be Eligible	Long-term preservation is not anticipated; low nomination priority.	<p><b>Prehistoric:</b> Lithic scatters of limited artifact density and complexity;</p> <p><b>Historic:</b> Trash scatters, collapsed structures with no integrity or context</p>
Discharge from Management	Not Eligible	Long-term preservation and management are not considerations; nomination is inappropriate.	<p><b>Prehistoric:</b> Isolated finds, surface lithic scatters &lt;50 items;</p> <p><b>Historic:</b> Isolated prospect pits; trash scatters &lt;50 items, sites &lt;50 years old</p>

## Appendix E

### Watershed Planning Process

The watershed planning process was developed as a practical means to implement decisions made in approved Resource Management Plans, assess and determine the health of the public land, review and update grazing permits/leases and incorporate Guidelines for Livestock Grazing Management to meet Standards for Rangeland Health.

Watershed plan areas are identified by grouping public land grazing allotments which have similar resource values, are in a common geographic area, and have common or similar resource concerns. Once the watersheds are identified, each is prioritized on the basis of resource management needs, amount of public land, relative amount of public land and resource values in relationship to private, state and other landowners, current and anticipated uses, and practical management opportunities for the public land.

Once prioritized, issues are identified for the priority watershed, applicable RMP decisions are assembled, and existing resource information and authorizations for the public land are reviewed. Issue identification includes participation by the public and affected interests. Through media notices, letters to interested or affected parties, discussions with current users of the public land, public meetings and coordination consultation meetings with groups, other agencies and governmental entities, issues and concerns for the watershed are refined and a desired future condition is outlined.

Under Standards for Rangeland Health (August 1997) (43 CFR 4180), it is necessary to assess and make determinations whether Standards are being met. These assessments and determinations are prepared for each allotment in a watershed. If a finding of not meeting Standards is made, then a determination of cause is identified and a recommended course of action or alternatives are developed to meet Standards. Concurrent with this process is a review of the grazing authorizations for allotments to verify that they include appropriate guidelines for livestock grazing management to meet Standards for Rangeland Health.

Alternatives for management to meet the desired future conditions are developed in consultation with affected and interested publics. Alternatives include a no action alternative and one or more additional alternatives.

The resource information and the alternatives for proposed management/projects and their impacts are addressed in a Watershed Plan and Environmental Assessment (EA) document. In accordance with the National Environmental Policy Act (NEPA), the EA involves public participation and is subject to comment and appeal processes. The EA is sent to affected interests for public review, and public meetings and a comment period are held to provide an opportunity for public participation.

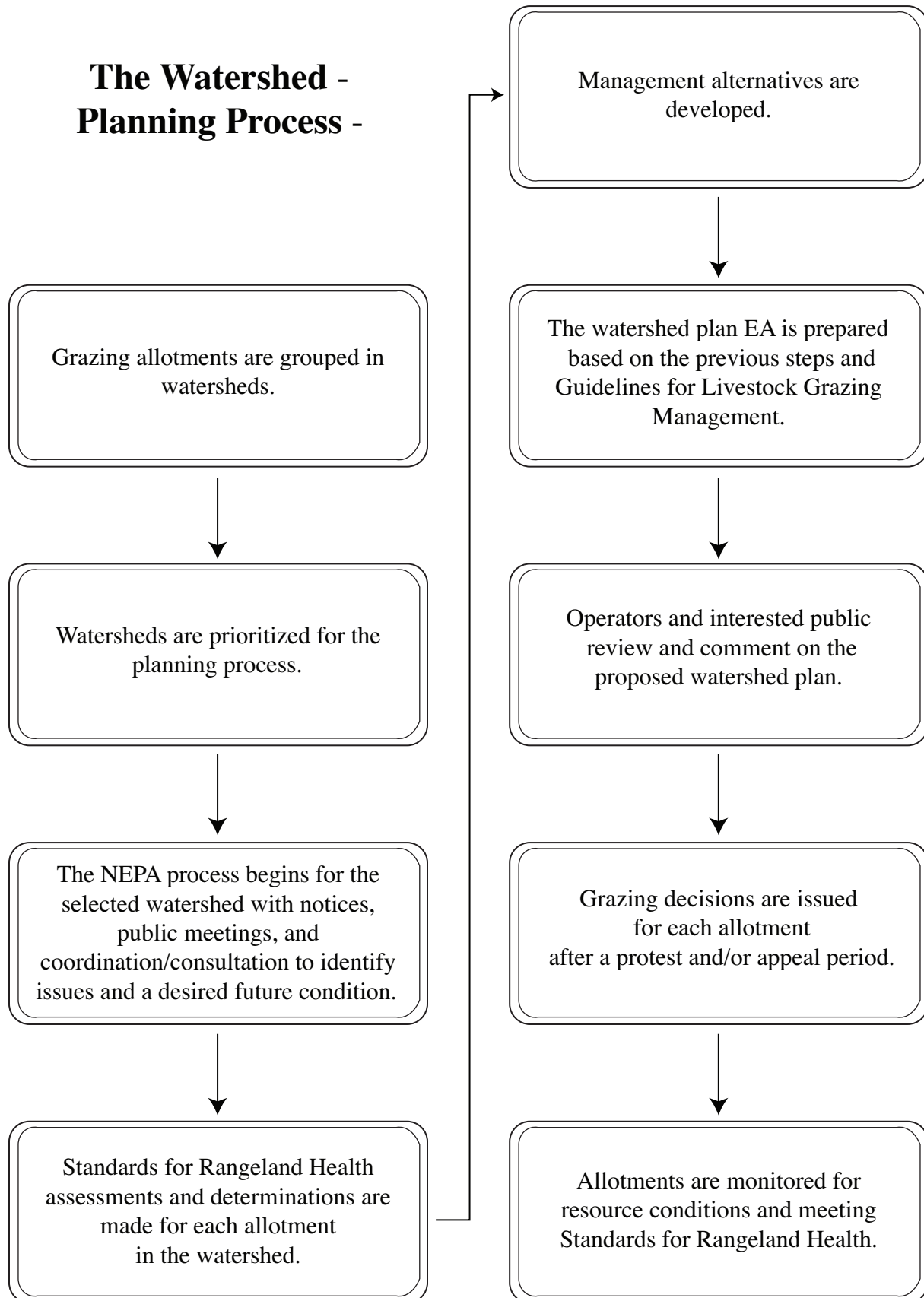
A grazing decision is prepared for each operator in accordance with the grazing regulations (43 CFR 4160) and sent to the operator and any affected interests for the allotment or permit/lease. The decision includes details of the grazing privilege(s) and terms and conditions that will apply for the specific allotment and permit/lease. This decision is subject to protest and/or appeal of the decision within specific timeframes. If there is no protest/appeal, or following resolution of a protest or appeal, an updated term (usually 10 years) grazing permit/lease is issued in accordance with the decision.

Monitoring of Standards for Rangeland Health, other resource conditions and compliance is a continuous process to ensure management goals and objectives are being met. Monitoring results are documented in periodic evaluation reports. If management goals are not being met, needed changes are identified and implemented in accordance with an appropriate management strategy and applicable laws and regulations.

An illustration of the watershed planning process is shown on the following page.



## The Watershed - Planning Process -



# Appendix F Grazing Allotments

Allotment Number	Allotment Name	Allotment Totals				Percent Allotment in Monument	Grazing Season	Watershed Planning Area
		Acres	AUMs	Acres BLM Land	AUMs BLM Land			
	<b>North Side Allotments</b>							
944	Lutje Place	3259	368	2265	90	100	4/15 - 5/31, 10/1 - 11/15	Bears Paw to Breaks
5607	North Cabin Creek	1262	277	1111	243	100	5/16 - 9/15	Beauchamp
5609	Cabin Creek	13786	1660	6734	762	100	5/1 - 10/31, 12/1 - 3/31	Beauchamp
5610	Antelope Creek	51492	5496	45010	4701	100	5/1 - 12/31	Beauchamp
6164	3 mile ridge	10961	1509	10321	1440	10	4/1 - 5/31	Bears Paw to Breaks
6168	Al's Creek	4577	592	3385	369	75	5/1 - 9/22	Bears Paw to Breaks
6169	Chimney Butte	7773	778	7112	720	30	7/15 - 10/10	Bears Paw to Breaks
6171	Little Suction	1651	163	1405	131	10	6/1 - 6/30	Bears Paw to Breaks
6172	Timber ridge	17604	2485	11599	1662	50	3/1 - 10/22	Bears Paw to Breaks
6181	Bullwhacker	45890	5072	40535	4400	90	4/1 - 2/28	Bears Paw to Breaks
6182	Hay Coulee	12956	1267	12956	1267	100	variable - reserve common	Bears Paw to Breaks
6192	N. Fk Lion Coulee	9362	1641	3930	592	60	5/15 - 10/01	Bears Paw to Breaks
6193	Lion Coulee	3560	438	3351	410	60	5/15 - 11/15	Bears Paw to Breaks
6194	Spencer Ridge	10198	1022	7250	588	100	5/1 - 10/31	Bears Paw to Breaks
6198	Chase Hill	2665	303	1218	98	60	3/1 - 2/28	Bears Paw to Breaks
6201	Halley	7710	749	3806	441	100	5/15 - 10/19	Bears Paw to Breaks
6203	Golf Bench	6730	1187	3319	230	10	6/1 - 8/31	Bears Paw to Breaks
6207	Ragland Ridge	1228	52	1085	25	70	6/15 - 10/15	Bears Paw to Breaks
6208	Lost Ridge	10452	1080	6253	487	95	5/15 - 11/15	Bears Paw to Breaks
6209	Barnard Ridge	3837	322	3197	279	100	6/1 - 8/30	Bears Paw to Breaks
6211	Black Butte	8305	852	8305	730	100	5/1 - 11/14	Bears Paw to Breaks
6212	Ervin Ridgetop	11251	769	9973	650	100	6/15 - 10/10	Bears Paw to Breaks
6214	Little Bullwhacker	24257	1556	22278	1368	100	5/15 - 10/15	Bears Paw to Breaks
6215	Dark Butte	6976	656	4404	329	90	6/1 - 10/05	Bears Paw to Breaks
6216	Pablo Rapids	3419	168	2644	105	90	6/1 - 9/22	Bears Paw to Breaks
6218	Sneath Common	6700	485	5800	344	100	6/10 - 10/21	Bears Paw to Breaks
6221	Deadman Rapids	1646	110	1646	110	100	7/1 - 9/30	Bears Paw to Breaks
6222	Gallatin Rapids	6443	318	5404	277	100	5/1 - 11/01	Bears Paw to Breaks
6224	Upper Dauphine Rapids	**	**	1663	75	100	5/1 - 11/30	Bears Paw to Breaks
6225	Dauphine Rapids	**	**	214	25	100	6/1 - 8/5	Bears Paw to Breaks
6269	North Timber Ridge	4450	774	1125	145	10	5/15 - 5/31	Bears Paw to Breaks
6282	Greasewood Bottom	673	124	517	100	100	7/1 - 9/30 varies	Bears Paw to Breaks
6283	Williamson Bottom	479	32	479	32	100	7/1 - 9/30 varies	Bears Paw to Breaks

Allotment Number	Allotment Name	Allotment Totals				Percent Allotment in Monument	Grazing Season	Watershed Planning Area
		Acres	AUMs	Acres BLM Land	AUMs BLM Land			
6284	Sturgeon Island	558	70	558	70	100	Bears Paw to Breaks	
6285	West Gist	312	56	312	56	100	Bears Paw to Breaks	
6434	Cabin			1825	429	20	Vimy	
	<b>North Side Allotments (Custodial Authorizations*)</b>							
820	Sanford Pasture	701	72	701	72	100	3/1 - 2/28 (extended nonuse)	
855	T26N R12E sc1	40	0	40	0	100	not allocated	
864	T26N R12E Sec 4	29	0	29	0	100	not allocated	
866	T27N R12E Sec 26	40	0	40	0	100	not allocated	
867	T26N R12E Sec 5	40	0	40	0	100	not allocated	
868	T26N R12E Sec 3	15	0	15	0	100	not allocated	
905	Wood Property	2169	0	2169	0	100	not allocated for grazing	
5611	Upper Cyprian Ck	3779	646	3779	646	65	custodial 3/1 - 2/28	
5629	Coal Mine Coulee	423	53	423	53	100	custodial 3/1 - 2/28	
6210	Maxwell	100	10	100	10	100	custodial 4/15 - 10/31	
6220	Eight Mile Bench	818	89	818	89	80	custodial 5/1 - 11/30	
6223	Husar Home Place	83	13	83	13	50	custodial 8/15 - 10/31	
6254	Lost Bird	40	6	40	6	100	custodial 3/1 - 2/28	
6273	Bear Point	279	24	279	24	100	custodial 5/1 - 11/30	
6420	Clinard Coulee	628	76	628	76	60	custodial 3/1 - 2/28	
6422	N Hanging 5	444	52	444	52	90	custodial 3/1 - 2/28	
6424	Balzek	336	90	336	90	50	custodial 5/15 - 11/14	
6425	Piedras	1002	54	1002	54	90	custodial 8/1 - 11/1	
6426	White Rocks	186	42	186	42	100	custodial 6/1 - 10/31	
6428	Osterman	200	42	200	42	50	custodial 5/1 - 12/31	
6429	Puma	156	53	156	53	50	custodial 6/1 - 12/15	
6481	Jurenka	130	7	130	7	100	custodial 7/1 - 9/30	
16350	South Vimy	920	95	920	95	30	custodial 5/1 - 9/1	
	<b>South Side Allotments</b>							
2000	Fink Exchange of Use	**	**	233	41	100	6/1 - 7/15	
2013	W. Indian Butte	16542	1889	11490	1132	95	5/1 - 11/15	
							Armells	
							Armells	

Allotment Number	Allotment Name	Allotment Totals				Percent Allotment in Monument	Grazing Season	Watershed Planning Area
		Acres	AUMs	Acres BLM Land	AUMs BLM Land			
2018	Mayberry	7018	820	2933	393	50	5/1 - 11/1	Armells
2021	Lower Armells	3073	397	2631	327	100	6/1 - 12/1	Armells
2024	Sawmill Coulee	5436	856	3881	567	85	6/1 - 10/31	Armells
2038	Barnes Ridge	2403	283	1763	214	100	6/1 - 7/1, 10/1 - 10/31	Two Calf
2039	Two Calf	**	**	9223	1269	100	6/1 - 11/30	Two Calf
2040	Lower Fargo Coulee	**	**	1046	169	80	5/1 - 6/30, 11/15 - 2/28	Armells
2517	Woodcock Coulee	3545	514	918	112	25	5/1 - 10/30	AC/UR/WR***
9649	ABN	**	**	237	66	80	4/1 - 1/1	AC/UR/WR
9687	Dammel	**	**	920	66	100	5/1 - 6/16, 3/1 - 2/28	Upper Missouri
9703	Melton Coulee	**	**	1503	157	100	3/1 - 2/28	AC/UR/WR
9707	Arrow Ck West	**	**	575	111	100	10/2 - 1/28	AC/UR/WR
9729	Kipps Rapids	**	**	820	104	100	6/15 - 10/8	Upper Missouri
9797	Evans Bend	**	**	1148	131	40	3/1 - 4/1, 8/1 - 2/28	AC/UR/WR
9799	Hole in the Wall	**	**	625	94	100	5/1 - 11/15	Upper Missouri
9808	Starve Out Flat	**	**	958	291	30	5/15 - 11/15	Upper Missouri
9826	Flat Ck	**	**	735	80	50	8/1 - 10/15	Upper Missouri
9838	White Rocks	6855	**	2365	329	60	5/1 - 12/1	Upper Missouri
9847	Slide Coulee	5167	860	3435	494	100	5/1 - 12/31	AC/UR/WR
9864	Grace Bench	**	**	246	31	100	10/1 - 11/30	AC/UR/WR
9866	Wilson Coulee	**	**	1207	210	60	4/1 - 12/30	AC/UR/WR
10041	Reservation Bench	**	**	2760	169	100	5/1 - 11/30	AC/UR/WR
15123	PN Sag	12151	2137	3637	563	100	6/1 - 10/15	Upper Missouri
15124	Dog Ck 20	8624	1145	7390	894	100	10/15 - 2/28	Upper Missouri
15125	Judith River	12068	1896	3099	424	95	3/1 - 2/28	Upper Missouri
15132	Whiskey Ridge	2941	453	2694	399	20	5/15 - 9/15	AC/UR/WR
19807	Churchill Butte	**	**	229	29	60	6/1 - 9/30, 4/1 - 12/30	AC/UR/WR
19837	Sheep Shed Coulee	6255	895	5901	697	45	7/10 - 11/29	Upper Missouri
20010	Blind Canyon AMP	6220	2574	2300	288	80	5/1 - 10/31	AC/UR/WR
20026	Demars	5474	456	5019	401	100	6/1 - 10/31, 3/1 - 2/28	Two Calf
20031	Woodhawk	**	**	25606	3120	70	5/1 - 10/31, 3/1 - 2/28	Woodhawk
20037	Armells	2854	620	1752	378	15	5/15 - 10/15	Armells
20039	Mutton Coulee	1600	327	880	179	100	6/6 - 10/1	AC/UR/WR
20040	Arrow Ck East	4212	**	1693	287	100	10/2 - 1/28	AC/UR/WR
20045	Mattushech	**	**	7762	892	85	5/6 - 10/31, 3/1 - 2/28	Upper Missouri
20046	River	5424	629	4192	347	100	5/10 - 9/15	Upper Missouri
20066	Iron City Island	**	255	1088	193	100	6/1 - 9/30	Upper Missouri



# Appendix G

## Visitor Use Standards and Indicators

### Opportunities for Boaters

*Indicators, Desired Future Conditions, Standards and Actions to manage visitor use opportunities within Limits of Acceptable Change without invoking a permit system or allocation of use.*

***Indicator 1. Sight and sound levels that create opportunities for privacy, solitude, and a primitive boating and camping experience.***

#### Desired Future Condition

Maintain use opportunities without constraint of a permit system (other than a self-registration permit) and allocation of visitor use. Visitors will have the opportunity to periodically experience moments of solitude on some portion of their trip. Visitors will have the opportunity to camp in primitive sites that reflect natural qualities of the river environment.

#### Standard

Two occurrences of 170 people launching per day (based on a running 3-day average) from a total of all sites located between the Chouteau County Fairgrounds Campground and Canoe Launch, and Coal Banks Landing.

Three occurrences of 100 people launching per day (based on a running 3-day average) from a total of all sites located between Judith Landing and the James Kipp Recreation Area.

#### Monitoring

Analysis of boater registration data.

#### Management Actions

The following is a list of actions managers could select from as needed to maintain the sight and sound standard. Other actions may be developed as needed to adapt to changes in visitor use patterns.

- Create a web-based mandatory registration system that would provide information to potential boaters regarding high use launch days. This would allow boaters the option of selecting dates outside of busy timeframes.
- Encourage boaters to stagger launches at the put-in (don't launch until the group in front of you is out of sight and sound) and when leaving camp on subsequent days.
- Encourage groups of boaters to stay in a compact flotilla. Discourage boaters from spreading out with wide distances between boats in the same party.
- From June 15 to August 1, require groups larger than 20 people camping between Coal Banks Landing and Judith Landing to camp only in Level 2 sites, and begin to identify Level 4 camping opportunities on the floater maps.
- From June 15 to August 1 limit all groups to a one-night stay at any Level 2, 3 or 4 site between Coal Banks Landing and the James Kipp Recreation Area.

- Pursue purchase or lease of sites to develop additional Level 2 or 3 camping opportunities.
- Develop additional Level 3 primitive boat camps on existing public land.
- Construct additional Level 2 sites in areas where visual integrity could be maintained.
- Require groups of 20 people or larger to acquire an SRP with stipulations on date they can launch and where they can camp.
- Develop and implement a group size limit of 20 people. If this group size limit does not effectively reduce impacts then smaller group size limits may be considered.

#### **River Recreation Facilities**

**Level 1 – Developed public access sites** are accessible by road and have a full range of developments that could include parking lots, boat ramps, vault toilets, campsites for tents and RVs, and picnic facilities. These sites are shown on Map 2 and include Wood Bottom, Decision Point Interpretive Trail, Coal Banks Landing, Judith Landing, Lower Woodhawk and the James Kipp Recreation Area.

**Level 2 – Developed boat camps** are accessible only by boat. The sites could include vault toilets, metal fire rings, and occasionally, open-air shelters. These sites are shown on Map 2 and include Little Sandy, Eagle Creek, Hole-in-the-Wall and Slaughter River. The BLM has administrative road access to these sites.

**Level 3 – Primitive boat camps** are accessible only by boat and could contain a metal fire ring but no other developments. These sites are shown on Map 2 and include Evans Bend, Senieurs Reach, Black Bluff Rapids, Dark Butte, Pablo Rapids, The Wall, McGarry Bar, Gist Bottom, Cow Island, Upper Woodhawk, Middle Woodhawk and Hideaway.

**Level 4 – Dispersed camping opportunities.** In addition to the developed sites described above, camping is permissible on any of the 90,000 acres of BLM land adjacent to the river. The absence of development allows opportunities for those seeking a completely primitive experience. In many areas private land is intermingled with BLM land and landowner permission is required to access or cross private land.

### ***Indicator 2. The condition class of Level 2, 3 and 4 sites (excellent, good, fair, poor).***

#### **Desired Future Condition**

The Upper Missouri River will have a diverse set of camping and visitor opportunities and there will be fair access to campsites among all types of users. Campsites along the river will reflect natural qualities and have minimal congestion. A range of camping opportunities will be present throughout the river corridor.

#### **Standard**

All Level 2, 3, and 4 sites will be in fair or better condition.

**Monitoring**

Measure the disturbance to individual campsites. Campsite monitoring will take place in August and September. Level 3 and 4 sites in designated wild and scenic sections will be monitored each year. Level 3 and 4 sites in designated recreation sections will be monitored every 2 years. Level 2 sites in any designated section will be monitored every 2 years.

**Management Actions**

As needed to maintain class standard:

- Aggressively promote Leave No Trace standards and use of existing sites.
- Promote use of Level 2 sites (concentrate use).
- Modify current Level 2 sites to provide for screening and privacy and provide surface hardening in areas of high use (fire rings, restrooms, social trails).
- Rest and rotate individual sites.
- Close and rehabilitate individual sites.
- Purchase short-term leases from private landowners to create additional Level 3 and 4 opportunities.
- Develop additional Level 3 and 4 sites on existing public land.

***Indicator 3. River corridor riparian health assessment score.*****Desired Future Condition**

Sites for potential riparian habitat will be in proper functioning condition and following natural succession. Native vegetation will be present throughout the river corridor without competition from exotic, invasive species. Soil erosion and compaction from human use is minimized and areas around campsites support natural vegetation. Return of natural flows and less impact from man-made controls.

**Standard**

A score of 80%, or health in an upward trend.

**Monitoring**

Riparian health assessment.

**Management Actions**

Actions would occur when visitor use is determined to be the major impacting factor.

- Rest/rotate Level 3 and 4 sites.
- Close Level 3 and 4 sites as necessary.



***Indicator 4. The condition class or rating of homestead historical interpretive sites (rating to be developed).***

**Desired Future Condition**

Condition of homesteads will be adequate to maintain eligibility to the National Register of Historic Places.

**Standard**

A quantitative rating or score that preserves the historic and interpretive value of the time period in which the homestead was established.

**Monitoring**

Establish a baseline rating or score with parameters indicative of condition of building interior, exterior, contents and surrounding grounds. Monitoring will be completed at the end of each season of use.

**Management Actions**

As needed to maintain historic and interpretive value. Actions would occur when visitor use is determined to be the major impacting factor:

- Develop a sign-in log book.
- Develop and post a list of visitor use restrictions.
- Close doors to interior building access.
- Develop exclosures to keep visitors away from buildings.
- Close sites to visitor use.

***Indicator 5. Increase of weed infestations adjacent to or within recreation sites and trails.***

**Desired Future Condition**

Major trails and other high use areas will be free of weed infestations.

**Standard**

No increase of weed infestations beyond baseline.

**Monitoring**

Annual assessment and inventory.

**Management Actions**

As needed to maintain weed infestation standards:

- Aggressive visitor education program.
- Chemical and biological treatment.
- Closure of campsites and trails in highly infested areas.

## Appendix H

### Oil and Gas Lease Stipulations and Conditions of Approval

This Appendix provides the stipulations and conditions of approval that apply to the oil and gas leases in the Monument.

#### *Oil and Gas Lease Stipulations*

##### **West HiLine Oil and Gas Leases (12 Leases)**

Twelve oil and gas leases were issued under the West HiLine Resource Management Plan (RMP). These oil and gas leases include stipulations for a variety of resources should they be present on the lease during the permitting process (see Attachment H-1). The stipulations include: seasonal or distance restrictions to protect sage-grouse nesting areas, sage-grouse winter habitat, and big game winter range; controlled surface use to protect soils and visual resources; no surface occupancy to protect sage-grouse leks, designated sensitive species and streams and riparian/wetland areas. A notice is used to inform lessees and operators of the requirements for cultural resource historic preservation compliance.

##### **Non-West HiLine Oil and Gas Leases (31 Leases)**

Two oil and gas leases were issued with stipulations for a variety of resources, which are the same as those attached to the West HiLine leases (see Attachment H-1).

Three oil and gas leases were issued with reasonable requirements/conditions for soil erosion, air and water pollution, and unnecessary damage to the surface vegetation. The stipulations also included no occupancy of the surface within specific distances from improved roads, highways, trails, and water sources (lakes, ponds, reservoirs, and springs) (see Attachments H-2 and H-3).

Twenty-six oil and gas leases were issued without stipulations.

#### **Oil and Gas Conditions of Approval**

In addition to the oil and gas lease stipulations, the following conditions of approval would be applied to applications for permits to drill (APDs) on lease acreage in the Monument. (See Tables H.1 and H.2 at the end of this section.)

##### **No Surface-Disturbing or Disruptive Activities**

**Resource:** Wildlife – Greater Sage-Grouse Leks

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited within 1/4 mile of sage-grouse leks.

**Objective:** To protect sage-grouse lek sites necessary for the long-term maintenance of grouse populations in the area.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified (decreased or increased) if the authorized officer determines that portions of the area can be occupied without adversely affecting sage-grouse lek sites or if the authorized officer determines a greater distance is needed to protect the lek based on new research and studies.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting sage-grouse lek sites, or if all lek sites within 1/4 mile of the area have not been used for 5 consecutive years.

## Timing

**Resource:** Wildlife – Greater Sage-Grouse Nesting Zone

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from March 1 to June 15 in sage-grouse nesting habitat within 2 miles of a lek. Travel on identified designated roads may include these timing restrictions or limited site visits.

**Objective:** To protect sage-grouse nesting habitat from disturbance during spring and early summer in order to maximize annual production of young, and to protect nesting activities adjacent to nesting sites for the long-term maintenance of sage-grouse populations in the area.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain sage-grouse nesting habitat within 2 miles of a lek. The dates for the timing restriction may be modified if new information indicates that the March 1 to June 15 dates are not valid for the area.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains sage-grouse nesting habitat within 2 miles of a lek.

## Timing

**Resource:** Wildlife – Greater Sage-Grouse Winter Habitat

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from December 1 to March 31 within winter habitat for sage-grouse. This condition does not apply to the operation and maintenance of production facilities. Travel on identified designated roads may include these timing restrictions or limited site visits.

**Objective:** To protect sage-grouse winter habitat from disturbance during the winter use season, and to facilitate long-term maintenance of wildlife populations.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter habitat for sage-grouse. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains winter habitat for sage-grouse.

## Controlled Surface Use

**Resource:** Wildlife – Black-tailed Prairie Dogs

**Condition of Approval:** Surface-disturbing and disruptive activities may be controlled or excluded within 1/4 mile of prairie dog towns, if an activity would adversely impact prairie dogs and/or associated species.

**Objective:** To protect prairie dog colonies and habitat for associated species.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting black-tailed prairie dogs.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting black-tailed prairie dogs.

## Controlled Surface Use

**Resource:** Wildlife – Designated Sensitive Species

**Condition of Approval:** Surface-disturbing and disruptive activities may be controlled or excluded within 1/4 mile of the activity or the activity delayed 90 days within identified habitat or active nests.

**Objective:** To maintain habitat for designated sensitive species.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season for birds) if the authorized officer determines that the proposed activity will not disturb the production potential of designated sensitive species.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting designated sensitive species.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting designated sensitive species.

## Timing

**Resource:** Wildlife – Ferruginous Hawk

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from March 1 to August 1 within 1/2 mile of active ferruginous hawk nest sites.

**Objective:** To maintain the production potential of ferruginous hawk nest sites.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that the impacts from the proposed action are acceptable or can be adequately mitigated. Seasonal exceptions may be allowed from August 1 through March 1 (the nonbreeding season) if the authorized officer determines that the proposed activity will not disturb the production potential of ferruginous hawk nest sites.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting the production potential of ferruginous hawk nest sites.

### **No Surface-Disturbing or Disruptive Activities**

**Resource:** Wildlife – Bald Eagle Nest Sites and Nesting Habitat

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited within 1/2 mile of known bald eagle nest sites that have been active within the past 7 years, if disturbance could cause nest abandonment or failure.

**Objective:** To protect bald eagle nesting sites and/or nesting habitat.

**Exception:** An exception may be granted by the authorized officer if the operator submits a plan which demonstrates that the proposed action will not affect the bald eagle or its habitat. If the authorized officer determines that the action may or will have an adverse effect, the operator may submit a plan demonstrating that the impacts can be adequately mitigated. This plan must be approved by the authorized officer.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area can be occupied without adversely affecting bald eagle nest sites or nesting habitat.

### **Timing**

**Resource:** Wildlife – Big Game Winter Range

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from December 1 to March 31 within winter range for mule deer, elk and antelope. Travel on identified designated roads may include these timing restrictions or limited site visits.

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

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain winter range for wildlife. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains winter range for wildlife.

### **Timing**

**Resource:** Wildlife – Bighorn Sheep Distribution

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from December 1 to March 31 within bighorn sheep distribution areas. Travel on identified designated roads may include these timing restrictions or limited site visits.

**Objective:** To protect bighorn sheep during the winter use season, and to facilitate long-term maintenance of wildlife populations.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep. The dates for the timing restriction may be modified if new wildlife use information indicates that the December 1 to March 31 dates are not valid for the area.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep distribution.

## Timing

**Resource:** Wildlife – Bighorn Sheep Lambing Areas

**Condition of Approval:** Surface-disturbing and disruptive activities are prohibited from April 1 to June 15 within bighorn sheep lambing areas. Travel on identified designated roads may include these timing restrictions or limited site visits.

**Objective:** To protect bighorn sheep during the lambing season, and to facilitate long-term maintenance of wildlife populations.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified if the authorized officer determines that portions of the area no longer contain bighorn sheep lambing areas. The dates for the timing restriction may be modified if new wildlife use information indicates that the April 1 to June 15 dates are not valid for the area.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains bighorn sheep lambing areas.

## No Surface-Disturbing Activities

**Resource:** Streams, Riparian/Wetland Areas, and 100-Year Floodplains

**Condition of Approval:** Surface-disturbing activities are prohibited within 100-year floodplains or within 500 feet of the channels of ephemeral, intermittent, and perennial streams, or within 500 feet of the outer margins of riparian and wetland areas.

**Objective:** To protect the unique biological and hydrological features associated with streams, riparian/wetland areas, and 100-year floodplains. Given the landform and topography in the lease locations within the Monument, the 100-year floodplain is easily encompassed by the 500 foot distance from the channels of ephemeral, intermittent, and perennial streams or the outer margins of riparian and wetland areas.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan which demonstrates that impacts from the proposed action are acceptable or can be adequately mitigated. Mitigation may include a bunker or dual-walled drum to prevent/contain any potential spill. An exception may also be allowed when the surface of the site is 20 feet higher than the channel (out of the floodplain).

**Modification:** The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include riparian/wetland areas.

**Waiver:** This condition may be waived by the authorized officer if it is determined that the affected area does not include streams or riparian/wetland areas.

## Controlled Surface Use

**Resource:** Soils/Steep Slopes

**Condition of Approval:** Prior to surface-disturbing activities on slopes 30% and greater or on slopes 20% and greater with severely erosive and/or slumping soils, a certified engineering and reclamation plan must be approved by the authorized officer. This plan must demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullyng, piping, slope failure, and mass wasting.
- Nearby watercourses will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Construction or reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

**Objective:** To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems.

**Exception:** None.

**Modification:** The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

**Waiver:** This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 30% and greater or severely erosive and/or slumping soils on 20% and greater slopes.

## No Surface-Disturbing Activities

**Resource:** Soils/Steep Slopes

**Condition of Approval:** Surface-disturbing activities are prohibited on slopes 40% and greater.

**Objective:** To maintain soil productivity, provide necessary protection to prevent excessive soil erosion on steep slopes, and to avoid areas subject to slope failure, mass wasting, piping, and/or having excessive reclamation problems/failure.

**Exception:** The authorizing officer may grant an exception to this condition for short distances (less than 300 feet) for pipelines if the operator submits a certified engineering and reclamation plan that clearly demonstrates impacts from the proposed actions are acceptable or can be adequately mitigated. This plan must include and demonstrate how the following will be accomplished:

- Site productivity will be restored.
- Surface runoff will be adequately controlled.
- The site and adjacent areas will be protected from accelerated erosion, such as rilling, gullying, piping, and slope failure and mass wasting.
- Nearby water sources will be protected from sedimentation. Water quality and quantity will be in conformance with state and federal water quality laws.
- Site-specific analysis of soil physical, chemical and mechanical (engineering) properties and behavior will be conducted.
- Surface-disturbing activities will not be conducted during extended wet periods.
- Reclamation will not be allowed when soils are frozen.

The operator must also provide an evaluation of past practices on similar terrain and be able to demonstrate success under similar conditions.

**Modification:** The area affected by this condition may be modified by the authorized officer if it is determined that portions of the area do not include slopes 40% and greater.

**Waiver:** This condition may be waived by the authorized officer if it is determined that the affected area does not include slopes 40% and greater.

### No Surface-Disturbing Activities

**Resource:** VRM Class I

**Condition of Approval:** Surface-disturbing activities are prohibited in VRM Class I areas.

**Objective:** To reduce the visual contrast on BLM land in the existing landscape.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated through special design including location, painting and camouflage to blend with the natural surroundings.

**Modification:** None.

**Waiver:** None.

### Controlled Surface Use

**Resource:** VRM Classes II, III and IV



**Condition of Approval:** All surface-disturbing activities, semi-permanent and permanent facilities in VRM Classes II, III and IV will utilize 1) proper site selection; 2) reduction of soil and vegetative disturbance; 3) choice of color; and 4) over time, return the disturbed area to a seamless, natural landscape.

**Objective:** To control the visual impacts of activities and facilities within acceptable levels.

**Exception:** None.

**Modification:** None.

**Waiver:** None.

## **No Surface Disturbance**

**Resource:** Recreation

**Condition of Approval:** Surface-disturbing activities are prohibited within the line of sight/sound or 300 feet (whichever is closer) of developed recreation areas (Level 1, 2, and 3 sites) and undeveloped recreation areas receiving concentrated public use. Work-over types of operations would be limited to weekdays, except for emergency situations when operations would be allowed.

**Objective:** To protect developed recreation areas and undeveloped recreation areas receiving concentrated public use.

**Exception:** An exception to this condition may be granted by the authorized officer if the operator submits a plan demonstrating that impacts from the proposed action are acceptable or can be adequately mitigated.

**Modification:** The boundaries of the affected area may be modified by the authorized officer if the recreation area boundaries are changed.

**Waiver:** This condition may be waived if the authorized officer determines that the affected area no longer contains developed recreation areas or undeveloped recreation areas receiving concentrated public use.

## **Controlled Surface Use**

**Resource:** Historic Properties and/or Cultural Resources

**Condition of Approval:** The affected area may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O. 13007, or other statutes and executive orders. The BLM will not approve any ground-disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

**Objective:** To protect historic properties and/or other cultural resources.

**Exception:** None.

**Modification:** None.

**Waiver:** None.

**Table H.1  
Oil and Gas Leases in the Monument and Affected Resources (Wildlife and Water)**  
(acres)

MTM Lease No.	Lease Acreage in the Monument	Greater Sage-Grouse			Black-tailed Prairie Dogs	Sensitive Species 1/4 Mile	Mule Deer Winter Range	Elk Winter Range	Antelope Winter Range	Bighorn Sheep Dist.	Bighorn Sheep Lambing Area	Streams 500'
		1/4 Mile Lek	2 Miles Nesting Area	Winter Habitat								
<b>West HiLine Leases</b>												
084559	1,880		105	26			1,880	1,880	494			464
084560	134		114	78			134	134	134			29
087212	122		24	128			122	122	122			44
087658	485						485			485	485	82
089082	1,131		503	723			1,131	1,131	1,131			223
089452	800				72		800			575	408	239
089469	640		545				640	640	539			237
089473	1,240						1,240	392		606	5	400
089474	80						80	80	8			
089475	1,280						1,280	1,280	473			371
089476	1,120						1,120	1,120	226			
089482	1,416						1,416		677	1,414	161	214
Subtotal	10,328		1,291	955	72		10,328	6,779	3,804	3,080	1,059	2,303
<b>Non-West HiLine Leases</b>												
1565	2,560	31	2,530	30			2,560	2,560	1,756			536
1568	2,320		956	567			2,320	2,320	1,539			569
1578	575		448				575	575	575			271
1885	40			14			40	40				
1886	1,920			10			1,920	1,920	56			628
1888	480			125			480	480				121
1903	1,360						1,360	1,360	500			125
1903-B	320		2				320	320	130			117
1914	200						200	200				
2060	640						640	33		471	321	66

**Table H.1  
Oil and Gas Leases in the Monument and Affected Resources (Wildlife and Water)**  
(acres)

MTM Lease No.	Lease Acreage in the Monument	Greater Sage-Grouse			Black-tailed Prairie Dogs	Sensitive Species 1/4 Mile	Mule Deer Winter Range	Elk Winter Range	Antelope Winter Range	Bighorn Sheep Dist.	Bighorn Sheep Lambing Area	Streams 500'
		1/4 Mile Lek	2 Miles Nesting Area	Winter Habitat								
2061	640						640			528	210	113
13816	2,533						2,533	2,520	1,861	1,545		32
13818	2,532				1		2,532				1,036	401
13821-A	1,099				122		1,099			1,099	1,099	
13827	1,156						1,156	206		1,099	531	400
16098	1,240						1,240	1,240		1,154		379
16102	1,506		52	33			1,506	1,506	284			423
16103	13		7	13			13	13				
16327	80						80					
16458	688		88	27			688	688	126			80
16461	2,547						2,547	2,547	125			634
16617	490						490			441	110	129
16618	320						320					156
16939	2,530						2,530	2,530	37	318		590
17376	40						40					2
18274	1,367						1,367			1,367	1,037	120
18282	851						851	215		851	741	210
18283	1,240						1,240	1,240	2	1,223	100	374
19446	110						110					
53751	680						680	680	35	672	225	21
89460	400						400	130		396	94	121
Subtotal	32,477	31	4,083	819		532	32,477	23,323	7,039	11,164	5,504	6,618
<b>Total</b>	<b>42,805</b>	<b>31</b>	<b>5,374</b>	<b>1,774</b>	<b>72</b>	<b>535</b>	<b>42,805</b>	<b>30,102</b>	<b>10,843</b>	<b>14,244</b>	<b>6,563</b>	<b>8,921</b>

**Table H.2  
Oil and Gas Leases in the Monument and Affected Resources (Soils/Slope and VRM)  
(acres)**

MTM Lease No.	Lease Acreage in the Monument	Soils/Slope				VRM Class			
		20% and >	K- .32 and >	30% and >	40% and >	I	II	III	IV
<b>West HiLine Leases</b>									
084559	1,880	170	170	20	1	1,784	39	57	
084560	134					38		96	
087212	122						94	28	
087658	485	323	238	164	61	16	469		
089082	1,131	19	19				19	529	
089452	800	454	449	315	223			638	
089469	640	197	197	35	1	640			
089473	1,240	788	384	468	210	1,180		60	
089474	80	6	6	1		80			
089475	1,280	323	270	109	26	1280			
089476	1,120	124	124	25	4	624	220	276	
089482	1,416	995	516	546	227	92	1324		
<b>Subtotal</b>	<b>10,328</b>	<b>3,399</b>	<b>2,373</b>	<b>1,683</b>	<b>753</b>	<b>108</b>	<b>7,438</b>	<b>1,520</b>	<b>1,262</b>
<b>Non-West HiLine Leases</b>									
1565	2,560	275	275	69	12	2,264	296		
1568	2,320	126	123	13		1,319	576	425	
1578	575	220	220	82	19	147	428		
1885	40	14	14	7		40			
1886	1,920	439	439	92	14	1,920			
1888	480	69	69	6		480			
1903	1,360	166	166	14		1360			
1903-B	320	117	117	32	11	320			
1914	200	1	1			200			
2060	640	298	298	155	82	39	439	162	
2061	640	401	401	232	120	150	437	53	
13816	2,533	746	734	271	63	1,965	68	500	
13818	2,532	1,191	1,191	655	344	860	926	109	
13821-A	1,099	767	767	473	235	71	1028		
13827	1,156	757	757	475	251	13	1143		
16098	1,240	342	342	131	35	392	710	1	
16102	1,506	419	417	147	41		967	539	
16103	13						13		
16327	80	46	46	22	7		80		
16458	688	135	135	32	3		688		
16461	2,547	1,073	1,073	354	66		2,119	393	
16617	490	262	131	154	89		490		
16618	320	220	220	137	70		320		
16939	2,530	916	916	277	28		2,487	43	
17376	40	22	22	9	3		40		
18274	1,367	859	408	585	406	309	1058		
18282	851	537	248	354	241	463	388		
18283	1,240	655	655	324	147	374	866		
19446	110	26	16	10	4			110	
53751	680	323	323	137	45	157	523		
89460	400	194	163	103	63		400		
<b>Subtotal</b>	<b>32,477</b>	<b>11,616</b>	<b>10,687</b>	<b>5,352</b>	<b>2,399</b>	<b>2,828</b>	<b>25,137</b>	<b>2,520</b>	<b>1,992</b>
<b>Total</b>	<b>42,805</b>	<b>15,015</b>	<b>13,060</b>	<b>7,035</b>	<b>3,152</b>	<b>2,936</b>	<b>32,575</b>	<b>4,040</b>	<b>3,254</b>

## Attachment H-1

### Oil and Gas Lease Stipulations (Form 3109-1 and Standard Stipulations)

**Esthetics** – To maintain esthetic values, all surface-disturbing activities, semi-permanent and permanent facilities may require special design including location, painting and camouflage to blend with the natural surroundings and meet the intent of the visual quality objectives of the surface management agency.

**Erosion Control** – Surface-disturbing activities may be prohibited during muddy and/or wet soil periods. This limitation does not apply to operation and maintenance of producing wells using authorized roads.

**Controlled or Limited Surface Use Stipulation** – This stipulation may be modified by special stipulations which are hereto attached or when specifically approved in writing by the Bureau of Land Management with concurrence of the surface management agency. Distances and/or time periods may be made less restrictive depending on the actual onground conditions. The prospective lessee should contact the surface management agency for more specific locations and information regarding the restrictive nature of this stipulation.

The lessee/operator is given notice that the lands within this lease may include special areas and that such areas 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, excluded. Use or occupancy will be restricted only when the Bureau of Land Management and/or the surface management agency demonstrates the restriction necessary for the protection of such special areas and existing or planned uses. Appropriate modifications to imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

After the surface management agency has been advised of specific proposed surface use or occupancy on the leased lands, and on request of the lessee/operator, the Agency will furnish further data on any special areas which may include:

100 feet from the edge of the rights-of-way from highways, designated county roads and appropriate federally-owned or controlled roads and recreation trails.

500 feet, or when necessary, within the 25-year flood plain from reservoirs, lakes, and ponds and intermittent, ephemeral or small perennial streams; 1,000 feet, or when necessary, within the 100-year flood plain from larger perennial streams, rivers, and domestic water supplies.

500 feet from grouse strutting grounds. Special care to avoid nesting areas associated with strutting grounds will be necessary during the period from March 1 to June 30. One-fourth mile from identified essential habitat of state and federal sensitive species. Wildlife winter ranges during the period from December 1 to May 15, and in elk calving areas, during the period from May 1 to June 30.

300 feet from occupied buildings, developed recreational areas, undeveloped recreational areas receiving concentrated public use and sites eligible for or designated as National Register sites.

Seasonal road closures, roads for special uses, specified roads during heavy traffic periods and on areas having restrictive off-road vehicle designations.

On slopes over 30%, or 20% on extremely erodable or slumping soils.

**Notice for Cultural and Paleontological Resources** – The federal surface management agency is responsible for assuring that the leased lands are examined to determine if cultural resources are present and to specify mitigation measures. Prior to undertaking any surface-disturbing activities on the lands covered by this lease, the lessee or operator, unless notified to the contrary by the surface management agency, shall:

1. Contact the appropriate surface management agency to determine if a site-specific cultural resource inventory is required. If an inventory is required, then;
2. Engage the services of a cultural resource specialist acceptable to the surface management agency to conduct a cultural resource inventory of the area of proposed surface disturbance. The operator may elect to inventory an area larger than the area of proposed disturbance to cover possible site relocation which may result from environmental or other considerations. An acceptable inventory report is to be submitted to the surface management agency for review and approval no later than that time when an otherwise complete application for approval of drilling or subsequent surface-disturbing operation is submitted.
3. Implement mitigation measures required by the surface management agency. Mitigation may include the relocation of proposed lease-related activities or other protective measures such as testing salvage and recordation. Where impacts to cultural resources cannot be mitigated to the satisfaction of the surface management agency, surface occupancy on that area must be prohibited.

The lessee or operator shall immediately bring to the attention of the surface management agency any cultural or paleontological resources discovered as a result of approved operations under this lease, and not disturb such discoveries until directed to proceed by the surface management agency.

**Notice for Endangered or Threatened Species** – The surface management agency is responsible for assuring that the leased land is examined prior to undertaking any surface-disturbing activities to determine effects upon any plant or animal species, listed or proposed for listing as endangered or threatened, or their habitats. The findings of this examination may result in some restrictions to the operator's plans or even disallow use and occupancy that would be in violation of the Endangered Species Act of 1983 by detrimentally affecting endangered or threatened species or their habitats.

The lessee/operator may, unless notified by the authorized officer of the surface management agency that the examination is not necessary, conduct the examination on the leased lands at his discretion and cost. This examination must be done by or under the supervision of a qualified resources specialist approved by the surface management agency. An acceptable report must be provided to the surface management agency identifying the anticipated effects of a proposed action on endangered or threatened species or their habitats.

## Attachment H-2

### Oil and Gas Lease Stipulations (Forms 3100-11 and 3100-28)

The lessee hereby agrees the following stipulations are part of the lease terms:

- A. At least two weeks prior to entry on the land for purposes of field operations, including seismic work, the lessee must advise the District Manager, Bureau of Land Management and after consultation prepare a "Surface Management Plan." The final plan shall be prepared in duplicate, including maps, for approval by the District Manager. Such approval will be conditioned on reasonable requirements needed to prevent soil erosion, air and water pollution, unnecessary damages to the surface vegetation and other resources of the United States and to provide for the restoration of the land surface and vegetation. The plan shall contain all such provisions as the Bureau of Land Management may deem necessary to maintain proper management of the lands and resources within the operating area.

The plan will contain the following items:

1. The location, construction specifications, maintenance program, and estimated use by the lessee, his employees and agents, of all access and work roads.
  2. The methods to be used in the operations, including disposal of waste material.
  3. The size and location of all structures and facilities to be constructed.
  4. The location and size of areas upon which vegetation will be destroyed and/or soil laid bare and the steps which will be taken to prevent and control soil erosion thereon, including but not limited to the proposed program for rehabilitation and revegetation of these disturbed lands both during and upon cessation of operations.
  5. The steps which will be taken to prevent water and air pollution.
  6. The character, amount, and time of use of explosives or fire, including safety precautions which will be taken during their use.
  7. Provisions for protecting permitted livestock and wildlife.
- B. Prior to seismic field operations, if the lessee does not have appropriate bonding coverage, it will be necessary for him to furnish an Oil and Gas Exploration Bond (43 CFR sec. 3104.9).

If later operations require departure from or additions to the approved plan, these revisions or amendments, together with justification statement for proposed revisions, will be submitted to the District Manager for approval.

Any and all operations conducted in advance of approval of an original, revised or amended operating plan, or which are not in accord with an approved plan, constitute a violation of the terms of this lease and the Bureau of Land management reserves the right to close down the operation until such corrective action, as is deemed necessary, is taken by the lessee.

- C. No occupancy of the surface of the areas described in items 1 through 4 below is authorized by this lease. The lessee is, however, authorized to employ directional drilling to develop the mineral resources under these areas provided that such drilling or other works will not disturb the surface area or otherwise interfere with their use by the Bureau of Land Management. It is

understood and agreed that the use of these areas for public purposes is superior to any other use. Areas to be excluded from direct drilling occupancy are:

1. Within 660 feet on either side of the right-of-way boundary of any and all improved roads and/or highways within the lease areas.
2. Within 100 feet on either side of the centerline of any and all trails within the lease area.
3. Within 300 feet of the normal high water line of any and all lakes, ponds, and reservoirs located within the lease area.
4. Within 300 feet of any and all springs or water wells within the lease area.

The distances in subparagraphs 1, 2, 3, and 4, immediately above, may be reduced when specifically agreed to in the "Surface Management Plan."

No access or work trail, earth cut or fill, structure development, facility or any other improvement of a permanent nature will be permitted if it can be viewed from the high water surface of the Missouri River.



## Attachment H-3

### Oil and Gas Lease Stipulations (Form 3100-24)

1. Notwithstanding any provision of this lease to the contrary, any drilling, construction or other operation on the leased lands that will disturb the surface thereof or otherwise affect the environment (hereinafter called "surface disturbing operations"), conducted by lessee, shall be subject, as set forth in this stipulation, to the prior approval of such operation by the Area Oil and Gas Supervisor, in consultation with the appropriate surface management agency and to such reasonable conditions not inconsistent with the purposes for which this lease is issued, as the Supervisor may require to protect the surface of the leased lands and the environment.
2. Prior to entry upon the land or the disturbance of the surface thereof for drilling or other purposes, the lessee shall submit for approval two copies of a map and explanation of the nature of the anticipated activity and surface disturbance.

An environmental analysis will be made by the Geological Survey, in consultation with the appropriate surface management agency, for the purpose of insuring proper protection of the surface, the natural resources, the environment, existing improvements and for assuring timely reclamation of disturbed lands.

3. Upon completion of said environmental analysis, the Area Oil and Gas Supervisor shall notify lessee of the conditions, if any, to which the proposed surface disturbing operations will be subject. Said conditions may relate to any of the following:
  - (a) The location of drilling or other exploratory or developmental operations or the manner in which they are conducted;
  - (b) The type of vehicles that may be used and the areas in which they may be used; and
  - (c) The manner or location in which the improvements, such as roads, buildings, pipelines or other improvements are to be constructed.

## Appendix I

### Wildlife Mitigation Noise Levels

The following wildlife mitigation measures will be considered for production facilities and heavy equipment.

1. For all areas in the Monument, no more than 49 decibels (dB) at 300 feet from all production equipment (BLM 2003c).
2. Restrict noise levels from production facilities to 49 dB (10 dB above background noise at the lek). (Management Plan and Conservation Strategies for Sage Grouse in Montana – Final 2005)
3. Restrict use of heavy equipment that exceeds 49 dB within 2 miles of a lek from 4 a.m. – 8 a.m. and 7 p.m. – 10 p.m. during March 1 – June 15 (Management Plan and Conservation Strategies for Sage Grouse in Montana – Final 2005).
4. Noise restriction during drilling/construction would only be limited as per guidelines for sage grouse in the Management Plan and Conservation Strategies for Sage Grouse in Montana – Final 2005.

For comparison, Table I.1 provides the noise level and human response for various sources.

<b>Table I.1</b>		
<b>Noise Levels and Human Response</b>		
<i>Common Sounds</i>	<i>Noise Levels (dB)</i>	<i>Effect</i>
Jet engine (near)	140	
Shotgun firing Jet takeoff (100-200 ft.)	130	Threshold of pain
Thunderclap (near) Discotheque	120	Threshold of sensation
Power saw Pneumatic drill Rock music band	110	Regular exposure of more than 1 min. risks permanent hearing loss
Garbage truck	100	No more than 15 min. unprotected exposure recommended
Subway Motorcycle Lawnmower	90	Very annoying
Electric razor Many industrial workplaces	85	Level at which hearing damage begins (8 hours)
Average city traffic noise Garbage disposal	80	Annoying. Interferes with conversation
Vacuum cleaner Hair dryer Inside a car	70	Intrusive. Interferes with telephone conversation
Normal conversation	60	
Quiet office Air conditioner	50	Comfortable
Whisper	30	Very quiet
Normal breathing	10	Just audible
	0	Threshold of normal hearing (1000-4000 Hertz)

Source: The Canadian Hearing Society, <http://www.chs.ca/info/noise/levels.html>.



The Bureau of Land Management is responsible for the stewardship of our public lands. It is committed to manage, protect, and improve these lands in a manner to serve the needs of the American people for all times. Management is based on the principles of multiple use and sustained yield of our nation's resources within a framework of environmental responsibility and scientific technology. These resources include recreation; rangelands; timber; minerals; watershed; fish and wildlife; wilderness; air; and scenic, scientific, and cultural values.