

APPENDIX 15—BEST MANAGEMENT PRACTICES FOR REDUCING SURFACE DISTURBANCE AND DISRUPTIVE ACTIVITIES

Best management practices (BMP) are innovative, dynamic, and economically feasible mitigation measures applied on a site-specific basis to reduce, prevent, or avoid adverse environmental or social impacts. BMPs are applied to management actions to aid in achieving desired outcomes for safe, environmentally sound resource development by preventing, minimizing, or mitigating adverse impacts, and reducing conflicts. The following list of BMPs, although extensive, is not all inclusive. As technology and management opportunity change, new BMPs may become available that would be considered for addition to the list.

REDUCING IMPACTS TO BIG GAME CRUCIAL WINTER RANGE

The following BMPs would be considered to reduce impacts to big game crucial winter range:

- Directional drilling
- Drilling of multiple wells from a single pad
- Remote well monitoring
- Piping of produced liquids to centralized tank batteries offsite to reduce traffic to individual wells
- Transportation planning (to reduce road density and traffic volumes)
- Cluster development
- Compensation mitigation
- Seasonal restriction of public vehicular access
- Monitoring of wildlife populations during drilling operations and design and employment of additional best management practices whenever monitoring identifies undesirable impacts.

REDUCING IMPACTS TO SAGE-GROUSE HABITAT

The following BMPs would be considered to reduce impacts to sage-grouse habitat:

- Directional drilling
- Drilling of multiple wells from a single pad
- Seasonal restriction of public vehicular access
- Noise-reduction techniques and designs
- Using low-profile well facilities and tanks
- Burying of power lines to avoid use of poles and other tall structures
- Transportation planning to align roads out of sight and sound of leks, and to schedule traffic to avoid sage-grouse activity periods
- Designing of roads to minimum safe standard for intended use

- Partial reclamation of high-standard roads needed for project construction to lower standards necessary for maintenance operations
- Monitoring of wildlife populations during drilling operations and design, and employing additional best management practices whenever monitoring identifies undesirable impacts
- Prohibiting surface disturbance or occupancy within ¼ mile of the perimeter of occupied sage-grouse leks
- Avoidance of human activity between 6:00 p.m. and 9:00 a.m. from March 1 through May 20 within ¼ mile of the perimeter of occupied sage-grouse leks. These times and dates reflect recommendations from Wyoming Game and Fish Department (WGFD) based on site-specific data for the Resource Management Plan Planning Area (RMPPA)
- Avoidance of surface disturbance or other disruptive activity from March 1 through July 15 up to 2 miles from an “active” lek in suitable greater sage-grouse nesting habitat. These dates reflect recommendations from WGFD based on site-specific data for the RMPPA.

REDUCING IMPACTS TO WILDLIFE HABITAT

The following BMPs would be considered to reduce impacts to wildlife habitat:

- Seasonal restriction of public vehicular access
- Noise reduction techniques and designs
- Installation of raptor anti-perch devices
- Monitoring of wildlife populations during drilling operations and design, and employment of additional best management practices whenever monitoring identifies undesirable impacts
- Implementation of the Wyoming Bird Conservation Plan from Wyoming Partners In Flight.

The Bureau of Land Management (BLM) will consider management actions in the WGFD Minimum Programmatic Standards Recommended by the WGFD to sustain important wildlife habitats affected by oil and gas development.

REDUCING IMPACTS TO VISUAL RESOURCE MANAGEMENT CLASS II AND III AREAS

The following BMPs would be considered to reduce impacts to visual resource management Class II and III areas:

- Burying of distribution power lines and flow lines in or adjacent to access roads
- Repeating elements of form, line, color, and texture to blend facilities and access roads with the surrounding landscape
- Painting all above-ground structures, production equipment, tanks, transformers, and insulators not subject to safety requirements to blend with the natural color of the landscape, using paint that is a non-reflective “standard environmental color” approved by the BLM visual resource management (VRM) specialist

- Performing final reclamation recontouring of all disturbed areas, including access roads, to the original contour or a contour that blends with the surrounding topography
- Avoiding facility placement on steep slopes, ridge tops, and hilltops
- Screening facilities from view
- Following contours of the land to reduce unnecessary disturbance
- Recontouring and revegetating disturbed areas to blend with the surrounding landscape
- Reclaiming unnecessary access roads as soon as possible to the original contour
- Using gravel of a similar color to adjacent dominant soil and vegetation colors for road surfacing
- Avoiding locating pads in areas visible from primary roads
- Using subsurface or low-profile facilities to prevent protrusion above horizon line when viewed from any primary road
- Avoiding the routing of well access roads directly from state, county, or BLM roads
- Co-locating wells when possible
- Locating facilities far enough from the cut and fill slopes to facilitate recontouring for interim reclamation
- Locating wells away from prominent features, such as rock outcrops
- Completing an annual transportation plan for entire area before beginning construction, and making a layout that will minimize disturbance and visual impact
- Designing and constructing all new roads to a safe and appropriate standard “no higher than necessary” to accommodate their intended use
- Locating roads far enough off the back of ridgelines so they aren’t visible from state, county, or BLM roads
- Using remote monitoring to reduce traffic and road requirements
- Removing unused equipment, trash, and junk immediately.

REDUCING IMPACTS FROM FLUID MINERAL CONSTRUCTION, OPERATION, AND RECLAMATION

The following BMPs would be considered to reduce impacts from fluid mineral construction, operation, and reclamation:

- Directional drilling
- Drilling of multiple wells from a single pad
- Transportation planning (to reduce road density and traffic volumes)
- Remote well monitoring
- Piping of produced liquids to centralized tank batteries offsite to reduce traffic to individual wells
- Submersible pumps

- Belowground wellheads
- Bussing of workers (to reduce traffic volume)
- Flareless well completions
- Pitless drilling
- Burying of distribution power lines and flow lines in or adjacent to access roads
- Design and construction of all new roads to a safe and appropriate standard “no higher than necessary” to accommodate their intended use
- Reuse of old roads or pads
- Interim reclamation of well locations and access roads soon after the well is put into production
- Avoidance of facility placement on steep slopes, ridge tops, and hilltops
- Storage of chemicals within secondary containment in case of a spill
- Onsite bioremediation of oil field wastes and spills
- Removal of trash, junk, waste, and other materials not in use.