APPENDIX 3—MITIGATION GUIDELINES AND OPERATING STANDARDS APPLIED TO SURFACE DISTURBING AND DISRUPTIVE ACTIVITIES

The purposes of the Mitigation Guidelines, Outcomes, and Operating Standards are (1) to reserve, for the Bureau of Land Management (BLM), the right to modify the operations of all surface and other human presence disturbance activities as part of the statutory requirements for environmental protection, and (2) to inform a potential lessee, permittee, or operator of the requirements that must be met when using BLM-administered public lands. These guidelines have been written in a format that will allow for (1) their direct use as stipulations and (2) the addition of specific or specialized mitigation following the submission of a detailed plan of development or other project proposal, and an environmental analysis.

Operating standards are given as acceptable methods for mitigating anticipated effects and achieving the desired plan outcomes but are not prescribed as the only method for achieving the outcomes. These measures will provide the BLM and other land users, including industry, greater adaptability in protecting surface resources by emphasizing the intent or outcome of mitigation. This mitigation strategy will help the BLM make decisions effectively by using a rigorous combination of management, research, and monitoring so that credible information is gained and management activities can be modified, over time, based on continuous experience.

The mitigations are requirements, procedures, management practices, or design features that the BLM, through the record of decision (ROD), could adopt as operational requirements. These requirements will be addressed through the permitting process. An oil and gas lease does not in itself authorize any on-the-ground activity. Seismic operations, drilling, pipeline construction, and other development activities require additional land use authorizations. Any applicant requesting such authorization must address the operating standards either before submitting the application (e.g., for wildlife surveys) or as part of the application proposal. The applicability of the mitigating operating standards goes beyond the oil and gas lease to any permitted activity where the requirement is relevant.

Operating standards are listed that could be applied to exploratory oil and gas drilling and other operations. When drilling intensity proceeds to the development stage, additional environmental analysis will be necessary. The operating standards could be revised at the gas field development environmental impact statement (EIS) stage if necessary.

These guidelines and standards could be applied to surface disturbing and human presence activities such as oil and gas development, road or pipeline construction, range improvements, forest management, vegetation treatment, and permitted recreation activities. They are designed to protect resources such as soils and vegetation, wildlife habitat, or cultural or historic properties. The use and application of specific mitigation measures will be made during the environmental process for individual proposals. Mitigation measures and operating standards could change or be modified, based on new information.

The mitigation guidelines are used in two ways in the Resource Management Plan (RMP) and EIS process: (1) as part of the planning criteria in developing the RMP alternatives and (2) in the analytical processes of developing the alternatives and analyzing the impacts of the alternatives. In the first case, an assumption is made that one or more of the mitigations will be included appropriately as conditions of relevant actions being proposed or considered in each alternative. In the second case, the mitigations are used to (1) develop a baseline for measuring and comparing impacts among the alternatives; (2) identify other actions and alternatives that should be considered, and (3) help determine whether more stringent or less stringent mitigations should be considered.

Those resource activities or programs currently without a standardized set of permit or operation stipulations can use the mitigation guidelines as stipulations or as conditions of approval, or as a baseline for developing specific stipulations for a given activity or program.

BLM may add additional site-specific restrictions as deemed necessary by further environmental analysis and as developed through consultation with other federal, state, and local regulatory and resource agencies. Laws or regulations may require other federal, state, and local permits (e.g., Clean Water Act Section 404) for an oil and gas or other project to proceed. Specific state permits may be required when the state has primary authority, under federal or state law or regulation, to enforce the provision in question. Specific permits issued by federal agencies other than the BLM could include permit conditions that are more stringent than those presented below.

PERMITTING AND AUTHORIZATION PROCESS

The operating standards identified in the following sections will not be attached as stipulations on oil and gas leases. The oil and gas lease is a binding agreement between BLM and the lessee that does not authorize subsequent surface disturbing activity. All surface disturbing activities (e.g., exploratory drilling, road/pipeline construction, or seismic operations) require additional authorization(s) issued subsequent to leasing. This authorization or permitting process, which includes permits, leases, and rights-of-way, is a multistep process as follows:

- **Perform Preapplication Consultation**. The BLM meets and consults with the potential applicant and other affected parties before submission of any written application(s). At the time of the preapplication consultation, the applicant is informed of BLM procedures and operating requirements, including any other federal, state, or local permit requirements so that any inadequacies and deficiencies in the verbal proposal can be addressed with the submittal of the application. Also at this time, the BLM, the applicant, and other affected parties may visit the proposed site to identify unknown issues.
- **Review Written Application for Completeness.** Based on an initial review of the written application, additional information may be requested, or application may be rejected.
- **Evaluate Application.** A BLM Interdisciplinary (ID) Team reviews the proposal to—
  - Determine if the proposal complies with the **Outcome and Operating Standards;** this may be accomplished by adhering to the recommended requirements/standards or by the use of new techniques/practices that meet the objective(s).
  - Based on additional analysis (e.g., National Environmental Policy Act [NEPA] of 1969, environmental assessment [EA] or EIS), identify any new mitigations that may be required based on site and project-specific information, including any new issues identified throughout this process.
  - Identify appropriate monitoring levels to determine the effectiveness of the mitigations.
- **Issue Authorization.** Issue authorization with appropriate terms and conditions of approval identified or attached.

Exception Process

The permitting process, in conjunction with lease stipulations and operating standards that are focused on resource management objectives, should result in the need for few exceptions. However, the need to

consider exceptions and/or modifications will remain on a case-by-case basis. The following guidelines will be used for considering and granting exceptions to the proposed stipulations or operating standards.

If an exception to a stipulation, condition of approval, or operating standard is requested and before an exception may be granted, the lessee and permittee shall demonstrate to the satisfaction of the Authorized Officer (AO) that implementation of the stipulation or operating standard:

- (1) Is technically not feasible, or (2) is economically prohibitive, or (3) an environmentally preferable alternative is available; and
- The alternative proposed by the lessee/permittee fully satisfies the objective/outcome of the lease stipulation or operating standard.

The lessee/permittee shall notify the AO in a timely manner that an exception will be requested. In demonstrating to the AO that the proposal meets the above criteria, the lessee/permittee shall provide sufficient documentation (e.g., technical reports, new/revised procedures, results of scientific research) to allow for a thorough review and evaluation of the proposal.

Before consideration or granting of an exception to a stipulation, condition of approval, or operating standard, consultation requirements must be met. The AO shall consult with appropriate federal, state, and local regulatory and resource agencies before an exception may be granted. The AO's power to grant exceptions to an operating standard is limited to those subjects, uses, and permits over which the BLM has authority. Exceptions to this consultation may be granted in emergencies involving human health and safety. The granting of an exception will not require a modification/amendment to the land use plan because exceptions will be consistent with the land use plan in achievement of the management objective.

The BLM may also initiate an exception to a stipulation, condition of approval, or operating standard when information (e.g., technical reports, new/revised procedures, or results of scientific research) becomes available that demonstrates that the proposal satisfies the objective of the operating standard and meets the management objectives for the area in which the alternative is proposed. Exceptions will be considered, evaluated, and processed in accordance with Appendix 8.

Waiver of, or exception(s) to, the no surface occupancy (NSO) requirement will be subject to the same test used to initially justify its imposition. If, upon evaluation of a site-specific proposal, it is found that less restrictive mitigation would adequately protect the public interest or value of concern, then a waiver or exception to the NSO requirement is possible. The record must show that because conditions or uses have changed, less restrictive requirements will protect the public interest. An environmental analysis must be conducted and documented to provide a basis for a waiver or exception to an NSO planning decision. Modification of the NSO requirement will pertain to only refinement or correction of the location(s) to which it applied. If the waiver, exception, or modification is found to be consistent with the intent of the planning decision, it may be granted. If the waiver, exception, or modification is found inconsistent with the intent of the planning decision, a plan amendment will be required before the waiver, exception, or modification could be granted.

Please refer to Appendix 8 for further information on exceptions.

MITIGATIONS

General Guidelines

Proposed project development will require the appropriate level of environmental review in accordance with applicable federal, state, and local regulations.

Removal and disturbance of vegetation will be kept to a minimum through construction site management (e.g., using previously disturbed areas and existing easements, limiting equipment/materials storage yard and staging area size).

Where necessary, areas to be disturbed will require inventories or special studies to determine the extent of site-specific impacts and appropriate mitigation. Operators will be required to complete inventories or short-term special studies under guidelines provided by the BLM or as developed through the AM planning process.

There will be no well location or production facility surface occupancy within one-quarter mile of an occupied dwelling to prevent damage to human health and safety and/or other resources. Any surface use or occupancy within such special areas is prohibited or, if absolutely necessary, strictly controlled.

No surface disturbance is permitted on slopes in excess of 25 percent unless erosion controls can be ensured and adequate revegetation is expected. Engineering proposals and revegetation and restoration plans are required in these areas.

Unnecessary topographic alterations will be mitigated by avoiding, where possible, steep slopes, rugged topography, and perennial and ephemeral/intermittent drainages, and by minimizing the area disturbed. Alternative methods of construction to minimize environmental impacts may also be used.

Construction with frozen material or during periods when the soil material is saturated or when watershed damage is likely to occur is prohibited, unless or until an operator, permittee, or his/her designated representative and the surface management agency, prior to development, arrive at an acceptable plan for mitigation of anticipated impacts.

Air Quality

Air quality mitigation will be voluntary or required by the BLM.

In accordance with Wyoming Air Quality Standards and Regulations, Chapter 3, Section 2(f), the emission of fugitive dust will be limited by all persons handling, transporting, or storing any material to prevent unnecessary amounts of particulate matter from becoming airborne to the extent that ambient air standards described in these regulations are exceeded.

Necessary air quality permits to construct, test, and operate facilities will be obtained from the Wyoming Department of Environmental Quality-Air Quality Division (WDEQ-AQD). All internal combustion equipment will be kept in good working order. Best available control technology (BACT) will be implemented as required by WDEQ-AQD.

Operators will comply with all applicable local, state, tribal, and federal air quality laws, statutes, regulations, standards, and implementation plans, including Wyoming Ambient Air Quality Standards (WAAQS) and National Ambient Air Quality Standards (NAAQS).

To avoid the incremental risk of exposure to carcinogenic toxins from producing wells, no well will be located closer than 0.25 mile from a dwelling or residence. At 0.25 mile, the incremental risk increase for the most likely exposure scenario is below the designated threshold level of less than 1 additional person per million.

To avoid incremental risk of exposure to carcinogenic toxins from compressor facilities, any compressor facility located closer than 4 miles to a dwelling or residence will require additional NEPA analysis prior to the final selection of the site and authorization to construct.

Cultural/Paleontological Resources

If effects to paleontological values, or objects of historic or scientific interest are observed, the operator will be required to immediately contact the BLM and the operator will be required to cease any operations that would result in the destruction of or adverse impact to these values.

In areas of paleontological sensitivity, the BLM will make a determination as to whether a survey by a qualified paleontologist is necessary prior to the disturbance. In some cases, construction monitoring, project relocation, data recovery, or other mitigation will be required to ensure that significant paleontological resources are avoided or recovered during construction.

If paleontological resources are uncovered during surface-disturbing activities, operators will suspend operations at the site that would further disturb such materials and immediately contact the BLM AO, who will arrange for a determination of significance, and, if necessary, recommend a recovery or avoidance plan. Mitigation of impacts to paleontological resources will be conducted on a case-by-case basis, and operators will either avoid or protect paleontological resources.

Areas underlain by either the Wasatch or Green River formations have a high potential for containing vertebrate paleontological resources (fossils) and must be surveyed by a qualified paleontologist before surface disturbing activities will be authorized. Based on the results of the paleontological survey, additional monitoring and/or mitigation will be necessary. All major pipelines (12” and larger) will have paleontological open trench inspections and geologic research to resolve mapping issues discovered during the paleontological overview in the Jonah Field. Other actions, such as onsite project monitors by professional paleontologists while surface disturbing activities are occurring, and/or spot-checks of spoil piles, pits, and trenches prior to backfilling will become more common and will be considered standard stipulations within the Blue Rim-Ross Butte Management Area.

Operators will follow the Section 106 compliance process prior to any surface-disturbing activity and will either avoid or protect cultural resource properties as determined through consultation with the Wyoming State Historic Preservation Office (SHPO).

Operators will halt construction activities at the site of previously undetected cultural resources discovered during construction. The BLM will be notified immediately, and consultation with SHPO and, if necessary, the Advisory Council, will be initiated to determine proper mitigation measures pursuant to 36 Code of Federal Regulations (CFR) 800.11 or other treatment plans, programmatic agreements, or discovery plans that may direct such efforts. Construction will not resume until a Notice to Proceed is issued by the BLM.

In culturally sensitive soils, if cultural resources are located within frozen soils or sediments precluding the ability to adequately record or evaluate the find, construction work will cease and the site will be protected for the duration of frozen soil conditions. Following natural thaw, recordation, evaluation and recommendations concerning further management will be made to the BLM AO, who will consult with

affected parties. Construction work will be suspended until management of the threatened site has been finalized.

Should future work identify any traditional Native American religious or sacred sites, consultation among the BLM, the affected Native American group, the Wyoming SHPO and the project proponent will occur to resolve conflicts. This consultation will occur on a case-by-case basis or in conformance with an approved Native American Concerns Agreement Document.

Operators should inform their employees, contractors, and subcontractors about relevant federal regulations intended to protect archaeological and cultural resources. All personnel should be informed that collecting artifacts (including arrowheads) is a violation of federal law and that employees engaged in this activity may be subject to disciplinary action, which could include dismissal.

Equipment operators should be informed that a cultural resource could be found anywhere; and if they uncover a site during construction, surface disturbing activities at the site must be halted immediately and the BLM notified.

Historic trails will be avoided. Surface disturbing activities will avoid areas within one-quarter mile of a trail unless such disturbance will not be visible from the trail or will occur in an existing visual intrusion area. Historic trails will not be used as haul roads. Placement of facilities outside one-quarter mile that are within view of the Lander Trail will be located to blend the site and facilities in with the background.

The selective use of locked gates, where practicable, could be used to protect any significant cultural sites found during inventories. This approach is more commonly used as a seasonal restriction to protect wildlife during winter months, but some applications may also present themselves from a cultural resources standpoint.

Fire and Forestry

Coniferous timber stands should contain a 40-percent or greater post-harvest canopy cover with patch sizes between 26 and 60 acres to meet seasonal elk habitat requirements where feasible and compatible with other timber management goals (USDA 1981).

The leaving of dead and dying trees, trees with heart rot, and other standing unmerchantable timber may be required to meet the ecological needs of numerous wildlife species, including woodpeckers, owls, and many neotropical migrants, in all timber management activities.

Prescribed burning will be conducted when soil moisture is adequate for the regrowth of plants in arid regions, provided this requirement is compatible with other prescription burn needs (USDA 2004).

Roads and Transportation

Roads created for commercial timber harvesting will be closed and rehabilitated as soon as possible after the end of timber harvesting. Areas could be subject to travel exclusions, closures, and/or other travel restrictions during sensitive periods.

The project proponent could be required to develop a coordinated travel management plan before surface disturbing activities are authorized.

Transportation plans will be required to maintain the largest undisturbed blocks of habitat possible and to minimize the acres of disturbance from roads, pipelines, power lines, and other facilities within and/or associated with the proposed project area.

Closure and reclamation of unnecessary roads will be required to reduce fragmentation and restore habitat integrity while reducing the potential for wildlife disturbances.

All new roads will be constructed to meet the design requirements of the BLM Manual 9113. New main artery roads will be designed to reduce sediment, salt, and phosphate loading to the Green and New Fork Rivers. Where necessary, running surfaces of the roads will be graveled if the base does not already contain sufficient aggregate.

If necessary, roads will be treated to suppress dust. Treatment could include gravel, mag-water, or in rare cases, paving of roads.

The use of existing two-track and unconstructed roads will be encouraged where such roads would withstand the proposed access activity, would provide a safe route for ingress and egress, would not result in offsite sediment discharge, could be effectively reclaimed, and would result in minimal, if any, new surface disturbance.

The operator will regularly maintain all lease roads in a safe, usable condition. A regular maintenance program will include, but not be limited to, blading, ditching, culvert installation, drainage installation, surfacing, and cattleguards, as needed. Design, construction, and maintenance of the road will be in compliance with the standards contained in BLM Manual, Section 9113 (Roads), and in the latest version of the "Gold Book," *Oil and Gas Surface Operating Standards for Oil and Gas Exploration and Development.*

At the discretion of the BLM AO, road construction may be required to be monitored by a qualified individual agreed to by the BLM AO and the operator. A certified civil engineer is to submit a statement that the road was built as designed within 15 days after the road has been constructed. Compaction of the subgrade with water and heavy equipment to a density higher than the surrounding subsurface is required during construction.

Project-related travel will be limited to only that necessary for efficient project operation during periods when soils are saturated and excessive rutting could occur.

Where deemed necessary and effective by the BLM AO, locked gates will be installed on oil field roads (with structures added to prevent drive-arounds) to reduce traffic and protect other resources (e.g., wildlife, cultural resources) from impacts caused by increased vehicle traffic and human presence. The need and location of locked gates will be determined during the transportation planning process. To control or reduce sediment from roads, guidance involving proper road placement and buffer strips to stream channels, graveling, proper drainage, seasonal closure, and in some cases, redesign or closure of old roads will be developed when necessary. Construction may also be prohibited during periods when soil material is saturated, frozen, or when watershed damage is likely to occur.

Available topsoil will be stripped from all road corridors prior to commencement of construction activities and will be redistributed and reseeded on backslope areas of the borrow ditch after completion of road construction activities. Borrow ditches will be reseeded in the first appropriate season after initial disturbance.

On newly constructed roads and permanent roads, the placement of topsoil, seeding, and stabilization will be required on all cut and fill slopes unless conditions prohibit this (e.g., rock). No unnecessary side-casting of material (e.g., maintenance) on steep slopes will be allowed. Snow removal plans may be required so that snow removal does not adversely affect reclamation efforts or resources adjacent to the road.

Reclamation of abandoned roads will include requirements for reshaping, recontouring, resurfacing with topsoil, installation of water bars, and seeding on the contour. Road beds, well pads, and other compacted areas will be ripped to a 2-foot depth on 1.5-foot centers to reduce compaction prior to spreading the topsoil across the disturbed area. Stripped vegetation will be spread over the disturbance for nutrient recycling, where practical. Fertilization or fencing of these disturbances will not normally be required. Additional erosion control measures (e.g., fiber matting) and road barriers to discourage travel may be required. As deemed necessary by the BLM AO, graveled roads, well pads, and other sites will be stripped of usable gravel and hauled to new construction sites prior to ripping. The removal of structures such as bridges, culverts, cattleguards, and signs usually will be required.

Road closures may be implemented during crucial periods (e.g., wildlife winter periods, spring runoff, calving and fawning seasons, saturated soil conditions).

Individual road design plans for new and/or improved roads will be submitted for approval as components of APDs or ROW permits. Plans must be approved prior to initiation of work. Operators will schedule a review of plans with sufficient time to obtain BLM approval prior to commencement of work.

Existing roads will be used to the maximum extent possible and upgraded as necessary.

Operators will comply with existing federal, state, and county requirements and restrictions to protect road networks and the traveling public.

Roads and pipelines will be located adjacent to existing linear facilities wherever practical.

As deemed necessary by the BLM AO, operators and/or their contractors will post appropriate warning signs and require project vehicles to adhere to appropriate speed limits on project-required roads.

The application of produced water on roads for use in dust suppression activities on BLM-administered public lands will not be allowed unless total dissolved solids (TDS) are less than 400 mg/l (state standard for the Colorado River drainage), the water does not contain hazardous material, and prior approval is obtained from BLM and WDEQ.

Appropriate dust suppressants will be applied to oil and gas field and other roads as necessary. Depending on the site and amount of traffic, suppressants could include water or mag water. In some cases, paving of roads could be required to control dust, provide all-weather access, and reduce road maintenance.

Pipelines

Channel crossings by pipelines will be constructed so that the pipe is buried at a depth sufficient to ensure the pipeline does not become exposed.

Channel crossings by roads and pipelines will be constructed perpendicular to flow. Streams/channels crossed by roads will have culverts installed at all appropriate locations as specified in the BLM Manual 9112-Bridges and Major Culverts (USDI, BLM 1990) and Manual 9113-Roads (USDI, BLM 1985). All

stream crossing structures will be designed to carry the 25-year discharge event or other capacities as directed by the BLM.

Wetland areas will be crossed during dry conditions (i.e., late summer, fall, or dry winters); winter construction activities will occur only prior to soil freezing or after soils have thawed.

On ditches exceeding 24 inches in width, 6 to 12 inches of surface soil will be salvaged where possible on the entire right-of-way. When pipelines and communication lines are buried, at least 30 inches of backfill will be on top of the pipe. Backfill should not extend above the original ground level after the fill has settled. Guides for construction and water bar placement are found in "Surface Operating Standards for Oil and Gas Exploration and Development" (USDA 1978). Bladed surface materials will be re-spread on the cleared route once construction is completed. Disturbed areas that have been reclaimed may need to be fenced when the route is near livestock watering areas.

Pipeline ROWs will be located to minimize soil disturbance. Mitigation will include locating pipeline ROWs adjacent to access roads to minimize ROW disturbance widths, or routing pipeline ROWs directly to minimize disturbance lengths. In some cases, it may be appropriate to place pipelines directly on the surface.

Existing crowned and ditched roads will be used for access where possible to minimize surface disturbances. Clearing of pipeline and communication line rights-of-way will be accomplished with the least degree of disturbance to topsoil. Where topsoil removal is necessary, it will be stockpiled (wind-rowed) and re-spread over the disturbance after construction and backfilling are completed. Vegetation removed from the right-of-way will also be re-spread to provide protection, nutrient recycling, and a seed source.

Temporary disturbances that do not require major excavation (e.g., small pipelines and communication lines) may be stripped of vegetation to ground level using mechanical treatment, leaving topsoil intact and root mass relatively undisturbed.

Trees, shrubs, and ground cover (not to be cleared from rights-of-way) will require protection from construction damage. Backfilling to preconstruction condition (in a similar sequence and density) will be required. The restoration of normal surface drainage also will be required.

To promote soil stability, the compaction of backfill over the trench will be required (not to extend above the original ground level after the fill has settled). Wheel or other method of compacting the pipeline trench backfill will be required at two levels to reduce trench settling and water channeling; once after 3 feet of fill has been replaced and once within 6 to 12 inches of the surface. Water bars, mulching, and terracing will be required, as needed, to minimize erosion. In-stream protection structures (e.g., drop structures) may be required in drainages crossed by a pipeline to prevent erosion. The fencing of linear disturbances near livestock watering areas may be required.

During saturated soil conditions vehicular activity will be confined to roads designed and constructed for all-weather access (e.g., paved, graveled, and "mag-water" surfaced roads).

Crossings of ephemeral, intermittent, and perennial streams associated with road and utility line construction will generally be restricted until after spring runoff, when normal flows are established.

Pipeline projects should be conducted to allow natural movement of livestock through the field. Gaps should be provided in the trenching process to allow cows to move, or get pipeline projects completed while cattle are not on the allotment.

Livestock Grazing

Livestock grazing management will be conducted to meet the Standards for Healthy Rangelands.

Improvements for livestock grazing management will be constructed and managed to meet the Standards for Healthy Rangelands.

Springs and seeps used for livestock water sources will be fenced to protect these water sources and to maintain unrestricted flow rates.

Livestock grazing Best Management Practices (BMP) will be implemented to maintain or restore habitat conditions for various fish and wildlife species.

Rangeland and vegetation monitoring will be conducted to detect changes in grazing use, trend, and range conditions. These data will be used to support and direct grazing management decisions consistent with national policy. These efforts will help ensure that livestock grazing meets objectives for rangeland health and resolves conflicts with wildlife habitats or may provide a benefit to wildlife habitats.

Existing fences will be reconstructed or modified to meet BLM "wildlife friendly" standards to reduce or offset impacts to wildlife where determined necessary.

All water development activities for livestock grazing use that exceed the minimum depletion level established by USFWS must comply with all USFWS fees and prescribed mitigations to offset water depletion in the Colorado River.

Surface disturbing activities will be coordinated with livestock grazing permittees to minimize the effects of the surface disturbance on other approved operations. To the maximum extent practicable, this effort will include consulting on scheduling of operations to mutually minimize effects.

Any damage to the function of range improvements (e.g., fence damage, cattle guard cleaning, livestock loss) from other approved operations will be repaired immediately or remedied by the operator causing the damage.

All range improvements (stock water tanks, pipelines, corrals, etc.) will be avoided by 500 feet unless no other alternative is available and impacts can be mitigated as per the BLM AO.

When industrial use dominates an allotment to the point of making it unsuitable for livestock grazing, BLM will consider granting special non-use so that livestock could be removed without penalty for a specified amount of time.

Where development is intense, operators will hold semi-annual or annual operator meetings with grazing permittees. Operators will identify an employee to coordinate with grazing permittees on these issues.

Compensation will be provided by operators for cattle lost to oil and gas activities (includes deaths from pits and animals struck on roads). This will be addressed in the same manner as a road maintenance agreement, with operators making payment based on their level of activity, not on the proximity to the dead animal.

Oil and gas or other operations will be conducted so as to retain access to cattle movement corridors (trails) so that livestock can be managed.

Pipeline projects will be conducted to allow natural movement of livestock through the field. Gaps will be provided in the trenching process to allow cows to move or get pipeline projects completed while cattle are not on the allotment.

Well pads, pits, and other facilities that could be hazardous to livestock will be fenced to keep livestock out and the fences maintained in functioning condition.

Operators will mitigate all energy development related impacts to agricultural operations, in order to maintain the viability of working landscapes.

Grazing management decisions will be based on monitoring data, both short-term and long-term, which will be jointly developed by grazing permittees and the appropriate federal land management agency. Protocols for monitoring will be consistent with the Memorandum of Understanding in place between the National Public Lands Council and the BLM.

A menu of incentive based mitigation and conservation measures will be developed that will encourage local, private land owners to participate.

A program will be developed for local landowners to participate in conservation efforts including a local initiative to develop and implement Contracts for Environmental Services as a means to preserve Sublette County's working landscapes, working ranches, and open space values.

Acceptable levels of grazing will be maintained to benefit both sage grouse and agricultural operations.

Effective communication and cooperation with grazing permittees will be maintained.

Meet with permittees, at minimum twice annually, before turnout to schedule maintenance activities and after the grazing season to discuss monitoring.

A mitigation plan will be developed with state and local representatives to maintain existing ranch lands.

Loss of ranches due to impacts from energy development will be monitored.

A fund will be established to develop range improvement projects away from individual oil and gas developments.

All pads will be completely fenced and existing range improvements will be monitored and maintained. All new fences will adhere to standards provided by BLM Handbook H-1742-1. Fences will be maintained.

Minerals

Drilling of multiple well bores from a single well pad will be required, unless it were shown to be infeasible.

Well locations and associated disturbances that are dry holes or abandoned producers will be reclaimed as soon as practicable.

Reserve pits, evaporation ponds, or other oil and gas related pits shall be designed and operated in a manner that deters or prevents access to birds, waterfowl, livestock and wildlife. Pit netting is an example of a measure to accomplish this requirement.

Project Siting and Operation

In conformance with Onshore Oil and Gas Order No. 1, operators will prepare and submit individual comprehensive drill site design plans for BLM approval. These plans will show the drill location layout over the existing topography, dimension of the location, volumes and cross-sections of cut and fill, location and dimensions of reserve pits, existing drainage patterns, and access road egress and ingress. Plans will be submitted and approved prior to initiation of construction.

The operator will submit to the BLM AO within 30 days of pad construction a digital as-built file of the following: the perimeter of the pad measured at the base of fill slopes and at the head of cut slopes, including all associated soil pile locations and the centerline of the access road. The operator will also submit to the BLM AO within 30 days of drilling, a digital file of the surface location of the well head(s). The digital depiction will be in one of the following file formats: shapefile format (*.shp), geodatabase (*.gdb), or AutoCADD (*.dwg), and should come with defined projections in NAD83 UTM Zone 12 N.

Operators will contact the BLM AO's field representative no earlier than 15 days and no later than 3 working days prior to commencement of construction activities. Construction under adverse conditions may require additional mitigation measures.

Prior to the onset of drilling, a "stock tight" fence will be installed on three sides of the reserve pit. This fence will be woven wire at least 28 inches high and within 4 inches of ground surface, with two strands of barbed wire above the woven wire with 10-inch spacing. The fence corners will be double H-brace panels constructed with treated wood corner posts or steel pipe posts of at least 4-inch outside diameter (see Gold Book, pgs 16-18). The corner brace posts will be securely set at a minimum of 30 inches in the ground. Metal T-posts are not allowed for corner panel construction, but they may be used between corner panels. The fourth side of the reserve pit will be fenced after the drilling rig moves off the location. The fence will be located a maximum of 5 feet from the edge of the reserve pit. The double H-braces will be used on all corners of the pit area. The operator will implement measures to prevent wildlife and livestock from entering the reserve area during drilling and well completion operations before the fourth side of the fence has been constructed.

All reserve pits must be lined. Reserve pit liners must have a mullen burst strength that is equal to or exceeds 300 pounds, a puncture strength that is equal to or exceeds 160 pounds, and grab tensile strengths that are equal to or exceed 150 pounds. Verified test results will be conducted according to ASTM test standards. The liner must be totally resistant to deterioration by hydrocarbons.

Liners must be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials that could damage the liner. Sand, sifted dirt, or bentonite are suggested.

Reserve pit side slopes will not exceed a 1:1 ratio. End slopes will not exceed a 3:1 ratio.

Oil-based muds used for drilling operations should be environmentally acceptable.

All oil-based mud drilling operations will be completed through a closed mud system, and all oil-based mud will be contained in the closed system.

The closed drilling system will be equipped with appropriate drip pans, liners, and catchments under probable leak sources as needed to prevent the oil-based drilling mud and cuttings from reaching the reserve pit and/or ground surface of the drill pad.

Any cuttings dropped or mud spilled will be cleaned up immediately and placed in the approved containment device. All spills exceeding one barrel outside the containment devices will be reported to the BLM within 8 hours.

All BPO equipment, as well as all elastomers in the mud system, will be suitable for oil-based mud.

Well control training of the rig crews will include coverage of the additional hazards associated with oil-based mud.

The operator will exercise extreme caution to avoid discharging oil-based drilling mud into the reserve pit. Should an event occur in which it is necessary for oil-based mud to be discharged to the reserve pit, the operator will immediately initiate the following actions:

- The reserve pit will be secured to prevent birds and other wildlife from getting into the oil-contaminated cuttings, fluids, and mud.
- The operator will submit a plan to the BLM-PFO describing how the contaminated pit will be managed (i.e., will the contaminated material/fluids be treated in place, and if so by what method; or will the contaminants be removed to a WDEQ-approved disposal facility).

Operators will submit a Sundry Notice describing how the oil contaminated drill cuttings will be treated to assure the oil stays contained in the cuttings and where the cuttings ultimately will be stored (i.e., buried in the flare pit, buried in a separate "on-location" pit, or removed to a WDEQ-approved disposal site. Any on location disposal sites for the oil contaminated drill will be lined with a 12-mil or stronger impervious liner compatible with oils. A liner meeting this specification also will be placed under any temporary storage area for the oil contaminated cuttings.

Oil-based mud drilling system shall not be used for drilling through formations containing fresh water aquifers. Prior to drilling surface casing with a rig that has been using oil-based mud, the pumps, pump lines and tanks will be cleaned to ensure that **NO** oil-based mud is in the system during surface drilling operations of the new well.

Surface casing shall be set to a depth below all potential sources of usable or potable drinking water. All surface casing shall be cemented from total depth back to surface. In the event surface casing cannot be set to this depth, the subsequent casing string shall be cemented from its total depth to at least 100 feet above the surface casing shoe. In the event surface casing cementing does not reach the surface, that casing shall be remedially cemented by squeeze or top cementing as approved by the BLM FO.

If drilling fluids are transferred from one well to the next well in the drilling plan, then the fluids will be tested immediately before transfer or at the time following last pit usage based on WDEQ Guideline 8 parameters. This water analysis standard is incorporated in a packet submitted by Western Environmental Services and Testing, Inc., as part of its water analysis packages. Any other company conducting water testing also will need to test for the elements listed in the WDEQ Guideline 8 parameters.

To ensure the timely review of the water quality data, the operator is required to have a WDEQ approved firm contracted to conduct water samples and to send a copy of water quality test results to the BLM PFO at the same time that they are sent to the operator.

Operators will construct reserve pits with 2 feet of freeboard in cut areas or in compacted and stabilized fill. Reserve pits will not be located in areas in which groundwater is less than 50 feet from the surface. A closed system will be required if water shows in the conductor hole.

Produced water from oil and gas operations will be disposed of in accordance with the requirements of Onshore Oil and Gas Order #7.

Any drilling fluids pit that shows indications of containing hazardous wastes will be tested for the Toxicity Characteristic Leaching Procedure constituents. If analysis proves positive, the fluids will be disposed of in an approved manner. The cost of the testing and disposal will be borne by the potentially responsible party.

Wells, pipelines, and ancillary facilities will be designed and constructed such that they will not be damaged by moderate earthquakes. Any facilities defined as critical according to the Uniform Building Code will be constructed in accordance with applicable Uniform Building Code Standards for Seismic Risk Zone 2B.

Before conducting any reserve pit evaporation, by means other than natural evaporation, the operator will submit a Sundry Notice for Authorized Officer approval. The Sundry Notice will provide a detailed description of the drying method. The operator is required to obtain authorization from the WOGCC for pit fluid treatment by means other than natural evaporation.

Sewage disposal facilities will be in accordance with state and local regulations.

Trash will be contained in a portable trash cage. The trash cage will be emptied in a WDEQ approved sanitary landfill.

Slope, grade, and other construction control stakes (e.g., exterior boundary centerline) will be placed, as necessary, to ensure construction in accordance with the surface use plan. The cut and fill slopes and spoil storage areas will be marked with a stake and/or lath at a minimum of 50-foot intervals. The tops of the stakes or laths will be painted or flagged in a distinctive color. All boundary stakes and/or laths will be maintained in place until final construction cleanup is completed. If stakes are disturbed, they will be replaced before proceeding with construction.

Drilling, well completion, and workover lights will be shrouded and directed on to the drilling platform and/or well pad, to the extent allowed by safety requirements, so that lights/glare are not directed away from the well pad.

Production Facilities

All storage tank batteries, including drain sumps and sludge holdings at compressor facilities, installed on location and designed to contain any oil, glycol, produced water, or other fluid that may constitute a hazard to public health or safety, will be surrounded by a secondary means of containment for the entire contents of the largest single tank in use plus 1 foot of freeboard for precipitation or 110 percent of the capacity of the largest vessel. The appropriate containment and/or diversionary structures or equipment, including walls and floor, to prevent discharged fluid from reaching ground, surface, or navigable waters, will be impervious to any oil, glycol, produced water, or other fluid for 72 hours and will be constructed so that any discharge from a primary containment system (e.g., tank or pipe) will not drain, infiltrate, or otherwise escape to ground, surface, or navigable waters before cleanup is completed.

Treaters, dehydrators, and other production facilities installed on location that have the potential to leak or spill oil, glycol, produced water, or other fluid that may constitute a hazard to public health or safety, will be placed on or within an appropriate containment and/or diversionary structure to prevent spilled or leaking fluid from reaching ground, surface, or navigable waters. The appropriate containment and/or diversionary structure will be sufficiently impervious to oil, glycol, produced water, or other fluid and

will be installed so that any spill or leakage will not drain, infiltrate, or otherwise escape to ground, surface, or navigable waters before cleanup is completed.

All aboveground permanent structures (permanent means onsite for longer than 90 days) not subject to safety requirements will be painted by the operator to blend with the natural color of the landscape. New production facilities will be painted a noncontrasting color that is harmonious with the surrounding landscape as specified and approved by the BLM on a case-specific basis.

Stream sediment, phosphate, and salinity load will be reduced where possible. In areas in which groundwater exists 50 feet or less from the surface (WOGCC), produced water from oil and gas operations will be disposed of in an approved closed storage system or by other acceptable means complying with Onshore Order #7.

Where the depth to groundwater is less than 100 feet and soil permeability is more than 0.1 foot/day, plants, mills, or associated tailings ponds and sewage lagoons will not be allowed.

Proper containment of oil and produced water in tanks, drilling fluids in reserve pits, and locating staging areas for storage of equipment away from drainages will prevent potential contaminants from entering surface waters.

All new production facilities construction that has open-vent exhaust stacks will be equipped to prevent bird and bat entry or perching on the stack.

A sundry notice must be submitted and approved prior to any pit closures or reclamation work.

In the event that any hydrocarbon material is released into the reserve or production pits, it will be removed within 24 hours of the discharge event. Any pits that have or ever have had hydrocarbons shall be netted or otherwise secured to prevent birds or wildlife from entering them.

All secondary containment structures will be designed to prevent bird, animal, or livestock entry.

If directional drilling is not possible, facilities will be co-located on a centralized pad as much as possible to decrease truck trips and human disturbance during wildlife sensitive time periods.

Recreation

Operators will restrict off-road vehicle (OHV) activity by employees and contract workers to the immediate area of authorized activity or existing roads and trails.

Socioeconomics

Mitigate negative effects from growth; it will be necessary to calculate net costs and/or benefits. The BLM/operators will use the population projections developed in Chapter 4, and estimate effects to the counties based on current service and housing levels identified in Chapter 3. Where net effects are negative, the BLM/operators shall identify potential solutions to avoid such effects, or to reduce the impact.

Socioeconomic monitoring will follow the Pinedale Socioeconomic Monitoring Plan (6-24-08) developed by Dr. Robert Winthrop. Monitoring reports will be submitted to the BLM and cooperating agencies annually.

Soils

Soil retention measures, such as silt fencing, contour furrows, or hydromulching, shall be implemented on erosive soils at the time of disturbance.

Revegetation shall be initiated on exposed soils on portions of the disturbance no longer needed for operations (e.g., cut and fill slopes, portions of well pads not needed for production operations) within one growing season of the time the disturbance is no longer needed for operations. Interim reclamation (i.e., site stabilization/soil retention seeding) shall be conducted on disturbed areas that are needed for future planned operations but will not be occupied for one or more growing seasons.

Upland soils classified as highly erodible in the order three soil survey will be avoided.

Slopes greater than 10 percent and with south-facing aspects with sensitive or highly erosive soils and areas with biological crusts will be avoided.

Before a surface disturbing activity is authorized, topsoil depth will be determined. The amount of topsoil to be removed, along with topsoil placement areas, will be specified in the authorization. The uniform distribution of topsoil over the area to be reclaimed will be required, unless conditions warrant a varying depth. On large surface-disturbing projects (e.g., gas processing plants) topsoil will be stockpiled and seeded to reduce erosion. Where feasible, topsoil stockpiles will be designed to maximize surface area to reduce impacts to soil microorganisms. Stockpiles remaining less than 2 years are best for soil micro-organism survival and native seed viability.

Emphasis will be placed on the reduction of soil erosion and sediment into the Green River Basin watershed. Of particular importance will be those areas with saline soils or those areas with highly erodible soils. Critical erosion condition areas will continue to be identified during soil surveys, monitoring, site specific project analysis, and activity plan development for the purpose of avoidance and special management.

Operators will avoid adverse impacts to soils by—

- Minimizing disturbance, avoiding construction with frozen soil material
- Avoiding areas with high erosion potential (e.g., unstable soil, dunal areas, slopes greater than 25 percent, floodplains), where possible
- Salvaging and selectively handling topsoil from disturbed areas
- Adequately protecting stockpiled topsoil and replacing it on the surface during reclamation
- Leaving the soil intact (scalping only) during pipeline construction, where possible
- Using appropriate erosion and sedimentation control techniques, including, but not limited to, diversion terraces, riprap, and matting
- Promptly revegetating disturbed areas using adapted species
- Applying temporary erosion control measures (e.g., temporary vegetation cover)
- Applying biodegradable mulch, netting, or soil stabilizers
- Constructing barriers as appropriate in certain areas to minimize wind and water erosion and sedimentation prior to vegetation establishment.

Management of the soil resource will continue to be based on the following: 1) evaluation and interpretation of soils in relation to project design and development; 2) identification and inventory of soils for baseline data; and 3) identification and implementation of methods to reduce accelerated erosion.

Evaluation and interpretation involves identifying soil properties that influence their use and recommendations for development while minimizing soil loss. Projects will be examined on a site-specific basis, evaluating the potential for soil loss, and the compatibility of soil properties with project design. Stipulations and mitigating measures are provided on a case-by-case basis to ensure soil conservation and practical management. Projects requiring soil interpretations include construction of linear right-of-way facilities (i.e., pipelines, roads, railroads, and power transmission lines); construction of water impoundments; rangeland manipulation through fire or mechanical treatments; construction of plant site facilities, pump stations, well pads and associated disturbances; and reclamation projects.

BLM will require each individual right-of-way, APD, or other application to include a reclamation plan approved by the BLM. Each Master Development Plan for projects that cumulatively disturb more than 10 acres will be required to submit an Erosion, Revegetation and Restoration Plan (ERRP) consistent with BLM guidance. Prior to new disturbance, ERRPs will be approved by the BLM Authorized Officer.

Notice of any spill or leakage, as defined in BLM NTL 3A, will be immediately reported by the operator to the AO and other such federal and state officials (e.g., WDEQ) as required by law. Verbal notice will be given as soon as possible, but within 24 hours, and verbal notices will be confirmed in writing within 72 hours of any such occurrence. Any accidental soil contamination by spills of petroleum products or other hazardous materials will be cleaned up and the soil disposed of or rehabilitated according to WDEQ Solid Waste Guidelines (#2) for petroleum contaminated soils.

Visual Resource Management

Visual Resource Management (VRM) class objectives and design considerations should be considered early in the project planning process. Approval of well pad locations, new roads, buried pipelines, or other facilities will be conditioned upon the operator developing a visual resource protection plan, acceptable to BLM, for the mitigation of anticipated impacts. To minimize visual impacts, authorization of well pad locations, new roads, CPFs, buried pipelines, etc. will require the operator to demonstrate to the AO's satisfaction that the location and/or facilities have reasonably incorporated visual design considerations that mitigate unnecessary visual impacts.

Within VRM Class II and III areas, during onsite reviews, the BLM and the operator will evaluate potential disturbances and impacts to visual resources using the VRM Contrasting Rating Process and forms as required and described in Handbook H-8431-1. Identify appropriate mitigation and reevaluate until it is demonstrated that VRM management class objectives are met. Three-dimensional design and visual analysis software could be used to analyze impacts, develop mitigation plans, and prepare visual simulations. Digital terrain information could cover the project area viewshed with engineered site plans being entered into the Geographic Information System (GIS) 3D model allowing for comprehensive analysis and determining cumulative impacts. Mitigation techniques will include, but not be limited to new roads that are designed so that they conform with the landscape, incorporating curves to eliminate distant, straight line impacts; every opportunity will be taken to reclaim existing road ROWs that are not used when new roads are designed over them; revegetation will be initiated as soon as possible after disturbance; pipeline ROWs will be located within existing ROWs whenever possible; and aboveground facilities not requiring safety coloration will be painted with appropriate BLM-specified nonreflective standard environmental colors (i.e., Carlsbad Canyon, Shale Green or Desert Brown, or other specified standard environmental color). Topographic screening, vegetation manipulation, project scheduling, and traffic control procedures will all be employed as deemed appropriate by the BLM to further reduce visual impacts.

Low profile tanks will be required wherever visual sensitivity is an issue and/or wherever deemed appropriate mitigation to help maintain the visual integrity and basic characteristics of the landscape.

Within VRM Class IV areas, the BLM and operators will implement BMPs including, but not limited to the following: utilize existing topography to screen roads, pipeline corridors, drill rigs, wells, and production facilities from view, where practical. Operators will paint all aboveground production facilities with appropriate colors (Carlsbad Canyon, Shale Green or Desert Brown, or other specified standard environmental color) specified by the BLM to blend with adjacent terrain, except for structures that require safety coloration in accordance with OSHA requirements.

Avoid the introduction of new, linear visual intrusions on the landscape. New roads and pipeline corridors, to the extent practicable, will follow contours and use topography as screening. New pipelines will be combined with existing or proposed roads and, wherever possible, new cross-county pipeline corridors will be avoided.

If BLM allows a well pad to be developed in any area managed for visual resources, roads and well pads may need to be surfaced with materials that reduce visual contrast. For example, in the VRM Class II area near Pinedale, the subsoil material (Wasatch Formation) can be very light in color and thus contrasts with surrounding undisturbed areas. Mixing topsoil with gravel (1-inch deep) in highly visible areas will help to reduce contrast. Operators will be required to investigate the feasibility of applying this opportunity of surfacing roads and well pads with materials closer in color and texture to the surrounding landscape.

Watershed and Water

Approved surface disturbing management actions in stream corridors (within the “high bank” of any ephemeral or intermittent stream course, or within the high bank +50 feet of any perennial stream) shall be designed and implemented to protect fish spawning, fry, and other important fish life stages and habitats within the stream or connected streams and to maintain fish passage.

All disturbance occurring within the high bank +50 feet shall be reclaimed to meet the PFC standards.

Crossings of perennial streams will be located within existing “linear disturbance corridors” where possible. Should such a corridor not exist on a particular stream or with a reasonable distance of the proposed crossing, the crossing shall be located at a point to minimize disturbance to the stream channel and associated riparian habitat and maintain an adequate amount of unrestricted water flow to maintain fish passage during and after construction.

Horizontal directional drilling shall be used for all pipeline crossings of perennial streams and their associated riparian habitats, unless the operator/permittee/right-of-way holder can demonstrate to the AO’s satisfaction that this procedure is not economically or technically feasible for a given crossing.

Upland erosion from surface disturbing activities must be controlled effectively and not allowed to be transported to stream systems.

Prudent use of erosion control measures, including diversion terraces, riprap, matting, temporary sediment traps, and water bars will be employed as necessary. These erosion control measures will be used as appropriate to control surface runoff generated at well locations. The type and location of sediment control structure, including construction methods, will be described in APD and ROW plans. If necessary, to reduce suspended sediment loads and remove potential contaminants, Operators may treat diverted water in detention ponds prior to release to meet applicable state or federal standards.

BMP project proponents/operators/permittees will be required to control sediment from all construction sites.

Operators will prepare Stormwater Pollution Prevention Plans (SWPPP) for their respective areas of field development as required by WDEQ National Pollution Discharge Elimination System (NPDES) permit requirements.

Any industrial water wells and any tanks, pumps, hoses, pipes, or other associated connections will include check valves, backflow preventers, or other devices that secure the well against discharge of fluids into the well.

All water used for the drilling of the surface casing must comply with all requirements concerning water quality as set forth by WOGCC Regulations.

All water used in association with this project will be permitted through the Wyoming State Engineer's Office.

All water wells must be constructed and operated according to all requirements of the Wyoming State Engineer's Office and shall be equipped with measures and equipment to prevent backflow and/or siphoning into the well.

Wetlands, Riparian Areas, and Floodplains

All surface disturbance, permanent facilities, etc., will remain a minimum of 500 feet away from the edge of surface waters, riparian areas, wetlands, and 100-year floodplains unless it is determined through site-specific analysis, approved in writing by the BLM AO, that no practicable alternative to the proposed action exists. If such a circumstance exists, then all practicable measures to mitigate possible harm to these areas must be employed. These mitigating measures will be determined on a case-by-case basis and may include, but are not limited to, diking, lining, screening, mulching, terracing, and diversions.

Floodplains by their very nature are unsafe locations for permanent structures. With an inundation of flood waters, soils disturbed by construction could experience a rate of erosion greater than undisturbed sites. Additional concern exists over the potential for floodwaters to aid in the dispersal of hazardous materials that may be stored within such structures. Therefore, floodplains will have no permanent structures constructed within their boundaries unless it can be demonstrated on a case-by-case basis that there is no physically practical alternative. In cases in which floodplain construction is approved, additional constraints could be applied.

Floodplain Executive Order 11988 (Section 2.a.(2)) states in summary that if the HEAD OF THE AGENCY finds that the only practicable alternative consistent with the law and the policy set forth in the Order requires siting in a floodplain, the agency will, prior to taking action, 1) design or modify its action in order to minimize potential harm...and 2) prepare and circulate a notice containing an explanation of why the action proposed is to be located in the floodplain.

Floodplain Executive Order 11988 (Section 3), in reference to federal real property and facilities, states that agencies will, if facilities are to be located in a floodplain (i.e., no practicable alternative), apply flood protection measures to new construction or rehabilitate existing structures, elevate structures rather than fill the land, provide flood height potential markings on facilities to be used by the public, and when the property is proposed for lease, easement, right of way, or disposal, the agency has to attach restriction on uses in the conveyance, etc., or withhold from such conveyance.

Any disturbances to wetlands and/or waters of the U.S. will be coordinated with the COE, and 404 permits will be secured as necessary prior to disturbance.

Operators will evaluate all project facility sites for occurrence of waters of the U.S. special aquatic sites, and wetlands, per COE requirements. All project activities will be located outside these sensitive areas, where practical.

Where disturbance of wetlands, riparian areas, streams, and ephemeral/intermittent stream channels cannot be avoided, COE Section 404 permits will be obtained by the operator as necessary.

Discharge of Produced, Treated, or Other Waters

Operators or pipeline contractors will comply with state and federal regulations for water discharged into an established drainage channel. The rate of discharge will not exceed the capacity of the channel to convey the increased flow without creating alterations to the channel that could create a trend towards failing Wyoming Rangeland Standards. Waters that do not meet applicable state or federal standards will be treated or disposed of at approved facilities. The disposal of all water (hydrostatic test water, stormwater, produced water) will be conducted in conformance with WDEQ-Water Quality Division (WQD), BLM Onshore Oil and Gas Order No. 7, and WOGCC rules and regulations.

Channel Discharge Plans: Plans for any proposed discharge of produced water to channels on public lands will at a minimum contain provisions for the following:

The proposed discharged water will meet or exceed all state-approved standards for quality and be of equal or better quality than the proposed receiving waters at the point of confluence.

A survey and evaluation of the public land portion of the channel from the proposed point of discharge to the downstream extent of BLM-administered public lands that encompass the drainage or the confluence of the nearest perennial water with an upstream source of flow that will provide a dilution of at least 10:1 for produced water from all sources to the channel in question at the point of confluence.

The evaluation will address channel geometry and record current locations (by GPS, monumenting, photo points) and nature of key features such as vegetative communities, headcuts, depositional areas, existing wetlands, any other discharges, etc.

A certified laboratory report showing the components and quality of the water to be discharged will be provided to the BLM with sufficient time prior to initial discharge of produced water to allow for analysis. Subsequent reports will be provided to the BLM not more than 2 weeks past the date of the survey.

Channels on public lands receiving produced water discharges will be resurveyed annually at a minimum, or as requested by the AO, by the project proponent in the manner described above. The need to take corrective actions will be determined by the BLM.

Adequate design to minimize erosion at the point of discharge and to prevent channel drops (headcuts) from traveling up channel under augmented and natural flow conditions.

A method to control, in a timely manner, accelerated channel erosion. Corrective actions could include but are not limited to engineered structures, vegetation augmentation, or elimination of the discharge to the affected channel.

An acknowledgement that discharging to public lands, including discharge in an open channel, is a privilege that is revocable at any time by the AO.

The design of the discharge plan must be such that the *Wyoming Standards for Rangeland Health* are not violated.

Vegetation, land form, rocks, and/or large woody debris associated with the channel in question throughout the length of the channel as described previously shall be maintained in a condition sufficient to dissipate stream energy, filter sediment, aid groundwater recharge, aid in floodplain development, stabilize stream banks, and maintain channel characteristics.

Upland Discharge Plans: Plans for any proposed discharge of produced water onto uplands will, at a minimum, contain provisions for the following:

- An acknowledgement that the purpose of the discharge is for vegetation reclamation only
- Another avenue for the discharge of the water or the ability to immediately stop the flow
- Certification that the water meets or exceeds WDEQ standards
- Information to support analysis that application of the water to the soil will not negatively affect soil quality, including infiltration or fertility
- Information to support analysis that vegetative diversity and productivity and soil health and structure will not be negatively affected
- No surface runoff from the reclamation site
- An approved revegetation plan that includes a weed management plan
- A monitoring plan and provisions for prompt action to address errors
- A timeline to assure that irrigation efforts will be used for initial establishment of vegetation communities, not to maintain them.

Wildlife

General Wildlife

Well locations and associated road and pipeline routes will be selected and designed to avoid disturbances to areas of high wildlife value (e.g., raptor nest sites, wetland areas).

Avoid activities and facilities that create barriers to the seasonal movements of big game and livestock.

Reserve, workover, and production pits potentially hazardous to wildlife will be adequately protected (e.g., fencing, netting) to prohibit wildlife access as directed by the BLM in consultation with WGFD.

Wildlife-proof fencing will be used on reclaimed areas, in accordance with standards specified in *BLM Fencing Handbook* 1741-1, if it is determined that wildlife species are impeding successful vegetation establishment.

ROW fencing associated with this project will be kept to a minimum; if necessary, fences will consist of four-strand barbed wire meeting WGFD approval and *BLM Fencing Handbook* 1741-1 standards for facilitating wildlife movement.

For all breeding birds observed, additional surveys will be conducted immediately prior to construction activities to search for active nest sites.

To avoid potentially significant noise impacts, compressor engines will be located 2,500 feet or more from a dwelling or residence and from sage-grouse leks.

Activities in crucial habitats will be avoided when practicable.

Wildlife habitat mitigation will be carried out as quickly as possible or at the same time as the disturbance.

Locatable mineral development activities will not be allowed within identified big game parturition areas between May 1 and June 30 or within raptor nesting areas from February 1 to July 31.

Power lines will be buried or otherwise constructed or modified to reduce impacts to wildlife where possible.

Crucial wildlife winter ranges and nesting habitats could be treated with nitrogen fertilizers.

For additional wildlife mitigation measures, the Wyoming Game and Fish's document titled *Recommendations for Development of Oil and Gas Resources within Crucial and Important Wildlife Habitats* (WGFD 2004) may be consulted.

T&E and Special Status Species

If while conducting operations, substantial unanticipated environmental effects to listed, proposed, or candidate species are observed (whether effects are direct or indirect), formal consultation with U.S. Fish and Wildlife Service (USFWS) will be initiated immediately in addition to cessation of all such operations.

USFWS and WGFD consultation and coordination will be conducted for all mitigation activities relating to raptors and threatened and endangered (T&E) species and their habitats, and all permits required for movement, removal, and/or establishment of raptor nests will be pursued if they meet USFWS migratory bird office requirements.

Co-location of cell towers and other communication facilities will be encouraged to mitigate impacts within potential raptor habitat.

Areas containing open, streamside deciduous woodlands with low scrub vegetation, deciduous riparian woodlands, cottonwood stands or willow thickets must be surveyed for the Yellow-billed cuckoo. A minimum of three and a maximum of five censuses should be carried out from June 15 to August 10, with at least 12 days between successive census attempts.

Surveys for T&E and candidate wildlife species will be implemented in areas of potential habitat by a qualified biologist prior to disturbance. Findings will be reviewed by the BLM prior to or as components of ROW applications and APD review processes. If T&E and/or candidate species are found in the area, consultation with the USFWS will be initiated, and construction activities will be curtailed until there is concurrence between BLM and USFWS, on what activities can be authorized.

Proposed construction sites in the development area will be examined prior to surface-disturbing activities to confirm the presence or absence of prairie dog colonies. Confirmation will be made of white-tailed

prairie dog colony/complex size, burrow density, and any other data to indicate whether the criteria for black-footed ferret habitat, established in the USFWS guidelines, are present. If prairie dog colony/complex meets the USFWS criteria, a qualified biologist will locate all project components to avoid direct, indirect and cumulative impacts to the colony/complex. If this is not practical or possible, black-footed ferret surveys of the prairie dog colony/complex, where required by the USFWS, will be conducted in accordance with USFWS guidelines and requirements. The results of the survey will be provided to the USFWS in accordance with Section 7 of the ESA, as amended, and Interagency Cooperation Regulations. If a black-footed ferret or its sign is found during the survey, the BLM AO will stop all action on the application in hand. New roads and trails should not cross colonies.

A survey for black-footed ferret is required prior to approval of construction activities within nonblock cleared habitats.

The USFWS has determined that any withdrawal of water from the Colorado River System (surface or groundwater) will jeopardize the endangered Colorado pikeminnow, humpback chub, bonytail, and razorback sucker. The USFWS Colorado River Endangered Fish Recovery Program requires a depletion fee be paid by the proponent to help support the recovery program. The fee is required for each acre-foot of water depletion where the depletion of water is in excess of 100 acre-feet from the Colorado River system.

Operators will finance site-specific surveys for special status plant species (SSPS) prior to any surface disturbance in areas determined by the BLM to contain potential habitat for such species (Directive USDI-BLM 6840). These surveys will be completed by a qualified botanist as authorized by the BLM and this botanist will be subject to BLM's SSPS survey policy requirements. Data from these surveys will be provided to the BLM, and if any SSPS or habitats are found, BLM recommendations for avoidance or mitigation will be implemented.

Areas containing moist soils in mesic or wet meadows, subirrigated or seasonally flooded soils in valley bottoms, gravel bars, old oxbows, or floodplains bordering springs, lakes, rivers or perennial streams between 1,780 and 6,800 feet in elevation must be avoided for Ute ladies' tresses.

Migratory Birds

Bald eagles roost, perch, feed, and nest along the Green and New Fork Rivers. To ensure continued protection of this species, no surface disturbing or human activities will be authorized between November 1 and April 1 within 1 mile of known bald eagle winter use areas. All surface-disturbing or human activity, including construction of roads, pipelines, well pads, drilling, completion, or workover operations, will be seasonally restricted from February 1 through August 15 within 1.0 mile of all active eagle nests. An active eagle nest is one that has been occupied once in the past 5 years.

Permanent (life of the project) and high profile structures such as well locations, roads, buildings, storage tanks, overhead power lines, etc., and other structures requiring repeated human presence will not be constructed within 1,000 feet (1,400 feet for ferruginous hawks; 2,600 feet for bald eagles) of active raptor nests. Wells that must be located closer than 2,600 feet (but will not be allowed closer than 2,000 feet) of a bald eagle nest will be out of the direct line of sight of the nest; will have no human activity at the well site from February 1 through August 15 except in the case of an emergency; and will locate production facilities off-site or at a central production facility location at a distance of 2,600 feet or more from the nest. In these cases, the USFWS will be contacted to ensure compliance under the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

All surface-disturbing activity (e.g., road, pipeline, well pad construction, drilling, completion, workover operations) will be seasonally restricted from February 1 through July 31 within a 0.5-mile radius of all active raptor nests, except that ferruginous hawk nests will be seasonally restricted from March 1 through July 31 and the seasonal buffer will be 1.0 mile. An active raptor nest is defined as a nest that has been occupied within the past 3 years. The seasonal buffer distance and exclusion dates applicable may vary depending on such factors as the activity status of the nest, species involved, prey availability, natural topographic barriers, line-of-site distance(s), and other conflicting issues such as cultural values, steep slopes, etc.

Raptor nest surveys will be conducted for active nests within a 0.5- to 1.0-mile radius of proposed surface use or activity areas if such activities are proposed to be conducted between February 1 and July 31 or as required in the Pinedale Field Office raptor survey protocol.

The buffer distance for raptors may vary depending on the species involved, prey availability, natural topographic barriers, line-of-sight distances, and other conflicting issues (e.g., cultural values, steep slopes). Linear disturbances such as pipelines and seismic activity could be granted exceptions as long as they will not adversely affect the raptor(s).

Surface disturbing and human activities are not allowed between November 1 and April 1 within one mile of known bald eagle winter use areas.

Surface disturbing and human activities within one mile of an active bald eagle nest will be restricted from February 1 to August 15.

Activities or surface use are not allowed from March 15 to August 15 for the protection of migratory bird nests in accordance with the Migratory Bird Treaty Act. A nest survey must be conducted prior to construction from March 15 to August 15. If a nest is present and active, monitoring will need to be done until the young have fledged. Contact a BLM wildlife biologist prior to conducting nest surveys.

Habitat alterations within 2.5 miles of a bald eagle nest, or 0.5 miles from the stream bank of all streams within 2.5 miles of the nest, will be restricted to protect bald eagle foraging/concentration areas year-round.

Surface disturbing and disruptive activities will be prohibited within 0.5 miles of burrowing owl nesting habitat from April 1 through August 15.

For surface disturbing activities, surveys will be conducted within suitable plover habitat by a qualified biologist in accordance with USFWS 1999 guidelines. (A copy of the guidelines may be obtained from the USFWS, BLM, or WGFD). Two types of surveys may be conducted: 1) surveys to determine the presence/absence of breeding plovers (i.e., displaying males and foraging adults), or 2) surveys to determine nest density.

If surface disturbing activity is requested to take place in mountain plover habitat between April 10 and July 10, presence/absence surveys are required. Survey results will determine when activities are proposed.

Surveys to determine presence/absence of the plover will be conduct between April 10 through July 10 throughout the breeding range.

Visual observation of the area should be made within 0.25 mile of the proposed action to detect the presence of plovers.

A site must be surveyed for plover three times during the survey window, with each survey separated by at least 14 days.

Initiation of the project should occur as near to completion of the plover survey as possible (within 2 days for seismic exploration; a 14-day period may be appropriate for other projects.

If active plover nest is found in the survey area, the planned activity should be delayed 37 days, or one week post-hatching. If a brood of flightless chicks is observed, activities should be delayed at least 7 days.

Plover surveys will be conducted during early courtship and territorial establishment. Throughout the breeding range, this period extends from approximately mid-April through early July. However, the specific breeding period depends on latitude, elevation, and weather.

Plover surveys will be conducted between local sunrise and 10:00 a.m., and between 5:30 p.m. and sunset (periods of horizontal light to facilitate spotting the white breast of the adult plovers).

Drive transects within the project area to minimize early flushing. Flushing distances for mountain plovers may be within 3 meters (9 to 10 feet) for vehicles, but plovers often flush at 50 to 100 meters (164 to 328 feet) when approached by humans on foot.

In cases where an exception will be provided to the proponent during the April 10 to July 10 breeding and nesting time period, BLM personnel will adhere to approved protocols describing survey protocol for exceptions.

To control the population of mosquitos that might spread West Nile virus, larvicidal briquettes will be placed in standing water pools as appropriate. Adult mosquitos could also be treated with insecticides if necessary.

Greater Sage-Grouse

No surface disturbance within one-quarter mile of an occupied greater sage-grouse lek will be permitted. Linear disturbances such as pipelines and seismic activity could be granted exceptions outside the breeding season if they are determined not to have associated long-term, continuous activity that could impact breeding success.

Permanent, high-profile structures such as buildings and storage tanks will not be constructed within 0.25 mile of an occupied greater sage-grouse lek.

In selecting a site for a compressor facility, a well pad or other permanent facility, the distance from the edge of a an occupied greater sage-grouse lek will be sufficient to result in a noise level increase from operating facilities no greater than 10 decibels (dBA) above background (i.e., 39 dBA background + 10 dBA = 49 dBA). Further restrictions may be required if the species is determined by the USFWS to be eligible for listing as either threatened or endangered pursuant to the Endangered Species Act. Monitoring will be required by BLM to determine which leks in the PAPA are occupied and which have been abandoned.

If existing information is not current, field evaluations for greater sage-grouse leks and/or nests will be conducted by a qualified biologist prior to the start of activities in potential greater sage-grouse habitat. These field evaluations for leks and/or nests will be conducted if project activities are planned in potential greater sage-grouse habitat between March 15 and July 15. BLM wildlife biologists will ensure that such surveys are conducted using proper survey methods.

Operators will be required to apply noise mitigation at well locations, as determined necessary by the BLM AO, on a case-by-case basis.

Wyoming Executive Order 2008-2, and the Wyoming Stipulations for Development in Core Sage-Grouse Population Areas, will be considered when permitting activities.

Sagebrush Habitats

These guidelines (Bohne et al. 2007) include an approach to identify sage-grouse issues in landscape scale assessments, proposed habitat project planning and implementation and to build a safety net into the process to maintain or enhance sage-grouse populations. This is an approach that can be used to identify sage-grouse habitat issues and resolve conflicts in the development of vegetative treatment prescriptions, and it should be an integral part of the NEPA process where appropriate. The Wyoming Guidelines for Managing Sagebrush Communities with an Emphasis on Fire Management (Wyoming Interagency Vegetation Committee 2002:12) provides a list of nine decision elements that should be considered when evaluating a potential sagebrush treatment. In addition to those nine elements, assessing the need for a vegetation treatment involves a general assessment of the landscape and its use by sage-grouse. The following evaluation criteria should also be considered when developing vegetation treatments in occupied sage-grouse habitat:

1) Determine if sage-grouse (or other species of interest) seasonal habitats are present, the condition of these habitats, and the relative level of importance of these habitats. In the case of sage-grouse, it is important to know whether the population is resident or migratory when evaluating potential habitats affected by proposed actions.

2) Identify how much of the sage-grouse habitat in the area has been impacted previously by fire (prescribed or wild), other habitat conversions, habitat losses, or fragmentation, preferably using a GIS-based analysis.

3) Determine how much of the area is likely to burn in future wildfire and at what scale (a risk assessment).

4) Identify the short-term (1–14 years) and mid-term effects (15–30 years) of prescribed fires or other treatments on vegetation and key wildlife species.

5) Assess the presence of undesirable plant species (e.g., cheatgrass, invasive noxious weeds, rabbitbrush, juniper and other conifer invasion) and the risk of these species increasing under current management and/or as a result of the proposed treatment.

6) Determine the likely response of desirable species of vegetation that are present to the type and intensity of treatment being proposed.

7) Provide a clear statement of the intended objectives of the prescribed treatment, provide a rational for the treatment, and identify impacts to sage-grouse and other species of interest as part of the management prescription and environmental assessment.

8) Establish overall goals along with measurable objectives and an adequate monitoring plan (adequate in terms of funding as well as quantifying the effects of treatment).

9) Identify mitigation measures (if any) needed to offset potential adverse impacts on sage-grouse habitat.

10) Develop a post treatment management plan that will ensure desired vegetative responses can be achieved and maintained.

No sagebrush control work should occur where live sagebrush cover is less than 20% (Bohne 2007).

If the herbaceous understory is depleted (reduced number of grass and forb species present), providing limited or inadequate cover, and the shrub canopy is too dense, then some vegetative treatment may be needed to restore the stand to its potential productivity and value for sage-grouse and other wildlife species. In this situation, the guidelines recommend treating no more than 20% of nesting and early brood-rearing habitat (Bohne 2007).

Sagebrush restoration techniques should be considered in areas in which sagebrush has been removed or severely fragmented by past management practices. If 40% or more of the breeding habitat of a population or subpopulation has been lost, the guidelines by Connelly et al. (2000) recommend that the remaining habitat should be protected from additional loss or degradation. In these situations, sagebrush restoration should be the priority land treatment to restore suitable shrub densities and understory vegetation to provide effective sage-grouse habitat (Bohne 2007).

Reclamation

All disturbances will be limited to the minimum necessary to enable production of the resource.

All disturbances will be returned to the approximate predisturbance contour of the land.

Predisturbance land use will be returned to the maximum extent practicable.

Where approved disturbance prohibits maintenance of use, offsite mitigation could be considered.

Reclamation will be designed to restore the affected lands to predisturbance land uses once a project is completed. While surface-disturbing or disruptive activities continue, land uses will be mitigated using revegetation, stabilization, erosion control, and habitat enhancement.

Experimental methods to maintain or reclaim wildlife habitat or improve reclamation science are encouraged to be tested on small areas within the planning area. When scientifically proven effective for a reclamation objective, these methods may be incorporated into proven reclamation methods.

All reclamation of disturbed lands will be conducted with a diverse mix of noninvasive, certified weed-free seed demonstrated effective for post-disturbance land uses and approved by the AO. In designated crucial and important wildlife habitats, this seed mix should be designed to restore predisturbance wildlife use.

A site-specific reclamation plan should be prepared for each well pad, pipeline, road, or other surface disturbing activities prior to authorization and should include the following:

- Top soil storage techniques
- Description of native vegetation disturbed, including species and composition
- Need to collect native seed
- Need for irrigation and fertilization
- Need for fencing
- Proposed recontouring plans and seeding/planning procedures
- Definition of success

- Plans for reseeding if reclamation fails.

BLM will require each individual right-of-way, APD, or other application to include a reclamation plan approved by the BLM.

Site Stabilization

On existing well pads that are not be fully developed by the second winter following construction, all bare ground will have at least a 75-percent protective cover that may include but not be limited to organic mulch, herbaceous vegetation, jute matting, or other erosion-preventative fabric. Protective cover may be excluded on active work sites (up to the wellhead with production equipment) if justified by the operator and with BLM concurrence.

During the period when an existing well pad is not being fully developed, there will be no sediment discharge from the existing pad. Operators will modify all existing well pads to achieve zero sediment discharge for a 25-year storm or snowmelt event.

Access road(s) leading to the temporarily stabilized well pad will have protective cover to the same levels required on the well pad.

Disturbed channel beds will be reshaped to their approximate original configuration.

Streams, wetlands, and riparian areas disturbed during project construction will be restored to as near pre-project conditions as practical, and if impermeable soils contributed to wetland formation, soils will be compacted to reestablish impermeability.

Areas will be recontoured and BLM-approved species will be used for reclamation.

Reclamation activities will begin on disturbed wetland areas immediately after completion of project activities.

Upon completion of construction and/or production activities, operators will restore the topography to near preexisting contours at well sites, access roads, pipelines, and other facility sites.

All roads on federal lands not required for routine operation and maintenance of producing wells, ancillary facilities, livestock grazing administration, or necessary recreation access will be reclaimed as directed by the BLM. These roads will be permanently blocked, recontoured, reclaimed, and revegetated by the operators, as will disturbed areas associated with permanently plugged and abandoned wells.

Disturbances should be reclaimed or managed for zero sediment discharge. All excavations and pits should be closed by backfilling and contouring to conform to surrounding terrain. On well pads and larger locations, the surface use plan will include objectives for successful reclamation such as soil stabilization, plant community composition, and desired vegetation density and diversity.

On producing locations, operators will be required to reduce slopes to original contours (not to exceed 3:1 slopes). Areas not used for production purposes will be backfilled and blended into the surrounding terrain, reseeded, and erosion control measures installed. Erosion control measures will be required after slope reduction. Facilities will be required to approach zero runoff from the location to avoid contamination and water quality degradation downstream. Mulching, erosion control measures, and fertilization may be required to achieve acceptable stabilization.

Abandoned sites must be satisfactorily rehabilitated in accordance with a plan approved by the BLM. Soil samples may be analyzed to determine reclamation potential, appropriate reseeding species, and nutrient deficits. Tests may include pH, mechanical analysis, electrical conductivity, and sodium content. Terraces or elongated water breaks will be constructed after slope reduction.

All reclamation is expected to be accomplished as soon as possible after the disturbance occurs with efforts continuing until a satisfactory revegetation cover is established and the site is stabilized (3 to 5 years). Only areas needed for construction will be allowed to be disturbed.

On all areas to be reclaimed, seed mixtures will be required to be site specific and composed of native species. Seed mixtures also will be required to include species promoting soil stability. A predisturbance species composition list must be developed for each site if the project encompasses an area in which several different plant communities present. Livestock palatability and wildlife habitat needs will be given consideration in seed mix formulation. BLM guidance for native seed use is BLM Manual 1745 (Introduction, Transplant, Augmentation, and Reestablishment of Fish, Wildlife, and Plants), and Executive Order No. 11987 (Exotic Organisms).

If deemed necessary, approved sterile seed mix could be considered for use in site stabilization during reclamation.

Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives. During rehabilitation of areas in important wildlife habitat, provision will be made for the establishment of native browse and forb species, if determined to be beneficial for the habitat affected. Follow-up seeding or corrective erosion control measures may be required on areas of surface disturbance which experience reclamation failure.

Any mulch and mineral material (sand and gravel) used will be certified weed free and free from mold or fungi. Mulch may include native hay, small grain straw, wood fiber, live mulch, cotton, jute, synthetic netting, and rock. Straw mulch should contain fibers long enough to facilitate crimping and provide the greatest cover.

Noxious Weeds

Operators will monitor noxious weed occurrence on the project area and implement a noxious weed control program in cooperation with the BLM and Sublette County to ensure noxious weed invasion does not become a problem. Weed-free certification by county extension agents will be required for grain or straw used for mulching revegetated areas. Gravel and other surfacing materials used for the project will be free of noxious weeds.

The operator, grantee, or lessee will be responsible for the control of all noxious weed infestations on surface disturbances. Prior to any treatment, the operator, grantee, or lessee will be responsible for submission of Pesticide Use Proposals and subsequent Pesticide Use Reports. Control measures will adhere to those allowed in the *Final Vegetation Treatments Using Herbicides on BLM in 17 Western States Programmatic EIS* (June 2007) and ROD (September 2007), *Rock Springs District Noxious Weed Control EA* (USDI 1982a), or the *Regional Northwest Area Noxious Weed Control Program EIS* (USDI 1987). Herbicide approvals and treatments will be monitored by the BLM AO. Herbicide applications will be kept at least 500 feet from known SSPS populations. Aerial application of chemicals is prohibited within one-quarter mile of special status plant locations, or other distance deemed safe by the BLM AO.

Hazardous Waste Disposal

Operators will use WDEQ-approved portable sanitation facilities at drill sites; place warning signs near hazardous areas and along roadways; place dumpsters at each construction site to collect and store garbage and refuse; ensure that all refuse and garbage is transported to a state-approved sanitary landfill for disposal; and institute a Hazard Communication Program for its employees and require subcontractor programs in accordance with OSHA (29 CFR 1910.1200).

In accordance with 29 CFR 1910.1200, a Material Safety Data Sheet for every chemical or hazardous material brought on-site will be kept on file at the operator's field office.

Chemical and hazardous materials will be inventoried and reported in accordance with the SARA Title III (40 CFR 335). If quantities exceeding 10,000 pounds or the threshold planning quantity are to be produced or stored, the appropriate Section 311 and 312 forms will be submitted at the required times to the State and County Emergency Management Coordinators and the local fire departments.

Any hazardous wastes, as defined by the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, will be transported and/or disposed of in accordance with all applicable federal, state, and local regulations.

Owners or operators of onshore facilities (any facility of any kind, or drilling or workover rigs), which because of their location could be reasonably expected to discharge oil in harmful quantities (as defined in 40 CFR part 110 and 112.3) into or upon navigable waters of the United States or adjoining shorelines, will prepare a Spill Prevention Control and Countermeasure Plan (SPCC Plan) in accordance with 40 CFR 112.7. Owners or operators of drilling or workover rigs need not prepare a new SPCC Plan each time the facility is moved to a new site. The SPCC Plan may be a general plan, using good engineering practices (40 CFR 112.3 (a), (b), and (c)). Owners or operators of a facility for which an SPCC Plan is required will maintain a complete copy of the SPCC Plan at such facility if the facility is normally attended at least 8 hours per day, or at the nearest field office if the facility is not so attended (40 CFR 112.3(e)).

SPCC Plans will be implemented and adhered to in a manner such that any spill or accidental discharge of oil will be remediated. An orientation should be conducted by the operators to ensure that project personnel are aware of the potential impacts that can result from accidental spills and that they know the appropriate recourse if a spill occurs. Where applicable and/or required by law, streams at pipeline crossings will be protected from contamination by pipeline shutoff valves or other systems capable of minimizing accidental discharge. If reserve pit leakage is detected, operations at the site will be curtailed, as directed by the BLM, until the leakage is corrected.

All natural gas wells will be cased and cemented to protect subsurface mineral and freshwater zones. Unproductive wells and wells that have completed their intended purpose will be properly abandoned and plugged using procedures identified by the Office of State Oil and Gas Supervisor, Rules and Regulations of WOGCC and the BLM.