S O C O R R O

Proposed Resource Management Plan and Final Environmental Impact Statement

BLM - Socorro Field Office

U.S. Department of the Interior

Appendices

December 2008

BUREAU OF LAND MANAGEMENT

The Bureau of Land Management is responsible for the balanced management of the public lands and resources and their values so that they are considered in a combination of multiple use and sustained yield, a combination of uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources. These resources include recreation, range, timber, minerals, watershed, fish and wildlife, wilderness and natural, scenic, scientific and cultural values.

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Appendix A

Planning Criteria

APPENDIX A
PLANNING CRITERIA

GENERAL PLANNING CRITERIA

The following general planning criteria have guided the preparation of this Resource Management Plan Revision/Environmental Impact Statement and will continue to guide land use decisions made in the future.

- Apply the principles of multiple use and sustained yield as set forth in the Federal Land Policy and Management Act and other applicable laws.
- Use a systematic, interdisciplinary approach to achieve integrated consideration of physical, biological, economic, social, and environmental aspects of public land management.
- Give priority to the identification, designation, protection, and special management of areas of critical environmental concern.
- Consider the relative significance of the public land products, services, and uses to local economies.
- Rely on available inventories of the public lands, their resources, and other values with updating the inventory to the extent necessary to reach sound management decisions.
- Consider present and potential uses of the public lands.
- Consider impacts of uses on adjacent or nearby non-Federal lands and on nonpublic land surface over federally owned minerals.
- Consider the relative scarcity of the values involved and the availability of alternative means (including recycling) and sites for realization of those values.
- Weigh long-term benefits and detriments against short-term benefits and detriments.
- Comply fully with applicable pollution control laws, regulations, and policies, including State and Federal air, water, noise, or other pollution standards or implementation plans.
- Coordinate Bureau of Land Management (BLM) resource inventory, planning, and management activities with the resource planning and management programs of other Federal departments and agencies, State and local governments, and Native American Tribes to the extent consistent with the laws governing the administration of the public lands.
- Provide for public involvement including early notice and frequent opportunity for citizens and interested groups and others including Native American Tribes to participate in and comment on the preparation of plans and related guidance.
- Comply fully with all Federal laws that guide management of specific resources such as the Endangered Species Act, Clean Water Act, National Historic Preservation Act, Taylor Grazing Act, and others.
- Comply fully with the BLM national policy on special status species that states “BLM shall carry out management consistent with the principles of multiple use, for the conservation of candidate (and sensitive) species and their habitats and shall ensure that actions authorized, funded, or carried out do not contribute to the need to list any of these species as threatened or endangered.” (BLM 6840 Manual)

- Reflect Federal land management agency obligations under applicable Tribal treaties and laws or executive orders relating to Native American reserved rights, religious freedoms, traditional use areas, etc.
- Comply with EO 13443 – Facilitation of Hunting Heritage and Wildlife Conservation.

PLANNING CRITERIA SPECIFIC TO RESOLVING THE ISSUES FOR THE RESOURCE MANAGEMENT PLAN REVISION/ENVIRONMENTAL IMPACT STATEMENT

As noted in Chapter 1, six issues have been identified that need to be resolved through the planning process. In addition to the general planning criteria identified above, other specific planning criteria have been developed to aid in resolving the issues. These criteria are described below and are the standards that BLM will consider in developing resolutions to the issues.

Issue 1. Which areas if any should be designated for special management, what designations should apply (areas of critical environmental concern, special management areas, or other), and how should they be managed?

To resolve this issue, BLM will consider:

- Resource to be managed
- Manageability of the areas
- Existing areas of critical environmental concern representation
- Current and potential land uses
- Effects of designation on other resources and uses
- Effects of nondesignation on resources
- Social and economic effects
- Public interests and attitudes
- Consistency of designation with resource plans of other agencies, local government, or Tribes
- Long-term versus short-term benefit
- Public health and safety

Issue 2. What type of management should be undertaken at the watershed level to reduce erosion, improve surface water quality, maintain and improve vegetation, and reduce non-point source pollution?

To resolve this issue, BLM will consider:

- Watershed condition and trend and productivity potential
- Resource values
- Current and potential land uses
- Social and economic effects
- Public interests and attitudes

- Condition and trend of native plant communities
- Presence of special status species, both plants and animals
- Need for increased vegetation cover to reduce soil erosion, increase livestock forage, improve wildlife habitat and improve water quality
- Habitat fragmentation/connectivity for all wildlife species
- Use of land treatments to maintain or improve plant communities
- Maintenance or enhancement of biological diversity
- Presence of noxious weeds and conflicts between exotic and native species
- Input from the scientific community

Issue 3. How should potential energy, fluid, and solid mineral development in the Planning Area be managed?

To resolve this issue, BLM will consider:

- Resource values
- Current and potential land uses
- Social and economic effects
- Public interests and attitudes
- National energy policy
- Potential for alternative energy sources
- Input from the scientific community
- Reasonable foreseeable development of the resource
- Effects on other resources
- Habitat fragmentation/connectivity for all wildlife species
- Presence of special status species, both plant and animal and their habitats

Issue 4: How should travel and transportation including motorized vehicle use, off-highway vehicles, mountain biking, hiking, horseback riding, and others be managed to satisfy public demand while protecting the natural values of the public land?

To resolve this issue, BLM will consider:

- Existing route network and designations
- Public demand for additional activities and locations
- Compatibility with adjacent land uses and resources
- Effects of vehicle uses on other resources and uses
- Public health and safety
- Social and economic effects

- Public access to public land
- Needs of other resource uses
- Route designation and closure criteria (as described in Appendix J)

Issue 5: What land use allocations or lands and realty program initiatives need to be addressed in the plan to accommodate the effective management and support of other resource programs within the area?

To resolve this issue, BLM will consider:

- Current and future uses of public land
- Social and economic effects
- Public interest and attitudes
- Compatibility of adjacent land uses and resources
- Public access to public lands
- Long-term versus short-term benefit

Issue 6: How should BLM best pursue cultural and recreational initiatives to provide the public with quality tourism and cultural heritage tourism opportunities?

To resolve this issue, BLM will consider:

- Current and future uses of public land
- Public interest and attitudes
- Social and economic effects
- Public access to public lands
- Local community and Tribal needs and interests
- Input from the scientific community
- Opportunities for local partnerships
- Long-term versus short-term benefit
- Site hardening and vulnerability to effects from visitation

PLANNING CRITERIA FOR SELECTING THE PROPOSED ALTERNATIVE

In selecting the preferred alternative and the Resource Management Plan, BLM considered:

- The degree of progress towards the identified management goals and resolution of issues
- The discretionary limits established through applicable laws, regulations, and agency policies
- Reasonable, feasible, and practical guidance for managing public lands and resources through a full range of options
- Adequacy for a complete land use plan

Appendix B

Acts of Authority and Mandates for the BLM

APPENDIX B
ACTS OF AUTHORITY AND MANDATES FOR THE BLM

A number of Federal statutes have been enacted over time to establish and define the authority of the Bureau of Land Management (BLM) to make decisions on the management and use of resources on public land. Following is a list of major legal authorities relevant to BLM land use planning.

Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 United States Code [U.S.C.] 1701 et seq.) provides the authority for BLM land use planning. This statute and its implementing regulations define principles for the management of public land and its resources. This Act directs the Secretary of the Interior to develop, maintain, and, when appropriate, revise land use plans that provide for the use of public land managed on the basis of multiple use and sustained yield unless otherwise specified by law. Through FLPMA, BLM is responsible for the balanced management of the public land and resources and their various values. FLPMA specifically states that public land will be managed under the principles of multiple use, and, further, indicates that multiple use includes harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment.

Section 102 (a) (7) and (8) sets forth the policy of the United States concerning the management of BLM lands.

Section 201 requires the Secretary to prepare and maintain an inventory of all BLM lands and their resource and other values, giving priority to areas of critical environmental concern, and, as funding and workforce are available, to determine the boundaries of the public lands, provide signs and maps to the public, and provide inventory data to state and local governments.

Section 202 (a) requires the Secretary, with public involvement, to develop, maintain, and when appropriate, revise land use plans that provide by tracts or areas for the use of the BLM lands.

Section 202 (c) (9) requires that land use plans for BLM lands be consistent with Tribal plans and, to the maximum extent consistent with applicable Federal laws, with State and local plans.

Section 202 (d) provides that all public lands, regardless of classification, are subject to inclusion in land use plans, and that the Secretary may modify or terminate classifications consistent with land use plans.

Section 202 (f) and 309 (e) provide that Federal, State, and local governments and the public be given adequate notice and an opportunity to comment on the formulation of standards and criteria for, and to participate in, the preparation and execution of plans and programs for the management of the public lands.

Section 302 (a) requires the Secretary to manage BLM lands under the principles of multiple use and sustained yield, in accordance with, when available, land use plans developed under Section 202 of FLPMA, except that where a tract of BLM lands has been dedicated to specific uses according to any other provisions of law, it shall be managed in accordance with such laws.

Section 302 (b) recognizes the entry and development rights of mining claimants, while directing the Secretary to prevent unnecessary or undue degradation of the public lands.

Section 603 specifically directs BLM to carry out a wilderness review of public land and directs the BLM to manage such lands in a manner so as not to impair the suitability of such areas for preservation as wilderness.

The National Environment Policy Act of 1969, as amended (42 U.S.C. 4321 et seq.) requires the consideration and public availability of information regarding the environmental impacts of major Federal actions significantly affecting the quality of the human environment. The law further requires the Federal Authorized Officers to identify and describe the significant environmental issues associated with their decisions and to develop alternatives to a proposed action (including the alternative of no action). Federal Authorized Officers must disclose the direct, indirect, and cumulative effects of the decisions; adverse environmental effects that cannot be avoided; the relationship between short-term uses of the human environment and the maintenance of long-term productivity; and any irreversible or irretrievable commitments of resources made by the decision.

The Clean Air Act of 1990, as amended (42 U.S.C. 7418) requires Federal agencies to comply with all Federal, state, and local requirements regarding the control and abatement of air pollution. This includes abiding by the requirements of state implementation plans. The Clean Air Act provides that each state is responsible for ensuring achievement and maintenance of air quality standards within its borders so long as such standards are at least as stringent as Federal standards established by the U.S. Environmental Protection Agency.

The Clean Water Act (CWA) of 1987, as amended (33 U.S.C. 1251) establishes objectives to restore and maintain the chemical, physical, and biological integrity of the Nation's water. Upon passage of the Environmental Quality Acts and adoption of the water quality standards, State agencies were empowered to enforce water quality standards as long as they are at least as stringent as the Federal standards established by the Environmental Protection Agency. The State of New Mexico has not been delegated authority from the Federal Government for any of the major water quality programs under the CWA, including the National Pollutant Discharge Elimination System, Pretreatment, Sludge Management, and Wetlands. Also, Section 404 of the CWA, administered by the U.S. Army Corps of Engineers, requires that "waters of the U.S." be protected by permits prior to dredge or fill activities occurring in such areas. Waters include intermittent streams, mud flats, and sand flats. Wetlands that meet jurisdictional criteria of Section 404 of the CWA are partially protected in that a permit is required prior to any dredge or fill activity occurring in such areas.

The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) provides a means whereby the ecosystems upon which threatened and endangered species depend may be conserved and to provide a program for the conservation of such threatened and endangered species (section 1531 (b), Purposes). The ESA requires all Federal agencies to seek to conserve threatened and endangered species, utilize applicable authorities in furtherance of the purposes of the ESA (Sec. 1531 (c) (1), Policy), and avoid jeopardizing the continued existence of any species that is listed or proposed for listing as threatened and endangered or destroying or adversely modifying its designated or proposed critical habitat (Sec. 1536 (a), Interagency Cooperation). The U.S. Fish and Wildlife Service (USFWS) is responsible for administration of this Act, which also requires all Federal agencies to consult (or confer) in accordance with Section 7 of the ESA with the Secretary of the Interior, through the USFWS and/or the National Marine Fisheries Service, to ensure that any Federal action (including land use plans) or activity is not likely to jeopardize the continued existence of any species listed or proposed to be listed under the provisions of the ESA, or result in the destruction or adverse modification of designated or proposed critical habitat (Sec. 1536 (a), Interagency Cooperation, and 50 Code of Federal Regulation [CFR] 402). Mitigation measures are developed through the consultation process and are put forth as suggested conservation measures included in a formal USFWS Biological Opinion, which addresses whether the

proposed action would jeopardize the continued existence of any officially listed endangered or threatened species.

BLM Handbook H-1601-1, *Land Use Planning Handbook*, provides supplemental guidance for implementing the BLM land use planning requirements established by Sections 201 and 202 of FLPMA and the regulations in 43 CFR 1600. The handbook provides guidance for preparing and amending land use plan decisions through the planning process, and for maintaining resource management plans. The handbook also provides guidance for developing implementation plans and program-specific and resource-specific decisions.

The Statewide Resource Management Plan Amendment/Environmental Impact Statement for *New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management* (Standards and Guidelines) established a set of standards and guidelines for public land health and guidelines for livestock grazing management in New Mexico. Standards of land health are expressions of physical and biological conditions or degree of function required for healthy and sustainable lands, and define minimum resource conditions that must be achieved. Standards describe conditions needed for healthy sustainable public rangelands and relate to all uses of public land. They provide the measure of resource quality and functioning condition by which the health of public lands will be assessed. In order to measure the effectiveness of each standard, a set of measurable indicators and associated criteria were identified. Specific standards and indicators are defined for upland sites, biotic communities (including native, threatened, endangered, and special status species), and riparian sites.

Guidelines are practices, methods, or techniques determined to be appropriate to ensure that standards can be met or that significant progress can be made toward meeting those standards. Guidelines are tools such as grazing systems, vegetative treatments, or improvement projects that help managers and permittees achieve standards. Guidelines for livestock grazing are described in the Standards and Guidelines. The livestock grazing guidelines were designed to improve public land health and are to be implemented at the watershed, allotment, or pasture level if it is determined that the standards are not being met, and livestock grazing is the cause. Guidelines for activities other than livestock grazing are not mandated through regulation; however, they may be developed should the need arise. If it is determined that the standards are not being met as a result of another activity (i.e., road placement, recreation, etc.), program leads would determine appropriate actions to ensure that standards can be met or that significant progress can be made toward meeting those standards.

The *Socorro East Grazing* Environmental Impact Statement (BLM 1979) established a grazing management and implementation program for the Socorro District Office based on growth requirements for vegetation. Objectives for a 20-year period are to enhance the vegetative resource, improve range conditions, reduce erosion and sedimentation drainage, improve water quality, provide quality habitat for wildlife and wild horses, improve the recreation and visual resources, provide a continuous supply of livestock forage, and protect archaeological and historical sites. These objectives are taken into account in the development of each Allotment Management Plan (AMP). Each AMP may be reviewed at the BLM Socorro District Office.

The *West Socorro Rangeland Management Program* Environmental Impact Statement (BLM 1982) established a grazing management and implementation program for the Divide Planning Area located in Catron, Cibola, Valencia, and Socorro Counties. This program would implement specific management actions on 187 grazing allotments within six categories, designed to improve and maintain rangeland conditions, enhance vegetative resources, provide a sustained yield of livestock forage, quality habitat for wildlife, reduce soil erosion, and improve water quality.

The Federal Water Pollution Control Act (33 U.S.C. 1323) requires the Federal land manager to comply with all Federal, State, and local requirements, administrative authority, process, and sanctions regarding the control and abatement of water pollution in the same manner and to the same extent as any nongovernmental entity.

The Safe Drinking Water Act (42 U.S.C. 201) is designed to make the Nation's waters "drinkable" as well as "swimmable." Amendments in 1996 established a direct connection between safe drinking water and watershed protection and management.

The Resource Conservation and Recovery Act of 1976 (Public Law [P.L.] 89-72) gave the Environmental Protection Agency the authority to control hazardous waste from "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. The Act also set forth a framework for the management of non-hazardous wastes.

The National Trails System Act of 1968, as amended (16 U.S.C. 1241-1249) provides that the establishment of National Recreation and National Scenic Trails would closely follow original routes of national historic significance and national scenic trails, including the Continental Divide National Scenic Trail, that would provide for maximum outdoor recreation potential. The purpose of the Act is to provide for the ever-increasing outdoor recreation needs of an expanding population and to promote the preservation of public access to, travel within, and enjoyment and appreciation of the open-air, outdoor areas, and historic resources of the Nation.

The Wild and Scenic Rivers Act, as amended (16 U.S.C. 1271 et seq.) requires the Federal land management agencies to identify potential river systems and then study them for potential designation as wild, scenic, or recreational rivers.

The Wilderness Act, as amended (16 U.S.C. 1131 et seq.) authorizes the President to make recommendations to the Congress for Federal lands to be set aside for preservation as wilderness.

The Antiquities Act of 1906 (16 U.S.C. 431-433) protects cultural and paleontological resources on Federal lands and authorizes the President to designate national monuments on Federal lands.

The Archaeological Resources Protection Act of 1979 (16 U.S.C 470) secures, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before October 31, 1979.

The National Historic Preservation Act, as amended (16 U.S.C. 470) expands protection of historic and archaeological properties to include those of national, state, and local significance and directs Federal agencies to consider the effects of proposed actions on properties eligible for or included in the National Register of Historic Places. The Act mandates that when Federal undertakings (i.e., Federal projects or Federally funded or licensed projects) are planned and implemented, the responsible Federal agencies give due consideration to historic properties (i.e., resources eligible for the National Register of Historic Places), regardless of land status. Regulations for *Protection of Historic Properties* (36 CFR Part 800) define a process for demonstrating such consideration by consulting with the State Historic Preservation Officers, Federal Advisory Council on Historic Preservation, and other interested organizations and individuals.

The American Indian Religious Freedom Act of 1978 (42 U.S.C. 1996) establishes a national policy to protect and preserve the right of American Indians to exercise traditional Indian religious beliefs or practices.

The Historic Sites Act of 1935 (16 U.S.C. §461-467) defines a national policy to identify and preserve historic sites, buildings, objects, and antiquities of national significance. The law authorizes the Secretary of the Interior to conduct surveys, collect and preserve data, and acquire historic and archaeological sites.

The Archaeological and Historic Preservation Act of 1974 (16 U.S.C. §§469-469c) provides for preservation of archaeological and historical information that might otherwise be lost as a result of Federal construction projects and other Federally licensed activities and programs. This Act stipulates that up to one percent of the funding appropriated by Congress for Federal undertakings can be spent to recover, preserve, and protect archaeological and historical data. A subsequent amendment authorized the one percent limit to be administratively exceeded under certain circumstances.

The Native American Grave Protection and Repatriation Act of 1990 (25 U.S.C. §§3001-3013) protects the human remains of indigenous peoples and funerary objects, sacred objects, and items of cultural patrimony on Federal lands. The Act also provides for the repatriation of such remains and cultural items previously collected from Federal lands and in the possession or control of a Federal agency or Federally funded repository.

The Curation of Federally Owned and Administered Archaeological Collections (36 CFR Part 79) stipulates standards for facilities that curate Federally owned archaeological collections, which include not only artifacts but also all associated records and reports, in order to ensure long-term preservation of such collections.

The White House Memorandum on Government-to-Government Relations with Native American Tribal Governments of 1994 set forth guidelines requiring Federal agencies to adhere to directives designed to ensure that the rights of sovereign tribal governments are fully respected

The Tribal Forest Protection Act of 2004 (P.L. 108-278) authorizes the Secretary of the Interior (with respect to land under the jurisdiction of the BLM) or the Secretary of Agriculture (with respect to land under the jurisdiction of the Forest Service), within 120 days after the request of an Indian tribe to enter into an agreement or contract to carry out a project to protect Indian forest land or rangeland (including a project to restore Federal land that borders on or is adjacent to such land) that meets specified criteria, to issue public notice of initiation of any necessary environmental review or of the potential of entering into such an agreement or contract under which the Indian tribe would carry out activities to achieve land management goals for Federal land under the Secretary's jurisdiction and bordering or adjacent to the Indian forest land or rangeland under the Indian tribe's jurisdiction.

The Recreation and Public Purposes Act of 1926, as amended (43 U.S.C. 869 et seq.) authorizes the Secretary of the Interior to lease or convey BLM lands for recreational and public purposes under specified conditions.

The Land and Water Conservation Fund of 1964 (16 U.S.C. 460l-4, et seq.) provides funding to assist in preserving, developing, and assuring accessibility to outdoor recreation resources including but not limited to parks, trails, wildlife lands, and other lands and facilities desirable for individual active participation.

The Federal Coal Leasing Amendments Act of 1976 (30 U.S.C. 201 [a] [3] [A] [i]) requires that coal leases be issued in conformance with a comprehensive land use plan.

The Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.) requires application of unsuitability criteria prior to coal leasing and also to proposed mining operations for minerals or mineral materials other than coal.

The Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.) authorizes the development and conservation of oil and gas resources.

The Onshore Oil and Gas Leasing Reform Act of 1987 (30 U.S.C. 181 et seq.) requires that potential oil and gas resources be adequately addressed in planning documents; the social, economic, and environmental consequences of exploration and development of oil and gas resources be determined; and any stipulations to be applied to oil and gas leases be clearly identified.

The General Mining Law of 1872, as amended (30 U.S.C. 21 et seq.) allows the location, use, and patenting of mining claims on sites on public domain lands of the United States.

The Mining and Mineral Policy Act of 1970 (30 U.S.C. 21a) establishes a policy of fostering development of economically stable mining and minerals industries, their orderly and economic development, and studying methods for disposal of waste and reclamation.

The Geothermal Steam Act of 1970 (30 U.S.C. 1001-1027) governs the lease of geothermal steam and related resources on public lands. The Act prohibits issuing geothermal leases on virtually all USFWS-administered lands.

The Minerals Material Disposal Act of 1947, as amended establishes the authority under which BLM disposes of timber and other vegetative and forest products.

The Taylor Grazing Act of 1934 (43 U.S.C. 315) establishes grazing districts of vacant, unappropriated and unreserved land from any parts of the public domain, excluding Alaska, which are not national forests, parks and monuments, Indian reservations, railroad grant lands, or revested Coos Bay Wagon Road grant lands, and which are valuable chiefly for grazing and raising forage crops, and uses a permitting system to manage livestock grazing in the districts. In addition, the Act provides for the protection, administration, regulation and improvement of the grazing districts; promotes the adoption of regulations and cooperative agreements necessary to accomplish the purposes of the Act; regulates occupancy and use; preserves the land and resources from destruction or unnecessary injury; and provides for orderly improvement and development of the range. The Act also allows for the continuing study of erosion and flood control and performance of work to protect and rehabilitate areas subject to the Act. Willful violations of the Act, or of its rules and regulations, are punishable by fine.

The Public Rangelands Improvement Act of 1978 (43 U.S.C. 1901) provides that the public rangelands be managed so that they become as productive as feasible in accordance with management objectives and the land use planning process established pursuant to 43 U.S.C. 1712.

The Federal Cave Resource Protection Act of 1988 (43 CFR 37.11[C] & [F]) provides protection for caves containing significant resources such as geological, biological, historical, cultural, etc.

The Healthy Forest Initiative Act of 2002 expanded stewardship contracting authority, among other provisions including accelerating unnecessary delays and removing barriers to forest and rangeland restoration activities.

The Healthy Forests Restoration Act of 2003 (P.L. 108-148) outlines administrative procedures for hazardous-fuel-reduction projects on Forest Service and BLM lands to reduce wildfire risks to

communities, municipal water supplies, and other at-risk Federal land and to protect, enhance, and restore forest ecosystem components.

The Carlson-Foley Act of 1968 (P.L. 90-583) directs Federal agencies to enter upon lands under their jurisdiction having noxious plants (weeds), and destroy noxious plants growing on such land.

The Federal Noxious Weed Act of 1974 (7 U.S.C. 2801-2814) provides for the control and management of nonindigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health. The Act requires that each Federal agency develop a management program to control undesirable plants on Federal lands under the agency's jurisdiction; establish and adequately fund the program; implement cooperative agreements with state agencies to coordinate management of undesirable plants on Federal lands; establish integrated management systems to control undesirable plants targeted under cooperative agreements. A Federal agency is not required to carry out management programs on Federal lands unless similar programs are being implemented on state or private lands in the same area.

The Act also directs the Secretaries of Agriculture and the Interior to coordinate programs for control, research, and educational efforts associated with noxious weeds. The Secretaries must identify regional control priorities and disseminate technical information to interested State, local, and private entities.

The Plant Protection Act of 2000 (P.L. 106-224) prohibits the import, export, and movement in interstate commerce, or mailing of any plant pest unless authorized by the Secretary of Agriculture; authorizes the Secretary to prohibit or restrict the import, export, or movement in interstate commerce of any plant, plant product, biological control organism, noxious weed, or means of conveyance to prevent the introduction or dissemination of a plant pest or noxious weed; and combines all or a portion of 11 acts or resolutions into one act.

The Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712) implements various treaties and conventions between the United States and Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.

The Fish and Wildlife Coordination Act of 1958, as amended (16 U.S.C 661-667) proposes to assure that fish and wildlife resources receive equal consideration with other values during the planning of water resources development projects. The Act requires coordination with USFWS by the U.S. Department of Energy when a project is planned that may affect a body of water. It also requires coordination with the head of the state agency that administers wildlife resources in the affected state.

The Sikes Act of 1960, as amended (16 U.S.C. 670 et seq.) seeks to promote effectual planning, development, maintenance, and coordination of wildlife, fish, and game conservation and rehabilitation in military reservations.

The Fish and Wildlife Conservation Act of 1980 (16 U.S.C. 2901-2911) authorizes financial and technical assistance to the states for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife.

The Wild and Free Roaming Horse and Burro Act of 1971 (16 U.S.C. 1331) places all wild and free roaming horses and burros under the jurisdiction of the Secretary of Interior for the purpose of management and protection to achieve and maintain a thriving natural ecological balance on the public lands. The Act calls for the maintenance of current population inventories, provides for the humane destruction of sick or lame animals, and allows for adoption by qualified individuals in the case of excess populations.

Executive Order 11644 - Use of Off-Road Vehicles on the Public Lands (as amended by Executive Order 11989) (37 *Federal Register* 2877 [1971]), establishes policies and provides for procedures that will ensure that the use of off-road vehicles on public lands will be controlled and directed so as to protect the resources of those lands, promote the safety of all users of those lands, and minimize conflicts among the various uses of those lands.

Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (49 *Federal Register* 7629 [1994]) requires that each Federal agency consider the impacts of its programs on minority populations and low-income populations.

Executive Order 13007 – Indian Sacred Sites (61 *Federal Register* 26771 [1996]), requires Federal agencies to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions to accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoid adversely affecting the physical integrity of such sacred sites.

Executive Order 13287 – Preserve America directs Federal agencies to provide leadership in preserving America's heritage by actively advancing the protection, enhancement and contemporary use of historic and paleontological properties owned by the government, emphasizing partnerships. Under this order, agencies shall cooperate with communities to increase opportunities for public benefit from, and access to, Federally owned historic and paleontological properties.

Executive Order 13084 – Consultation and Coordination with Indian Tribal Governments provides, in part, that each Federal agency shall establish regular and meaningful consultation and collaboration with Indian Tribal governments in the development of regulatory practices on Federal matters that significantly or uniquely affect their communities.

Executive Order 13112 – Invasive Species provides that no Federal agency shall authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species unless, pursuant to guidelines that it has prescribed, the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.

Secretarial Order 3175 (incorporated into the Departmental Manual at 512 DM 2) requires that if Department of the Interior agency actions might impact Indian trust resources, the agency explicitly address those potential impacts in planning and decision documents, and the agency consult with the Tribal government whose trust resources are potentially affected by the Federal action.

Secretarial Order 3206 – American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act requires the U.S. Department of the Interior agencies to consult with Indian Tribes when agency actions to protect a listed species, as a result of compliance with the ESA, affect or may affect of Indian lands, Tribal trust resources, or the exercise of American Indian Tribal rights.

Appendix C

Best Management Practices

APPENDIX C
BEST MANAGEMENT PRACTICES

INTRODUCTION

Best management practices (BMPs) are those land and resource management techniques designed to maximize beneficial results and minimize negative impacts of management actions. BMPs are defined as methods, measures, or practices selected on the basis of site-specific conditions to provide the most effective, environmentally sound, and economically feasible means of managing an activity and mitigating its impacts. Interdisciplinary site-specific analysis is necessary to determine which management practices would be necessary to meet specific goals. BMPs include, but are not limited to, structural and nonstructural controls, operations, and maintenance procedures. BMPs can be applied before, during, and after pollution-producing or surface disturbing activities to reduce or eliminate the introduction of pollutants into receiving waters (40 Code of Federal Regulation 130.2(m), Environmental Protection Agency Water Quality Standards Regulation) or to prevent unnecessary or undue degradation of resources.

BMPs are identified as part of the National Environmental Policy Act process, with interdisciplinary involvement. Because the control of nonpoint sources of pollution and prevention of damage to other resources is an ongoing process, continual refinement of BMP design is necessary. This process can be described in five steps, which are: (1) selection of design of a specific BMP; (2) application of BMP; (3) monitoring; (4) evaluation; and (5) feedback. Data gathered through monitoring is evaluated and used to identify changes needed in BMP design, application, or in the monitoring program.

BMPs described in this appendix are a compilation of existing policies and guidelines and commonly-employed practices designed to assist in achieving the objectives for maintaining or minimizing water quality degradation from nonpoint sources, loss of soil productivity, providing guidelines for aesthetic conditions within watersheds, and mitigating impacts to soil, vegetation, or wildlife habitat from surface disturbing activities. BMPs are selected and implemented as necessary, based on site-specific conditions, to meet a variety of resource objectives for specific management actions. Therefore, this document does not provide an exhaustive list of BMPs, as additional BMPs or modifications may be identified to minimize the potential for negative impacts when evaluating site-specific management actions through an interdisciplinary process.

In addition, implementation and effectiveness of BMPs need to be monitored to determine whether the practices are achieving resource objectives and accomplishing desired goals. Adjustments will be made as necessary.

Each of the following BMPs are a part of the coordinated development of this Resource Management Plan and may be updated as new information becomes available to ensure objectives are met and to conform with changes in Bureau of Land Management (BLM) regulations, policy, direction, or new scientific information. Applicants also may suggest alternate procedures that could accomplish the same result. These guidelines will apply, where appropriate, to all use authorizations, including BLM-initiated projects. Any BMP listed may be used in any program wherever it may be effective.

ROAD DESIGN AND MAINTENANCE

1) Design roads to minimize total disturbance, to conform with topography, and to minimize disruption of natural drainage patterns.

2) Base road design criteria and standards on road management objectives such as traffic requirements of the proposed activity and the overall transportation objectives, and minimizing damage to the environment.

3) Locate roads on stable terrain such as ridgetops, natural benches, and flatter transitional slopes near ridges and valley bottoms and moderate sideslopes and away from slumps, slide prone areas, concave slopes, clay beds, and where rock layers dip parallel to the slope. Locate roads on well-drained soil types; avoid wet areas.

4) Construct cut and fill slopes to be approximately 3(h):1(v) or flatter where feasible. Locate roads to minimize heights of cutbanks. Avoid high, steeply sloping cutbanks in highly fractured bedrock.

5) Avoid head walls, midslope locations on steep, unstable slopes, fragile soils, seeps, old landslides, sideslopes in excess of 70 percent, and areas where the geologic bedding planes or weathering surfaces are inclined with the slope. Implement extra mitigation measures when these areas cannot be avoided.

6) Construct roads for surface drainage by using outslopes, crowns, grade changes, drain dips, waterbars and/or insloping to ditches as appropriate.

7) Sloping the road base to the outside edge for surface drainage is normally recommended for local spurs or minor collector roads where traffic volume is low and lower traffic speeds are anticipated. This is also recommended in situations where long intervals between maintenance will occur and where minimum excavation is wanted. Out-sloping is not recommended on steep slopes. Sloping the road base to the inside edge is an acceptable practice on roads with steep sideslopes and where the underlying soil formation is very rocky and not subject to appreciable erosion or failure.

8) Crowning and ditching are recommended for arterial and collector roads where traffic volume, speed, intensity and user comfort are considerations. Recommended gradients range from 0 to 15 percent where crowning and ditching may be applied, as long as adequate drainage away from the road surface and ditch lines is maintained.

9) Minimize excavation when constructing roads through the use of balanced earthwork, narrowing road widths, and end hauling where sideslopes are between 50 and 70 percent.

10) If possible, construct roads when soils are dry and not frozen. When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities should be limited or cease unless otherwise approved by the authorized officer.

11) Consider improving inadequately surfaced roads that are to be left open to public traffic during wet weather with gravel or pavement to minimize sediment production and maximize safety.

12) Retain vegetation on cut slopes unless it poses a safety hazard or restricts maintenance activities. Roadside brushing of vegetation should be done in a way that prevents disturbance to root systems and visual intrusions (i.e., avoid using excavators for brushing).

13) Retain adequate vegetation between roads and streams to filter runoff caused by roads.

14) Avoid riparian/wetland areas where feasible; locate in these areas only if the roads do not interfere with the attainment of proper functioning condition and riparian management objectives.

15) Minimize the number of unimproved stream crossings. When a culvert or bridge is not feasible, locate drive-through (low water crossings) on stable rock portions of the drainage channel. Harden crossings with the addition of rock and gravel if necessary. Use angular rock if available.

16) Locate roads and limit activities of mechanized equipment within stream channels to minimize their influence on riparian areas. When stream crossing is necessary, design the approach and crossing perpendicular to the channel where practical. Locate the crossing where the channel is well defined, unobstructed, and straight.

17) Avoid placing fill material in floodplain unless the material is large enough to remain in place during flood events.

18) Use drainage dips instead of culverts on roads where gradients would not present a safety issue. Locate drainage dips in such a way so water would not accumulate or where outside berms prevent drainage from the roadway. Locate and design drainage dips immediately upgrade of stream crossings and provide buffer areas and catchment basins to prevent sediment from entering the stream.

19) Construct catchment basins, brush windrows, and culverts in a way to minimize sediment transport from road surfaces to stream channels. Install culverts in natural drainage channels in a way to conform with the natural streambed gradients to outlets that discharge onto rocky or hardened protected areas.

20) Design and locate water crossing structures in natural drainage channels to accommodate adequate fish passage, provide for minimum impacts to water quality, and capable of handling a 100-year event for runoff and floodwaters.

21) Use culverts that pass, at a minimum, a 50-year storm event and/or have a minimum diameter of 24 inches for permanent stream crossings and a minimum diameter of 18 inches for road cross drains.

22) Replace undersized culverts and repair or replace damaged culverts and downspouts. Provide energy dissipaters at culvert outlets or drainage dips.

23) Locate culverts or drainage dips in such a manner as to avoid discharge onto unstable terrain such as head walls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or road surfaces. Culverts should be placed on solid ground to avoid road failures.

24) Proper sized aggregate and riprap should be used during culvert construction. Place riprap at culvert entrance to streamline water flow and reduce erosion.

25) Establish adapted vegetation on all cuts and fill immediately following road construction and maintenance.

26) Remove berms from the downslope side of roads, consistent with safety considerations.

27) Leave abandoned roads in a condition that provides adequate drainage without further maintenance. Close abandoned roads to traffic. Physically obstruct the road with gates, large berms, trenches, logs, stumps, or rock boulders as necessary to accomplish permanent closure.

28) Abandon and rehabilitate roads no longer needed. Leave these roads in a condition that provides adequate drainage. Remove culverts.

29) When plowing snow for winter use of roads, provide breaks in snow berms to allow for road drainage. Avoid plowing snow into streams. Plow snow only on existing roads.

30) Maintenance should be performed to conserve existing surface material, retain the original crowned or out-sloped, self-draining cross section, prevent or remove rutting berms (except those designed for slope protection) and other irregularities that retard normal surface runoff. Avoid wasting loose ditch or surface material over the shoulder where it can cause stream sedimentation or weaken slump-prone areas. Avoid undercutting back slopes.

31) Do not disturb the toe of cut slopes while pulling ditches or grading roads. Avoid sidecasting road material into streams.

32) Grade roads only as necessary. Maintain drain dips, waterbars, road crown, in-sloping and out-sloping, as appropriate, during road maintenance.

33) Maintain roads in special management areas according to special management area guidance. Generally, retain roads within existing disturbed areas and side cast material away from the special management area.

34) When landslides occur, save all soil and material usable for reclamation or stockpile for future reclamation needs. Avoid side casting of slide material where it can damage, overload, and saturate embankments, or flow into down-slope drainage courses. Reestablish vegetation as needed in areas where vegetation has been destroyed due to side casting.

35) Strip and stockpile topsoil ahead of construction of new roads, if feasible. Reapply soil to cut and fill slopes prior to revegetation.

SURFACE-DISTURBING ACTIVITIES

1) Special design and reclamation measures may be required to protect scenic and natural landscape values. This may include transplanting trees and shrubs, mulching and fertilizing disturbed areas, removal of surfacing material, imprinting, irrigation, use of low profile permanent facilities, and painting to minimize visual contrasts. Surface-disturbing activities may be moved to avoid sensitive areas or to reduce the visual effects of the proposal.

2) Above ground facilities requiring painting should be designed to blend in with the surrounding environment.

3) Surface disturbance will be restricted in areas that have special topographic (steep or broken terrain and/or benches) and soil concerns in order to reduce impacts caused by soil erosion and habitat disturbance. Development in these areas will be considered on a case-by-case basis and will contain site-specific mitigation designed to prevent increased sediment from being transported into drainages and to prevent fragmentation of areas determined to provide important wildlife habitat.

4) In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.

5) Only excavate topsoil and subsoil where it is absolutely necessary. Consider brush-beating, mowing, and/or parking on vegetation for surface disturbing activities.

6) Disturbed areas should be contoured to blend with the natural topography. Blending is defined as reducing form, line, and color contrast associated with the surface disturbance. Disturbance should be contoured to match the original topography, where matching is defined as reproducing the original topography and eliminating form, line, and color caused by the disturbance as much as possible.

7) Interim reclamation should be implemented concurrent with construction and site operations to the fullest extent possible. Final reclamation actions shall be initiated within 6 months of the termination of operations unless otherwise approved in writing by the authorized officer.

8) Fill material should be pushed into cut areas and up over back slopes. Depressions should not be left that would trap water or form ponds unless the Authorized Officer has determined that dips or depressions may be used to assist reclamation efforts and seed propagation.

9) Reclaimed soil will be free of contaminants and will have adequate depth, texture, and structure to provide for successful vegetation reclamation. Vegetation reclamation will be considered successful when healthy, mature perennials are established with a composition and density that closely approximates the surrounding vegetation as prescribed by the BLM, and the reclamation area is free of noxious weeds.

10) If necessary after reclamation, a BLM-standard barbed wire fence will be constructed to exclude livestock for a minimum of at least two successful growing seasons.

11) The project proponent will include a restoration plan for habitat of special status species when the BLM determines it is appropriate. The restoration plan will be developed in consultation with, and approved by, the BLM.

12) Additional reclamation measures may be required based on the conditions existing at the time of abandonment.

13) Oil and fuel for equipment and vehicles must be carefully handled and disposed to prevent soil or water contamination.

14) Develop a spill contingency plan which identifies all actions to be taken in the event of a chemical spill including phone numbers for Federal, State, and local agencies which must be notified.

15) Time activities to avoid wet periods.

OIL AND GAS ACTIVITIES

1) Plans of Development (PODs) are encouraged to minimize unnecessary disturbance. Field development plans should address sensitive area avoidance or mitigation, potential road, utility, and well locations, road classes, and plans for interim and final reclamation.

2) Dual completion, re-completion, commingling (both downhole and at the surface), the drilling of multiple wells from a single location, and centralized tank batteries will be encouraged and permitted in order to reduce the number of new well pads and consequent surface disturbance. This will reduce impacts to soil and vegetation, reduce air impacts caused by dust, reduce habitat fragmentation, and offer less opportunity for the spread of noxious weeds.

3) Operators will be encouraged to unitize in areas of dense development to increase management efficiency and facilitate operations in sensitive areas. Unitization is the process by which multiple lease holders in a geographic area share facilities so as to reduce surface disturbance caused by multiple duplicate facilities such as pipelines and compressor stations.

4) Reduce the size of the well pad whenever possible, without compromising safety.

5) Remote monitoring of wells and related production equipment is encouraged to reduce wildlife disturbance and road deterioration.

6) Pipelines associated with oil and gas activities will follow existing roads and rights-of-way corridors where possible to minimize surface disturbance.

7) The burial of pipelines associated with oil and gas exploration, development, production, and transportation is preferred. Pipelines greater than 4 inches in nominal diameter, all injection lines, and gas lines with a pressure greater than 125 pounds per square inch must be buried and constructed of steel. The use of plastic pipe will be approved by the authorized officer on a case-by-case basis. A waiver of the requirement to bury pipelines will be considered in the following situations:

   - The temporary (one year or less) surface installation of plastic pipelines, after considering the length of the pipeline, its proposed location, the potential hazards present, the characteristics of the pipe regarding deterioration, the American Society for Testing and Materials or similar specifications for the pipe, the intended use of the pipeline, and other appropriate factors

   - Where rock outcrops at the surface make the burial of pipeline impractical, such as when unreasonable and unreclaimable surface disturbance would result. Where the pipeline is exposed, painting may be required in accordance with the painting policy for visual resource management areas and Notice to Lessees 87-1, New Mexico. Waiver of the requirement for painting will be considered on a case-by-case basis.

   - Where the surface ownership along the pipeline route is mixed, and the majority of surface ownership is not public. In those cases, the installation of pipelines on public land will conform to the practice to be employed on the remainder of the pipeline, unless special resource management concerns dictate strict adherence to this policy.

8) Minimize noise in sensitive wildlife habitats. Consider using noise reduction mufflers, earthen berms, walls, sheds, and/or distance to reduce sound levels. Consider requiring vent stack/exhaust stack coverings on heater treater/separator units to prevent wildlife from entering.

9) All production related pits and tanks, regardless of size, would be covered and fenced to exclude wildlife.

Preliminary Investigations

Activities occurring during preliminary investigations may include remote sensing; mapping of rock outcrops and seeps (either of which result in little or no surface disturbance); and seismic, gravity, and magnetic surveys.

A lease is not required to conduct such preliminary investigations. However, the geophysical operator is required to file a completed Form 3150-4, "Notice of Intent to Conduct Oil and Gas Exploration Operations for all operations on public lands.

In general, the BLM requires an examination of resource values and development of appropriate surface protection and reclamation measures prior to the geophysical contractor beginning surface-disturbing activities associated with preliminary investigations. The BLM will solicit involvement from public land users (e.g., grazing allottees) to develop site-specific protection measures and reclamation specifications. Compliance monitoring should occur during and after seismic exploration activities when or if necessary. Compliance inspections during the operation ensure that requirements and guidelines are being followed. Compliance inspections upon completion of work ensure that the lines are clean and drill holes are plugged properly.

The frequency of authorized seismic exploration will be dependent upon resource conditions and seasonal restrictions (timing limitations) that may be imposed to reduce conflicts with watershed conditions, wildlife, and hunting. Management practices specific to wildlife and vegetation resources include the following:

- Prior to surveying/flagging routes for geophysical surveys or other preliminary activities, the project area shall be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. The Universal Transmercator grid locations of all raptor nests will be reported to the Authorized Officer. All raptor nests will be avoided by the required distances described under the Well Sites section. A "raptor nest" is defined as any raptor or corvid nest.

- In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species will be conducted along with the general raptor nest survey described above, prior to surveying/flagging lines.

- During operations at any time, large (greater than 6 feet in height) trees or shrubs containing or capable of containing a raptor nest will be avoided by vehicular traffic or other activities likely to destroy them.

- In areas that allow for off-road travel, minimize the off-road impact of large vehicles. Use wide, flat-tread, balloon tires (especially on seismic thumper trucks) where possible. Use all-terrain vehicles rather than large vehicles where possible.

- Occupied habitat for special status species will be avoided in a manner similar to surface use requirements (avoid occupied habitat up to 0.5 mile) unless impacts adequately mitigated.

RENEWABLE ENERGY

1) All renewable wind energy projects will be subject to the BMP's identified in the Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States, U.S. Department of Interior, BLM, June 2005.

BMP's are identified in Section 2.2.3.2 of this document, which can be viewed online at http://www.windeis.anl.gov/.

RIGHTS-OF-WAY AND UTILITY CORRIDORS

1) Rights-of-way and utility corridors should use areas adjoining or adjacent to previously disturbed areas whenever possible, rather than traverse undisturbed vegetation communities.

2) Waterbars or dikes should be constructed on all of the rights-of-way and utility corridors, and across the full width of the disturbed area, as directed by the authorized officer.

3) Disturbed areas within road rights-of-way and utility corridors should be stabilized by vegetation practices designed to hold soil in place and minimize erosion.

4) Sediment barriers should be constructed when needed to slow runoff, allow deposition of sediment, and prevent transport from the site. Straining or filtration mechanisms may also be employed for the removal of sediment from runoff.

FOREST MANAGEMENT

1) Design harvest units and forest health treatments to blend with natural terrain.

2) Utilize silvicultural regeneration systems that are most appropriate for treatment objectives. Utilize uneven-aged silviculture for most treatments; however, even-aged systems may be appropriate in situations to accomplish insect and disease control, aspen regeneration, or other site-specific objectives. Consider a range of maximum stand density index by species to accomplish forest health goals.

3) When soils or road surfaces become saturated to a depth of 3 inches, BLM-authorized activities, such as log yarding and hauling, should be limited or cease unless otherwise approved by the authorized officer.

4) Scatter unmerchantable material (tops, limbs, etc.) in cutting units and treatment areas, consistent with fuel loading limitations.

5) Locate skid trails on upper slope positions, as far as possible from surface water. Avoid skidding across drainage bottoms or creating conditions that concentrate and channelize surface flow.

6) Use directional felling, when applicable, to minimize skidding distance and locate skid trails as far as possible from sensitive areas.

7) Install waterbars and apply native seed, when available, to skid trails and landings prior to temporary seasonal closures and following harvest operations. Consider ripping or subsoiling on skid trails and abandoned haul roads to reduce compaction where soil and slope conditions permit.

8) Locate landings away from surface water. Design landings to minimize disturbance consistent with safety and efficiency of operation.

9) Use low pressure grapple equipment, if possible, when piling slash.

10) Conduct forested land treatments when soil surfaces are either frozen, dry, or have adequate snowpack to minimize impacts to soil and water resources.

11) Prepare pre-harvest plan for efficient forest and site harvesting and road systems. Use topographic maps, aerial photographs, soil surveys, and field trips to determine site conditions. Use global positioning system to geolocate field data for incorporation into the geographic information system. Plan should clearly outline BMPs to be followed before, during, and after harvest; identify area to be harvested; locate special areas of protection (wetlands and streamside vegetation); allow for proper timing of activities; describe management measures for road layout, design, construction, maintenance, harvesting methods, and forest regeneration. As part of plan:

- Consider natural drainage channels; threatened, endangered, and special status species habitat; topography; and soil types in determining boundaries of timber harvest activities, location and design of roads and landings, selection of harvesting method, reforestation techniques.

- Avoid sensitive areas such as wetlands and important wildlife habitats. If avoidance is not possible, choose harvest practices with least serious effects or schedule to avoid areas during critical time periods (e.g., nesting or breeding seasons). Where access to adjacent land would allow for more efficient road system or avoidance, consider working with landowner to obtain an easement.

- Time construction and harvest activities to take advantage of seasonal conditions. When possible, avoid construction during heavy rains or freeze/thaw conditions to avoid potential for runoff and erosion.

12) Conduct rapid revegetation of areas disturbed by harvesting operations or road construction to reduce erosion and sedimentation. Equipment and site preparation methods must consider site topography, soil type, natural drainage, amount of rainfall, and kind of vegetation. Site preparation may include:

- Removal of logging roads, landings, and drainage structures.

- Mechanical activities to chop, root rake, disk and blade the soil in the disturbed areas in preparation for planting.

- Prescribed fires to reduce logging residue and undesirable trees and vegetation.

13) Establish vegetative cover planting on erodible areas that were cultivated in the fall but will not be planted until spring.

14) Stabilize steep slopes prior to planting.

15) Use native grasses or other plant species to reseed bare-erodible areas; do not introduce invasive non-native plants under any circumstance.

16) Windrow logging debris along contours, in gullies, and on skid trails to stabilize these areas.

17) Remove unneeded logging roads and skid trails immediately. Do not wait for entire harvest operation to be completed.

18) Smooth, grade and revegetate landings and, where appropriate, main haul roads.

19) Remove temporary drainage structures and clean permanent drainage structures.

20) Minimize the use and maximize the benefit of chemicals through skilled and appropriate management and application. To ensure safe use of chemicals, consider the following:

- Transportation, handling, storage, application and disposal of pesticides, fire retardants, and fertilizers must comply with applicable local, state and federal regulations.
- Monitor weather conditions such as rain, wind speed, temperature and humidity during application to prevent drift, volatilization, and surface water runoff.
- Do not apply chemicals in streamside management zones or wetlands.
- Note that fertilizers and fire retardants contain high amounts of both nitrogen and phosphorus and are easily transported overland and deposited in stream along with the sediment. These compounds can accelerate eutrophication (a process whereby water bodies are choked by overabundant plant life and algae due to higher levels of nutrients such as nitrogen and phosphorus).

FOREST WETLANDS

1) Establish and maintain a streamside management zone (SMZ) along surface waters to buffer against detrimental changes in the temperature regime of the waterbody, provide bank stability, provide a filter to keep sediment and pollutants out of the stream, and withstand wind damage. The SMZ should be sufficiently wide, and should include a sufficient number of canopy species. The width should be based on erosiveness of the soil, steepness of bank slopes, proximity to municipal watersheds, protection of adjacent wetlands, and sensitivity of fish and wildlife habitat and other critical areas. The SMZ should incorporate nearby wetlands.

2) Limit disturbances in SMZs by the following methods: restrict road construction except at designated stream or wetland crossings; operate vehicles only on roads; do not deposit road construction material, waste timber, or slash into SMZs; do not handle, store, apply, or dispose of hazardous chemicals, fertilizers, or pesticides in SMZs. Timber harvesting should be conducted only selectively if at all, and should consider following practices:

- Retain the appropriate diversity and size of tree and shrub species.
- Protect and retain trees and shrubs and snags that are below harvest quality.
- Retain bank edge trees for stream channel stability and to shade stream.
- Maintain sufficient ground cover to trap sediment.
- Immediately remove any logging debris that enters the stream channel.

3) Use ultrawide, high-flotation tires on logging trucks and skidders to reduce soil compaction and erosion.

4) Suspend or limit forest operations when soils become saturated.

5) Maintain natural contour of the site and take action to ensure that forestry activities do not immediately or gradually convert the wetland to dry land.

6) Where roads are constructed, provide cross drainage to maintain natural surface and subsurface flow.

7) Construct road fills only when absolutely necessary. Use gravel or crushed rock as fill to provide for water movement.

FIRE SUPPRESSION

1) Minimize surface disturbances and avoid the use of heavy earth-moving equipment where possible, on all fire suppression and rehabilitation activities, including mop-up, except where high value resources (including lives and property), are being protected.

2) Install waterbars and seed all constructed firelines with native or adapted nonnative species as appropriate and in accordance with the BLM Emergency Fire Rehabilitation Handbook (BLM 1999c).

3) Avoid dropping fire retardant detrimental to aquatic communities on streams, lakes, ponds and in riparian/wetland areas.

4) The location and construction of handlines should result in minimal surface disturbance while effectively controlling the fire. Hand crews should locate lines to take full advantage of existing land features that represent natural fire barriers. Whenever possible, handlines should follow the contour of the slope to protect the soil, provide sufficient residual vegetation to capture and retain sediment, and maintain site productivity.

5) Suppression in riparian areas should be by hand crews when possible.

PRESCRIBED BURNING

1) To protect soil productivity, burning should be conducted, if possible, under conditions when a low intensity burn can accomplish stated objectives. Burn only when conditions of organic surface or duff layer have adequate moisture to minimize effects to the physical and chemical properties of the soil. When possible, maximize the retention of the organic surface or duff layer.

2) Slash should not be piled and burned within riparian/wetland areas. If riparian/wetland areas are within or adjacent to the prescribed burn unit, piles should be firelined or scattered prior to burning.

3) When preparing the unit for burning, avoid piling concentrations of large logs and stumps; pile small material (3 to 8 inches diameter). Slash piles should be burned when soil and duff moisture are adequate to reduce potential damage to soil resources.

4) All fire management activities will be subject to the BMP's identified in the Decision Record and Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas, U.S. Department of Interior, BLM New Mexico State Office, September 2004c. BMPs are identified in Chapter 2 of this document, which can be viewed online at http://www.nm.blm.gov.

LIVESTOCK GRAZING MANAGEMENT

All rangeland projects and vegetative land treatments will meet current BLM policy and objectives of this Resource Management Plan. Rangeland improvements projects and vegetative treatments are constructed as a portion of adaptive management to reduce resource conflicts and to achieve multiple use objectives. They have been standardized over time to mitigate impacts and will be adhered to in the construction and maintenance of rangeland projects within the planning area. Rangeland improvements are structures, facilities and practices to improve or facilitate the grazing management and improve the resources. Grazing Management Practices are developed through consultation on an allotment specific objectives and progress toward multiple use objectives and sustainability of resources. Grazing Management Practices may include herding, grazing and deferment periods, use of supplement, change of class of livestock and increase or decrease of livestock numbers.

MINING

1) Reclaim all disturbed surface areas promptly, performing concurrent reclamation as necessary, and minimize the total amount of all surface disturbance.

2) All surface soil should be stripped prior to conducting operations, stockpiled, and reapplied during reclamation, regardless of soil quality. Minimize the length of time soil remains in stockpiles and the depth or thickness of stockpiles. When slopes on topsoil stockpiles exceed 5 percent, a berm or trench should be constructed below the stockpile to prevent sediment transport offsite.

3) Strip and separate soil surface horizons where feasible and reapply in proper sequence during reclamation.

4) Locate soil stockpiles and waste rock disposal areas away from surface water to minimize off-site drainage effects.

5) Establish vegetation cover on soil stockpiles that are to be in place longer than 1 year.

6) Construct and rehabilitate temporary roads to minimize total surface disturbance, consistent with intended use.

7) Consider temporary measures such as silt fences, straw bales, or mulching to trap sediment in sensitive areas until reclaimed areas are stabilized with vegetation.

8) Reshape to the approximate original contour all areas to be permanently reclaimed, providing for proper surface drainage.

9) Leave reclaimed surfaces in a roughened condition following soil application.

10) Complete reclamation and seeding during the fall if possible.

INVASIVE/NOXIOUS WEED MANAGEMENT

1) All surface disturbing equipment should be inspected and cleaned prior to coming onto public lands. This is especially important on vehicles from out of state or if coming from a weed infested area.

2) If fill dirt or gravel is brought onto public lands, the source needs to be noxious weed free.

3) Construction sites should be monitored for the life of the project for the presence of Invasive/Noxious weeds (includes maintenance and construction activities). If weeds are found the Socorro Field Office will be notified and it will determine the best method for the control of the particular weed species.

4) All seed shall be certified noxious weed free. Areas will be monitored to determine the success of re-vegetation, the presents of invasive/noxious weeds, and will be reseeded if necessary.

5) Consider livestock quarantine, removal, or timing limitations in invasive/noxious weed-infested areas.

6) All seed, hay, straw, mulch, or other vegetation material transported and used on public land for site stability, rehabilitation, or project facilitation shall be certified noxious weed free of all reproductive parts upon the passage of a weed free law in the state of New Mexico. All baled feed, pelletized feed, and grain used to feed livestock shall also be certified as free of noxious weed seed.

7) It is recommended that all vehicles, including off-road and all-terrain, traveling in or out of weed-infested areas should clean their equipment before and after use on public land.

DEVELOPED RECREATION

1) Construct recreation sites and provide appropriate sanitation facilities to minimize impacts to resource values, public health and safety, and minimize user conflicts of approved activities and access within an area as appropriate.

2) Minimize impacts to resource values or to enhance a recreational setting and recreation experience. Harden sites and locations subject to prolonged/repetitive concentrated recreational uses with selective placement of gravel or other porous materials and allow for dust abatement, paving, and engineered road construction.

3) Use public education and/or physical barriers (such as rocks, posts, vegetation) to direct or preclude uses and to minimize impacts to resource values and the quality of recreation experience.

4) As appropriate, employ limitations of specific activities to avoid or correct adverse impacts to resource values, public safety issues, and/or conflicts between recreational uses.

5) Employ land use ethics programs and techniques such as “Leave No Trace” and “Tread Lightly” programs. Use outreach efforts of such programs to lessen needs to implement more stringent regulatory measures to obtain resource protection and a quality recreation experience.

WILDLIFE AND RIPARIAN HABITAT

1) Prior to the initiation of a surface-disturbing activity, the project area will be surveyed for raptor nests or active prairie dog towns. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests and active prairie dog towns will be avoided by the distances and seasonal periods listed below.

- Eagle – 0.5 mile, February 1-July 15
- Prairie Falcon – 0.5 mile, March 1-August 1
- Ferruginous Hawk – 0.5 mile, February 1-July 15
- Aplomado Falcon – 0.5 mile, January 1-July 31
- Gunnison Prairie Dog – 0.25 mile, February 15-June 15
- Black-Tailed Prairie Dog – 0.25 mile, January 1-June 15
- All other raptor species – 0.5 mile, during observed nest establishment through fledgling

Long duration land use activities will not be allowed to occur within the species-specific spatial buffer zone of active nests or occupied prairie dog towns listed above. Short duration activities will be avoided within the species-specific spatial buffer zones during the dates listed above. Short duration activities will be limited to the spatial buffer zone outside of the boundary of the occupied prairie dog town and will not occur within the occupied town. All other raptor species nests will be avoided by the spatial buffer zone only during the period listed above, regardless of the duration of the activity. Before land use activities can commence a raptor and prairie dog survey must be completed.

A short duration activity is defined as an activity, which would begin outside of a given breeding season and end prior to initiation of a given breeding season. A long duration activity is defined as an activity which would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer. Surveys will be conducted by professional biologists approved by the Authorized Officer.

2) Ensure that all fences are constructed to BLM Socorro Field Office Fence Specifications to mitigate impacts to wildlife.

3) Ensure that escape wildlife escape ramps are installed and maintained on all applicable water development projects on public lands (see BLM Manual Handbook H-1741-2 Water Developments November 6, 1990).

4) Construct all new water improvements so that they are located a minimum of 30 meters away from fences or other structures likely to pose a collision threat to bats.

5) Surface disturbance will not be allowed within up to 0.5 mile of the outer edge of 100-year floodplains, playas, all artificial water developments (tanks, guzzlers, etc.), and riparian habitat (seeps, arroyos, etc.). Exceptions to this requirement will be considered on a case-by case basis.

6) In areas where habitat and/or rangeland enhancement projects have been implemented, with the exception of large landscape projects (prescribed burns, chemical treatments, and mechanical treatments), adverse impacts to the landscape will be avoided by minimizing or excluding certain surface-disturbing activities that may degrade the objectives or intent of the project. Exceptions to this requirement will be considered on a case-by-case basis.

7) In all crucial calving, lambing, kidding, and fawning areas and wintering ranges, all surface-disturbing activities, permanent or temporary, will be avoided during the appropriate time periods.

8) Prior to initiating geophysical or other preliminary surveys during the raptor breeding season, the area will be surveyed for the presence of raptor nests.

9) In siting facilities, the following measures must be followed:

- In areas that constitute occupied or potential aplomado falcon habitat, a protocol survey for this species will be conducted along with the above general raptor nest survey prior to surveying/flagging locations.

- During operations at any time, all habitat features (pinnacles, cliffs, ledges, caves, and trees and shrubs greater than 6 feet in height) containing or capable of containing raptor nests or bat habitat will be avoided by vehicular traffic or other surface-disturbing activities likely to remove or destroy them unless authorized by BLM authorized officer.

- Tree and vegetation clearing will be limited to the minimum area required, except where vegetative objectives have been established for elimination or reduction in vegetative density.

- Construction activities will be timed to avoid wet periods.

- Power lines will be constructed to standards outlined in the most recent version of "Suggested Practices for Raptor Protection on Power Lines" published by the Edison Electric Institute/Raptor Research Foundation, unless otherwise agreed to by the Authorized Officer. The holder is responsible for demonstrating that power pole designs not meeting these standards are raptor safe. Such proof will be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modifications or additions to power line structures constructed under this authorization, should they be necessary to ensure the safety of large perching birds. The modifications and/or additions will be made by the holder without liability or expense to the United States.

- All equipment installed on Federal lands will be constructed to prevent birds and bats from entering them and, to the extent practical, to discourage perching and nesting.

- Open top tanks, reserve pits, disposal pits, or other open pits will be required to be equipped to deter entry by birds, bats, or other wildlife.

VISUAL RESOURCES MANAGEMENT

BMPs to address visual resource concerns have been incorporated into the above resource discussions, as appropriate. Additional BMPs dealing with visual resource management considerations in oil and gas development can be found on the BLM website at www.blm.gov/bmp/. BMPs dealing with visual resource management considerations in general are available at www.blm.gov/nstc/VRM/destech.

Appendix D

Monitoring

APPENDIX D
MONITORING

Effectiveness monitoring is the process of collecting data and information in order to determine whether or not desired outcomes (expressed as goals and objectives in the land use plan) are being met (or progress is being made toward meeting them) as the allowable uses and management actions are being implemented. This appendix describes the process for effectiveness monitoring that would be carried out for each resource or program to determine if the actions described in the Resource Management Plan Revision are meeting or moving toward management goals.

VEGETATION

Monitoring to determine success in meeting vegetation management objectives would include periodic measurements of plant composition, vigor, and productivity, as well as measurement of the amount and distribution of plant cover and litter which protects the soil surface from raindrop impact, detains overland flow, protects the surface from wind erosion, and retards soils moisture loss through evaporation. Additional data to determine the effectiveness of established tools in meeting objectives may include herbaceous or woody utilization, actual use, and climatic conditions.

Determination of trends in production, structure, composition of vegetation and determination of soil/site stability, watershed function, and integrity of biotic community would be done through the rangeland health assessment process prescribed in the most current versions of Interpreting Indicators of Rangeland Health (Shaver et al. 2000), and Bureau of Land Management (BLM) Manual 4180 and Handbook H-4180-1 guiding implementation of the rangeland health standards (BLM 2001).

Special Status Plants

Monitoring would include surveys to determine the distribution, resource conditions, and trends of special status plant species and representative habitats. This would include determining plant composition at the site, checking for invasion of exotic species, monitoring localized disturbances (from off-highway vehicle [OHV] use, recreational use, etc.), and determining trends in special status plant attributes. Monitoring methods would include establishing photo points and doing periodic ocular surveillance. Any new ground-disturbing activities or National Environmental Policy Act actions would require a survey clearance for presence or absence of special status plants. Trends in special status plants and vegetation would be determined and could include such things as demographic studies, density, cover, and frequency (in exclosures versus open areas). Methods to accomplish this could include establishing new exclosures to determine effects of use versus nonuse, developing conservation agreements/conservation strategies, and conducting vegetative attribute sampling in accordance with Measuring and Monitoring Plant Populations (Elzinga et al. 1998).

Invasive/Noxious Weeds

Evaluation of treatments would continue in cooperation with the State of New Mexico, Socorro and Catron Counties, and private interests as well as neighboring counties and Federal jurisdictions. Inventories to identify new introductions, distribution, and density of noxious weed populations would be carried out on an annual basis in cooperation with the aforementioned entities. Known noxious weed sites, which are identified for treatment, will be visited each year and evaluated for effectiveness of control. Known sites not identified for treatment will be visited on a rotational basis over three years. All known sites visited will be located with a global positioning system (GPS) unit, photographed, measured, and a determination of the need for future treatment will be made.

Inventories for new noxious weeds will be conducted each year on a three-year rotation through the resource area. All burned areas (natural and prescribed) will be surveyed for noxious weeds for three years following the burn. Any newly discovered sites will be located with a GPS unit, photographed, measured, and a determination of the need for future treatment will be made. Ecological trends due to changes in vegetation composition over time, in areas dominated by competing undesirable plant species, would be measured through periodic rangeland health assessments following procedures outlined in Interpreting Indicators of Rangeland Health (Shaver et al. 2000).

RANGELAND

Monitoring studies have been established on all allotments in BLM's Decision Area. Data such as actual livestock use, utilization of forage species, climatic data, rangeland condition, and trend would continue to be collected from these studies. The intensity and frequency of monitoring data collection would vary by management category. Allotments in the "I" category are monitored at a greater intensity than the allotments in categories "M" and "C." The monitoring schedule will be dependant on staffing and budget.

The frequency of evaluations will likewise vary due to staffing and budget. At a minimum, evaluations should be coordinated with the renewal schedule of the 10-year permit. Where allotment management plans are in place, the evaluation would coincide with the end grazing cycle. Since 1999, 129 allotments have been evaluated as a result of the permit renewal process.

WILDLIFE HABITAT AND SPECIAL STATUS SPECIES

Monitoring of wildlife enhancement projects will be implemented annually or semiannually as time, funding, and availability of personnel allows. Data will be used to help determine areas where habitat is limited and where special management may be needed. Where vegetation treatments are applied, annually or semiannually monitor results with photo points and vegetation sampling that includes species and structural composition of the sites both pre-and post-treatment, if possible. Baseline big game and non-game use patterns and estimated population levels would be calculated using information collected annually from the New Mexico Department of Game and Fish. These would be compared with post-treatment use patterns and population numbers, along with vegetation sampling, and would be used to determine the relative effectiveness of the treatment. This monitoring would be accomplished by contract or with the aid of Federal, State, and private employees. Every five years or as time, funding, and availability of personnel allows, the number of acres of bighorn sheep, mule deer, elk, and pronghorn antelope habitat that has undergone vegetation treatments would be evaluated to determine what percentage of the proposed treatment has been completed. In addition, every five years, population levels and distribution of these species within the resource area would be evaluated using annual observations and herd counts conducted by the New Mexico Department of Game and Fish.

Monitoring could consist of intensive research projects or passive population inventories designed to help identify the extent of the populations and the habitats that are being used. Inventories of special status species would be completed once every one to three years for species known to occur within the Decision Area.

Annually or semi-annually assess landscape changes in a variety of vegetative communities from wildfire, prescribed fire, vegetation treatments, insect infestation, or other major influences. These changes will be mapped using GPS, geographic information system, and remote sensing technologies. The number of acres will be reported for each type of action. Assessments will be based on changes in the size and composition of each major vegetative community. Changes will reflect suitability for dependent/obligate species for each vegetative community. Each vegetative community would be evaluated periodically during Rangeland Health Assessments and after major catastrophic events such as large-scale wildfires.

Where necessary, recommendations will be made for protection and restoration of damaged or degraded habitats.

Riparian Habitat

The goal of the Socorro Field Office riparian monitoring is to document the progress toward achieving and then maintaining Proper Functioning Condition while being managed under the multiple use and adaptive management concepts. Riparian and wetland areas are considered to be functioning properly when adequate vegetation, landform, or large woody debris are present to dissipate stream energy associated with high water flows, thereby reducing erosion and improving water quality. The process used to assess Proper Functioning Condition is described in BLM Technical References 1737-9 and 1737-15. Proper Functioning Condition is reassessed on a three-year rotating basis. A binder containing monitoring information, such as Proper Functioning Condition results, reassessment schedules, and photo-point monitoring photos, for each designated riparian reach is being compiled and maintained in the Socorro Field Office.

Although the BLM standard is to use proper functioning condition assessments, trend assessments can quickly provide initial information about progress toward desired conditions. Trend assessments include the following: wildlife and aquatic monitoring, water quality monitoring, Rosgen channel typing, riparian site classification, assessment of change over time towards meeting desired range of conditions, low-level aerial photography, and remote-sensing technologies. Riparian areas also are required to meet the riparian standard of the New Mexico Standards and Guidelines (see Appendix E).

Attainment of Proper Functioning Condition (BLM 1993, 1998) objectives is considered a minimum step in the process of achieving desired range of conditions. Proper Functioning Condition and other riparian objectives in most cases do not equate to the desired range of conditions. Determination of Proper Functioning Condition and riparian management objectives is an interdisciplinary process. To determine improvement in conditions relating to lotic proper functioning condition, monitoring methods are described for all assessment categories in BLM Technical Reference 1737-15 (1998).

Photo Points and Aerial Photos – Photo points are established during Proper Functioning Condition assessments. Photo sets taken at specific repeatable locations subjectively show changes in stream channels and vegetation over time. Photo points can be very useful to illustrate changes at specific points over time. Aerial photos show changes in channel and vegetation over the length of a stream. They include enough detail to monitor woody species changes over time.

Wild Horses

A monitoring plan will be developed to measure the achievement or nonachievement of objectives. Routine monitoring within the Herd Management Area would be conducted on habitat and wild horses at a minimum of once every three years or prior to the next gather. Monitoring of habitat may consist of utilization of key forage species, trend of vegetation, precipitation, and water availability.

Various types of census methods may be used to determine the number and distribution of wild horses. Census methods recommended by the National Academy of Science Committee on Wild Free-Roaming Horses and Burros will be used to determine population size.

Data used to assess herd condition and health will be collected during the census, when conducting gathers, or from routine observations. This can include age and sex structure of the herd, lactation and pregnancy, distribution, band size, color, height, physical condition, and behavior. At times, blood samples may be drawn from horses to test genetic diversity.

FORESTRY AND WOODLAND

The forestry program will be monitored prior to and following silvicultural treatments utilizing standard forest stand exams to determine forest or woodland species, trees per acre, size classes, and overall forest or woodland health. Permanent plots will be established, including photo points. Line transects will also be utilized to determine cover and composition changes over time. These plots will be read on a schedule that reflects condition of the site and goals for future desired condition of the vegetation.

The vegetative sales program would be monitored prior to and following establishment of vegetative sales collection sites using permanent plots established for photo points. These plots will be read on a schedule that reflects condition of the site, to ensure no undue resource damage has occurred from harvesting plant materials.

For both the forestry and vegetative sales programs, regular site visits throughout the year would be a part of the monitoring program to ensure signs are in place, the public is properly permitted, and the public is not entering areas under wet conditions.

OUTDOOR RECREATION

Monitoring would occur on an ongoing annual basis and would include periodic patrols to check boundaries of recreation areas and signing; ensure visitor compliance with rules and regulations; establish baseline data, as needed; determine current impacts from recreational use; and record data to help determine appropriate levels and patterns of recreational use and the influences of other resource uses. Monitoring would focus on visitation levels; compliance with rules, regulations, and permit stipulations for developed sites; dispersed uses; permits; and prescribed standards and guidelines as set forth in planning documents and the recreation opportunity spectrum classes. Methods of monitoring could include one or more of the following: traffic counters; surveillance at developed sites; limits of acceptable change studies, as needed; user contacts; monitoring of permitted events; and photo documentation of changes in resource condition over time. These data would be used to manage visitor use, develop plans and projects to reduce visitor impacts, and meet visitor expectations and demands. The level of monitoring would be contingent on available funding.

TRANSPORTATION/ACCESS – OFF-HIGHWAY VEHICLES

Overall monitoring and evaluation of the Socorro Field Office's Transportation System would be reviewed and updated as needed.

Monitoring OHV uses within the Planning Area would be ongoing with a focus on compliance with specific designations, as well as determining whether these uses are in compliance and/or causing adverse effects on various resources. Methods of monitoring would include visitor contacts, permit review, visual surveillance, traffic counters, periodic patrols to check area boundaries and routes, signing, and visitor use. Aerial reconnaissance and use of satellite imagery could be used as well. Closures would be monitored to ensure public safety and protect affected roadbeds or areas. Baseline data would be established for sites where OHV use is occurring, and sites would be rehabilitated or closed as necessary, contingent on available funding.

VISUAL RESOURCES

Monitoring would be ongoing for all projects (including but not limited to projects associated with any developments, land alterations, vegetation manipulation, etc.), which could potentially affect visual resources. These projects would be monitored to ensure compliance with established visual resource

management classes. Monitoring would include use of the visual contrast rating system, described in BLM Manual 8400 (BLM 1984), where appropriate, during project review.

CULTURAL RESOURCES

There are two kinds of cultural resource site monitoring: one consists of field examination to assess whether any impacts have occurred resulting from Section 106 undertakings, and the other is to assess any natural or human-caused impacts that are not related to authorized Federal undertakings.

Section 106 monitoring will be conducted when deemed appropriate by the Resource Area archaeologist or the Socorro Field Office Manager (i.e., when project design constraints do not allow for standard buffers for site avoidance).

Non-Section 106 monitoring of BLM-administered cultural resources in the Socorro Field Office area of jurisdiction will be conducted as staffing levels and workload permit, with a minimum of 10 site visits per year. Sites for non-Section 106 monitoring will be prioritized as follows:

1. National Register eligible sites reported to be undergoing effects from natural or human caused phenomena.

2. Sites of outstanding significance, particularly if they are considered vulnerable or at-risk such as sites in areas of intense recreation use and sites in urban interface areas.

3. Sites chosen based on accessibility to staff or volunteers. For example, sites near a current project area.

SPECIAL MANAGEMENT AREAS

Wilderness Study Areas

Wilderness Study Areas (WSAs) would be managed under the Interim Policy and Guidelines for Lands Under Wilderness Review (BLM 1995). The interim management policy requires monitoring of all WSAs on a regular basis to ensure wilderness characteristics are maintained. Monitoring levels could vary by WSA depending on use, access, conflicts, and other considerations. Monitoring boundaries and OHV area and route designations is a priority action during patrols of WSAs. Methods of monitoring could be both motorized along WSA boundaries and open routes, and non-motorized. Aerial surveillance, visitor contact, and permit compliance also would be used as part of monitoring. Projects or uses allowed under the interim management policy also would be closely monitored to ensure compliance and protection of wilderness characteristics. WSAs also would be monitored to ensure any unauthorized activities are documented and rehabilitated as needed.

Special Designations Management

All the special designations including areas of critical environmental concern, special recreation management areas, and special management areas would be assessed on a periodic schedule in order to evaluate maintenance and enhancement of relevant and important values, in the case of areas of critical environmental concern, and the other values for which other areas were designated for special management. All areas also would be evaluated to determine the effectiveness of management in maintaining those values. Monitoring may include collection of both qualitative and quantitative data. Monitoring methods would be the same or similar to those described above for the various resource management programs.

LAND AND REALTY

All authorized rights-of-way, permits, and leases including recreational and public proposes authorizations will be monitored by both the holder and the Authorized Officer. The holder will be responsible for complying with the terms and conditions of the grant and 43 Code of Federal Regulations (CFR) 2805.12 to ensure that public health, safety, and welfare are protected, and that the right-of-way, permit, or lease is in accordance with the State and local laws and that the terms and conditions of the authorization are being followed. The monitoring may involve but not be limited to conducting repetitive inspections, data gathering, or technical investigation. The frequency and type will depend on the resource values at risk, the holder's past performance record, and the ability to obtain monitoring services.

The Authorized Officer will periodically conduct inspections of the area to ensure the protection of resources and that the management objectives in the land use plan are being met. These inspections will also confirm the holder is in compliance with the terms and conditions of the authorization, rental fees are being properly calculated, and the protection of the public health and safety is not being jeopardized. The Authorized Officer may conduct joint inspections with the holder. Written documentation of the inspections will be file in the casefile.

Prior to surface-disturbing activities, the Authorized Office may require the holder not to proceed until the Authorized Officer has issued written notice to proceed. The Authorized Officer may conduct inspections during construction. The frequency and type of inspection will be depend on the resource values at risk, type of activities involved with the authorization, and the holder's previous performance record.

Each Recreation and Public Purpose Act lease and patent will periodically receive an examination as to the terms, plan of development, timetable for construction plan of management, etc., in order to comply with the law. According to the BLM Handbook H-2740-1 Chapter 8, compliance checks should be scheduled at a minimum at intervals of five years after a lease or patent has been issued. Additional checks may be required in circumstances where the plan of development shows completion or substantial development of the proposed project in less than five years, the lease specifies a nonuse period shorter than five years, or receipt of a complaint alleging lands are being used for a purpose not authorized in the lease or patent. The compliance checks may be conducted by the holder, a third-party contractor, or other regulatory entity.

SOILS

Manage uses to minimize and mitigate disturbances to soils and loss of soil sediments from erosion. Maintain soil stability to protect soil ecological health and long-term productivity.

Soil health will be monitored through the use of the Rangeland Standards assessments that assess vegetative and soil conditions. The schedule of monitoring varies for allotment evaluations. These evaluations monitor utilization, vegetative trends, and ground cover. Specific localized soil erosion areas will be evaluated for rehabilitation efforts.

WATER RESOURCES

Manage uses to maintain or improve overall watershed health by maximizing infiltration for groundwater recharge. Manage uses to maintain or improve surface water quality in watersheds, and watersheds which affect streams that are listed as water quality limited under the Clean Water Act, Section 303 (d). Manage resources to maintain or reduce salinity loading in accomplishing the goals and objectives outlined in the Colorado River Salinity Control Act.

Watershed health will be monitored through the use of the Rangeland Standards assessments that assess vegetative and soil conditions. The schedule of monitoring varies for allotment evaluations. These evaluations monitor utilization, vegetative trends, and ground cover.

AIR QUALITY

Ensure BLM authorizations and management activities comply with Federal, State, and local air quality regulations, requirements, and implementation plans. Protect ground cover to minimize wind erosion of soils. No specific air monitoring is planned.

FIRE MANAGEMENT

Monitoring studies would be encouraged on all emergency fire rehabilitation projects to determine whether emergency fire rehabilitation objectives were met.

Monitoring would be implemented on all projects that employ new techniques, seed mixes, or rehabilitation methods. Emergency fire rehabilitation funds may be used to fund monitoring studies for up to three growing seasons following fire control.

Pre-fire condition and post-fire effects would be determined by monitoring plant community composition and trend in burn areas to determine natural recovery, responses from seed planting, and weed and cheatgrass invasion. Monitoring methods would include establishing photo points, density, cover, frequency plots (pre- and post-burn), and ocular estimates.

MINERALS

Monitoring of activities on mining claims would be conducted to ensure compliance with the 43 CFR 3802/3809 regulations. These regulations provide for locatable mineral activities on public lands while preventing unnecessary or undue degradation, and provide for reclamation of disturbed areas and coordination with State agencies. BLM policy establishes minimum inspection frequencies for mining operations as follows: quarterly inspections are required for all operations using cyanide, and biannual inspections are required for all other active operations. Operations in sensitive areas or operations with a high potential for greater than usual impacts are inspected more often.

For fluid mineral leases, inspections would be conducted to determine compliance with applicable laws, regulations, conditions of leases, and the requirements of approved exploration and development plans. Where mineral production is occurring, inspections would ensure (1) an accurate accounting of materials removed; (2) proper compensation to the Federal government; (3) protection of the environment, public health and safety; and (4) identification and resolution of salable mineral trespass. Operations in sensitive areas or operations with a high potential for greater than usual impacts would be inspected more frequently.

For saleable mineral operations, inspections would be conducted to determine compliance with applicable laws, regulations, and the requirements of approved mining plans. Where mineral production is occurring, the goals of the salable mineral inspection and enforcement/production verification program are (1) an accurate accounting of materials removed; (2) proper compensation to the Federal government; (3) protection of the environment, public health and safety; and (4) identification and resolution of salable mineral trespass. Operations in sensitive environmental areas or operations with a high potential for greater than usual impacts would be inspected more often.

CAVES AND KARST RESOURCES

The purpose of a monitoring program for Cave and Karst areas is to facilitate improved management through monitoring and research and to protect natural and scenic values while allowing for recreation, and educational and scientific uses where such use does not conflict with protecting unique values.

Conduct inventories and long-term general and specific ecological studies relating to the requirements of cave habitats for special status species. Determine population trends, threats, and habitat change by monitoring populations of all special status species using cave or karst habitats. Gather baseline information on habitat use by all species. Establish photo monitoring points and periodically take photos to record any changes. Use Limit of Acceptable Change techniques to monitor impacts from visitor use. Employ visitor surveys to determine visitor use, visitor satisfaction with their experience, and effectiveness of any interpretation or educational programs and facilities. Monitor the effects of any constructed projects or developments on wildlife and habitat use.

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Appendix E

Recreational Opportunity Spectrum Definitions and Visual Resource Management Class Objectives

APPENDIX E
RECREATIONAL OPPORTUNITY SPECTRUM DEFINITIONS AND VISUAL RESOURCE MANAGEMENT CLASS OBJECTIVES

RECREATIONAL OPPORTUNITY SPECTRUM

The recreation opportunity spectrum (ROS) provides the conceptual framework for inventory, planning, and management of recreation resources. The ROS recognizes that people differ in their needs and the experience they desire. Also, the resource base is not uniform; it varies in its potential for providing recreation experiences. The ROS provides a way to characterize either the capability of a resource to provide an experience or the demand for an experience in terms of the activity opportunity and setting opportunity provided or demanded. Therefore, recreation opportunities can be expressed in terms of three components: (1) the activities, (2) the setting, and (3) the experience. The possible combinations of these three components are arranged along a continuum or spectrum. The ROS is divided into six classes, with each class defined in terms of its combination of activity, setting, and experience opportunities. The six classes are primitive, semi-primitive non-motorized, semi-primitive motorized, roaded natural, rural, and urban. As conceived, the spectrum has application to all land, regardless of ownership or jurisdiction. Classes are described as follows.

Primitive

This is essentially an unmodified natural environment of fairly large size. Use of motorized vehicles is prohibited. There is an extremely high probability of experiencing isolation, closeness to nature, and self-reliance on outdoor skills. Activities may include hiking, nature study, fishing, cross-country skiing, and floatboating.

Semi-primitive Non-motorized

This is a predominantly natural or natural-appearing environment of moderate to large size. Minimum on-site controls and restrictions may be present. Use of motorized vehicles is prohibited. There is a high probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills. Activities may include camping, hunting, snowshoeing, and floatboating.

Semi-primitive Motorized

This is a predominantly natural or natural-appearing environment of moderate to large size. User interaction is low, but there is evidence of other users. Minimum on-site controls and restrictions may be present. Use of motorized vehicles is permitted. There is a moderate probability of experiencing isolation, closeness to nature, and self-reliance in outdoor skills. Activities may include boating, motor biking, specialized landcraft use, mountain climbing, driving for pleasure, camping, and picnicking.

Roaded Natural

This is a predominantly natural-appearing environment with moderate evidence of humans. Evidence usually harmonizes with the natural environment. Management provides for the use of conventional motorized vehicles. There is an equal probability to experience affiliation with other user groups and for isolation and interaction with the natural environment. Challenge and risk opportunities are not very important, although testing of outdoor skills may be. Opportunities for both motorized and nonmotorized recreation are available. Activities may include bus touring, water skiing, walking, canoeing, sledding, and driving for pleasure.

Rural

This is a substantially modified environment. Resource modifications and utilization practices are to enhance specific recreation activities. Facilities are designed for use by a large number of people. Motorized use and parking opportunities are available. The probability of user interaction is moderate to high, as is the convenience of sites and opportunities. These factors are generally more important than the physical setting. Wildland challenges and testing of outdoor skills are generally unimportant. Activities may include interpretive services, swimming, bicycling, recreation cabin use, and skiing.

Urban

This is a substantially urbanized environment, although the background may have natural-appearing elements. Renewable resource modernization and urbanization practices are to enhance specific recreation opportunities. Vegetative cover is often exotic and manicured. Large numbers of users can be expected on site and in nearby areas. Facilities for highly intensified motor-vehicle use and parking are available. The probability of user interaction is high, as is the convenience of sites and opportunities. Experiencing natural environments and uses of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses are common. Activities may include resort lodging, ice skating, team sports participation, tour boat use, and picnicking.

VISUAL RESOURCE MANAGEMENT CLASS OBJECTIVES

The Federal Land Policy and Management Act requires the Bureau of Land Management to consider the effects of management actions on the visual quality of the landscape. To protect visual resources, all public land is inventoried to determine its Visual Resource Management classification. The Visual Resource Management objectives for each of the four possible classifications are described below.

Class I

The objective of this classification is the *preservation* of the existing landscape's character. Providing for natural ecological changes, this class allows limited management activity. The very low level of change must not attract attention. Class I is assigned to those areas in which management decisions have been made to preserve a natural landscape. Thus, the class includes wilderness study areas and other congressionally and administratively designated areas.

Class II

The *retention* of the existing character of the landscape is the objective of this classification. The level of change to landscape characteristics should be low; management activities may be seen but should not attract the attention of a casual observer. Any alterations must conform to the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III

The objective of Class III is the *partial retention* of the existing landscape character. Moderate levels of change are acceptable. Management activities may attract attention but should not dominate the casual observer's view. Changes should conform to the basic elements of the predominant natural features of the characteristic landscape.

Class IV

Class IV provides for major landscape *modification* management activities. These management activities may dominate the view and become the focus of viewer attention. Every effort should be made to minimize the impact of these projects by carefully locating activities, minimizing disturbance, and designing the projects to conform to the characteristic landscape.

Appendix F

Land and Minerals Disposal Policy and Plan for Right-of-Way Exclusion and Avoidance Areas

APPENDIX F
LAND AND MINERALS DISPOSAL POLICY AND PLAN FOR RIGHT-OF-WAY EXCLUSION AND AVOIDANCE AREAS

SURFACE ESTATE DISPOSAL POLICY

All surface estate disposal actions require the preparation of a mineral report to assess the mineral potential of the property prior to disposal.

Any potential interference with mineral development will be considered through the disposal process. The creation of a split surface-mineral estate causing surface interference with Federal mineral development will be avoided to the extent possible. Any surface disposal action will closely analyze potential impacts to Federal mineral material development. All surface estate patents within areas of known coal potential will carry a reservation of surface owner consent rights under the Surface Mining Control and Reclamation Act of 1977.

The following items will be examined when considering the merits of any disposal:

- Consistency and conformance with current planning
- Consistency with mineral resource policy and fluid mineral leasing procedures
- Potential effects on special status species and their habitat
- Potential effects on recreation and wilderness values
- Potential effects on prime and unique farmland
- Floodplain and flood hazard evaluation
- Potential effects on cultural and paleontological resource values
- Potential effects on American Indian religious values
- Potential effects on visual resources
- Potential effects on ACECs
- Potential effects on wetlands
- Potential effects on existing rights and uses
- Public controversy
- Potential effects on health and safety
- Potential effects on adjacent uses and ownership
- Potential effects on air resources

The following procedures will be followed for the various types of surface estate land disposal actions in the Socorro Field Office Area:

Exchanges

Disposal by exchange must meet the criteria outlined in the Federal Land Policy and Management Act (FLPMA) Sec. 206, whereby it is determined that the public interest will be well served by making the proposed exchange. Exchanges within designated retention areas may be possible if it is clearly

determined that it is in the best interest of the public. The following principles will guide the Socorro Field Office in its land exchange program.

1. The Socorro Field Office will continue to strive to process mutually benefiting, public interest land exchanges in a timely and efficient manner.
2. Acquisition through exchange rather than purchase of lands or interests in lands required for resource management programs will always be the preferred method of acquisition, as this will reduce the expansion of Federal real estate holdings and help to assure the integrity of State and local tax basis.
3. Comments from State and local governments and the general public shall be sought and considered before completion of each exchange.
4. Patent and deed reservations and conditions will be kept to the absolute minimum necessary to complete the transaction. Rights of third-party right-of-way holders and other legal interests in the exchanged lands will be protected.
5. The generally preferred rule is for both surface and subsurface (mineral) estates to be traded in an exchange. However, due to third-party encumbrances, or difficulties in the valuation process, it may be preferable to complete certain exchanges with reservations. Such exceptions to the generally preferred rule are to be made on a case-by-case basis.
6. Exchanges shall be utilized to consolidate the surface and subsurface estates for both the Federal government and non-Federal owners in split estate situations.
7. Exchanges may be utilized to affect ownership and management area boundary changes or adjustments and to form more logical and efficient land and resource management areas for both the Federal government and non-Federal owners.
8. As the law permits, expenses incurred by the Bureau of Land Management (BLM) on exchange actions for the benefit of other Federal agencies shall be recovered from the benefiting agency. The BLM shall not attempt to recover nominal costs.
9. When an exchange involves the cancellation in hold or in part of a grazing permit or lease, the compensation for rangeland improvements and 2-year notification requirements of Section 402(g) of the FLPMA and 43 Code of Federal Regulations (CFR) 4110 will be met.
10. The acquisition of nonpublic lands containing unique or unusual historic, cultural, mineral, recreational, scientific, and scenic or wildlife habitat values will be pursued when formulating any exchange proposal.

Sales

Property selected for sale must be identified as being potentially suitable for disposal in an approved land use plan and must meet one or more of the criteria outlined in the FLPMA Sec. 203. In addition, if the tract is 2,500 acres or more, procedures outlined in Sec. 203(c) must also be followed. The disposal criteria is as follows:

- Such tract because of its location or other characteristics is difficult and uneconomic to manage as part of the public lands, and is not suitable for management by another Federal department or agency; or
- Such tract was acquired for a specific purpose, and the tract is no longer needed for that or any other Federal purpose; or

- Disposal of such tract will serve important public objectives, including but not limited to expansion of communities and economic development, which cannot be achieved prudently or feasibly on land other than public land and which outweighs other public objectives and values, including but not limited to recreation and scenic values, which would be served by maintaining such tract in Federal ownership.

Anticipated environmental impacts to existing resources such as minerals, wildlife, recreation, range, cultural resources, wilderness values, floodplains, paleontological values, visual resources, areas of critical environmental concern, wetlands, threatened or endangered rivers, prime or unique farm lands, and social and economic conditions, will be considered during the preparation of each environmental assessment. The environmental assessment will be used to determine whether the subject parcel is suitable to be offered for sale. Once this determination has been made, a fair market appraisal of the property will be completed to set the minimum acceptable bid.

If a tract is determined suitable for sale, the environmental assessment will analyze the method of sale that will be used to dispose of the tract. Several factors are considered in determining the method of sale which include but are not limited to the needs of State and/or local governments, adjoining landowners' interests and concerns, public policies, historical uses, and equitable distribution of the land. In accordance with 43 CFR 2711.3, the Socorro Field Office policy for determining the sale method is as follows:

1. Competitive bidding is the preferred method of sale and will be used where clearly there will be a number of interested parties bidding for the land and they could make practicable use of the land regardless of adjoining landownership. Competitive bidding will also be used where the land is clearly within a developing or urbanizing area and land values are increasing due to their location and interest on the competitive market. If there are no overriding bases for modifying competition or direct sale, the land will be offered through competitive bidding. The normal practice for competitive sales is to first offer the land for sale by sealed bids; if unsold, the tract is offered for sale over-the-counter.
2. Modified competitive bidding may be used to permit the existing grazing user or adjoining landowner to meet the high bid or to limit the number of persons permitted to bid on the land. These sales will normally be for lands not located near urban expansion areas or in areas with rapidly increasing land values, when there is a need to avoid jeopardizing existing use of adjacent land, to assure compatibility of the possible uses with adjacent lands, and avoid dislocation of existing users. This procedure will allow for limited competitive bidding to protect ongoing use.
3. Direct (without competition) sales may be used when, in the opinion of the Authorized Officer, the public interest would best be served. Examples include but are not limited to:
    - A tract identified for transfer to State or local governments or nonprofit organizations; or
    - A tract identified for sale that is an integral part of a project or of public importance and speculative bidding would jeopardize the timely completion and economic viability of the project; or
    - There is a need to recognize authorized use such as an existing business which would be threatened if the tract were purchased by other than the authorized user, or
    - A tract is surrounded by land in non-Federal ownership and does not have public access; or
    - The lands support inadvertent unauthorized use or occupancy.

4. When lands have been offered for sale under direct or modified bidding procedures and they remain unsold, then the land will be re-offered by the competitive bidding procedure. In no case will the land be sold for less than fair market value.

Public participation and intergovernmental coordination will be sought and encouraged during the development of each sale. Where a decision is made to dispose of land within a grazing allotment, permittees and lessees shall be given 2 years prior notification before their grazing preference may be cancelled in whole or part. A permittee or lessee may unconditionally waive the 2-year prior notification.

The lands may be disposed at any time, provided a condition of the exchange or sale allows the existing grazing user to continue grazing livestock on the land for at least 2 years from the date the 2-year notice is received. 43 CFR 2711.1-3 addresses sales requiring grazing permit or lease cancellations.

In such cases, the condition of the disposal will include the same terms and conditions as the permit/lease in regard to numbers, kind of livestock, season-of-use, animal unit months, and maintenance of range improvements. Fees must be the same as the Federal grazing fees.

Grazing permittees/lessees will receive fair market value (less salvage value) for their interest in authorized permanent rangeland improvements located on public lands in accordance with 43 CFR 4120.3-6. Compensation for grazing improvements under the land sale action is addressed in 43 CFR 2711.4-1. If floodplain tracts are designated for disposal, the patent will contain language indemnifying the United States against any claims for loss or injury due to flooding.

Lands designated as retention areas may be offered for disposal through a competitive sale unless the authorized officer determines the interest of the public would best be served by modified competitive bidding or direct sale (WO IM-2002-143). Land ownership pattern within these areas are moderately consolidated and contain small tracts of land. Land sale may be pursued if the disposal of lands within designated retention areas, not including areas of critical environmental concerns (ACECs), special management areas (SMAs), and special recreational management areas (SRMAs) would help enhance manageability and consolidate land status. Several parcels have no legal public access which makes manageability difficult. The parcels offered for disposal shall contain no known significant resources values.

Wilderness study areas (WSAs) and retention areas within ACECs, SMAs, and SRMAs shall be excluded and unavailable for disposal through sales and/or exchanges. Consolidation of ownership within these specially managed areas would be through acquisition of state and private lands to continue improving the ownership and manageability. Any exchange involving lands within retention areas must be exchanged for lands with a higher resource value than lands being disposed.

Direct sales must be clearly determined by the authorized officer to ensure that the sale is in the best interest of the public. When lands have been offered for direct or modified bidding and they remain unsold, the land will be re-offered under competitive bidding procedures. Mineral (subsurface) estate will be retained for all sales that occur within designated retention areas. Permittees will be given 2 years prior notification to disposal of lands within a grazing allotment (permits/leases) before their grazing may be cancelled in whole or part.

Recreation and Public Purposes Patents

The Socorro Field Office will continue to issue patents to qualified governmental and nonprofit entities for public parks and recreations sites under the Recreation and Public Purposes (R&PP) Act. These patents may be issued at less than fair market value as outlined in 43 CFR 2740. Applications for patent of public lands under the R&PP Act will be processed as a Socorro Field Office priority under the requirements of the National Environmental Policy Act and will be subject to public review. Current policy dictates that new sanitary landfill sites will be patented and no new lease will be issued in the Socorro Resource Area pursuant to the R&PP Act. R&PP applications may be entertained in either retention or disposal zones; yet, a determination must always be made that the disposal action is in the public's interest.

Mineral Estate Disposal Policy

Disposal of the mineral estate is possible under Sections 206 and 209 of the FLPMA. It is the policy of the BLM to avoid disposing of the surface estate while retaining the mineral estate unless there are areas of "known mineral value," as defined in 43 CFR 2720.0.5. In areas of "known mineral value," the mineral estate (and the surface estate if substantial interference to development will result) should be retained except as described below.

Prior to any land disposal a "mineral value" determination must be made following a field reconnaissance by a BLM mineral examiner. A mineral report must be written to evaluate the leaseable, locatable, and saleable mineral potential of each proposed sale or exchange. Under the FLPMA, the conclusion of the mineral examiner will include an opinion as to whether the lands have "known mineral values." If professional judgment concludes that the land does not contain "known mineral values," the surface and subsurface estate may be conveyed, subject to any existing mining claim(s) or mineral leases.

A mining claim of record under Section 314 of the FLPMA generally prevents an exchange or sale. If the land is under mining claim, the surface should be retained under Federal ownership or the claim examined for validity. However, a validity examination may be waived and the BLM may proceed with the sale or exchange of both the surface and the mineral estate, subject to the existing mining claim(s) if:

- The land meets the criteria for disposal as determined through land-use planning; and
- The land has no "known mineral value" as determined by a BLM geologist or mining engineer; and
- The prospective patentee is willing to accept defensible title, preserving whatever rights the mining claimant may have. Conveyance of the surface and mineral estate would be subject to "existing mining claim(s)," allowing the mining claimant to apply for and receive full fee patent if a valid discovery were made prior to the date of transfer under Sections 206 or 209, or alternatively, receive patent to the mineral estate only if discovery were made after the original conveyance.

The BLM will proceed with a sale or exchange only after reasonable efforts have been made to secure relinquishment of the mining claims(s). If the mining claimant opposes the action, the Notice of Realty Action protest procedures will apply.

For a direct sale or an exchange, the proponent must be informed early and fully of the potential title conflicts and rights of the mining claimant under the law. The BLM should then proceed only if these

conditions are acceptable to the proponent. For a proposed competitive sale, the field office must carefully consider the effect on sale price, likelihood of success, and interests to be served if the sale is made subject to the rights of the mining claimant. If it is clearly in the public interest to proceed, the BLM must secure purchaser waiver of any liability against the United States in the event of subsequent title litigation.

In cases where lands are patented without a reservation of locatable minerals, a FLPMA patent is believed to have standing to bring private contest (43 CFR 4.450) against the mining claim(s). Should he or she do so, the burden is upon the patentee to prove lack of discovery. If the patentee is successful, or if the claims are abandoned or relinquished, the land will not be open to further location, and the patentee will receive full title to the involved locatable minerals.

Mining claim locations and mineral leases for lands in which the surface title has passed under the FLPMA disposal authority may be made only after regulations providing for such locations or leasing have been promulgated. Because these regulations have not as yet been issued, lands disposed of under the FLPMA are subject to de facto withdrawal. Lands disposed of under the FLMPA are not withdrawn from mineral material sales or free-use permits.

All minerals must be reserved if the Federal lands are conveyed out of Federal ownership pursuant to the FLPMA disposal authority, except in the limited instances that follow:

1. Sales
   a. If the public lands proposed for sale are determined to have “known mineral values” for locatable, leaseable, or saleable minerals, one of the following courses of action may be taken:
      (1) Reject the offer to purchase or cancel the offer of sale.
      (2) Dispose of the surface estate and reserve all of the mineral interests to the United States.
      (3) Dispose of the surface and convey all or part of the mineral interests under terms set forth in Section 209(b) of the FLPMA.
   b. If the lands have no “know mineral value,” the mineral interests may be simultaneously disposed of with the surface estate under authority of Section 209(b) of the FLPMA.
2. Exchanges
   a. Public lands which do not have “known mineral values” may be offered to exchange without any mineral reservation. This will apply whether or not the non-Federal party in an exchange controls the minerals under his or her land.
   b. If the public lands have some potential for mineral development, reserving the mineral interests is not mandatory as long as the values can be equalized by the payment of money and so long as the payment does not exceed 25 percent of the total value of the land.

      In any case, normally it is desirable to keep surface and mineral ownership together in an exchange, whenever possible, to eliminate future problems associated with split estate ownership.

c. If the public lands in an exchange are determined to have “known mineral values” for locatable, leasable, or saleable minerals, it may be in the public interest to cancel the offer, depending upon the significance of the deposits. The leasable minerals alone can be reserved if significant.

RIGHT-OF-WAY AVOIDANCE AND EXCLUSION AREAS PLAN

The Draft Socorro Resource Management Plan Revision/Environmental Impact Statement identified a number of right-of-way avoidance and exclusion areas within the Socorro Decision Area. This approach would allow a right-of-way applicant to review resource area maps to determine what areas are closed to development and which open areas are subject to thorough examination with the potential for application rejection. All applicants would be notified that their project, if placed in an avoidance area, may be subject but not limited to requirements for recontouring and/or revegetating disturbed areas, painting certain above-ground structures to blend with the surrounding landscape and vegetation, and using special tower design and/or pole color.

All designated right-of-way exclusion areas would be closed to all forms of new right-of-way development. BLM Manual 1623.51 A. 1c states that right-of-way exclusion areas are areas where future right-of-way may be granted only when mandated by law. Mining claimants cannot be denied reasonable access to an exclusion area unless the land is withdrawn from mineral entry (see 43 CFR § 3809.0-6). The majority of the right-of-way exclusion areas are within wilderness study areas, areas of critical environmental concern, and areas assigned visual resource inventory class I (Visual Resource Management Class I). Class I is assigned to areas where management decisions have been made to preserve the scenic values within the natural landscape. The objective of this class is to greatly minimize any level of change to the existing characteristic of the landscape. As a point of clarification, it should be recognized that many of the areas or portions thereof discussed within this plan are presently under wilderness review and designated as wilderness study areas. There are 13 wilderness study areas totaling approximately 291,826 acres within the Socorro Decision Area. These lands are presently being managed under the Interim Policy and Guidelines for Land Under Wilderness Review dated July 5, 1995, and will continue to be managed until they are either added to the National Wilderness Preservation System or removed from wilderness review. Any right-of-way authorizations granted in these areas after they are removed from wilderness review would be managed under the prescriptions within this plan.

All right-of-way applicants should be aware that a mining claimant may refuse to allow a right-of-way to cross a claim if such claim was located prior to July 23, 1955. In such cases, BLM would reject a right-of-way application request or would help the applicant in the consideration of an alternative route which would be acceptable.

The right-of-way avoidance areas are defined in the BLM Manual 1623.52 as areas where future rights-of-way may be granted only when no feasible alternative route is available. The purpose of the right-of-way avoidance areas is to reduce the likelihood of rights-of-way being placed in these areas. When possible, alternative routes and sites would be considered. The Authorized Officer would closely review goals and objectives for special designated areas identified as avoidance areas in the resource management plan. This process would guide the Authorized Officer to determine which right-of-way applications would be rejected upon submittal or processed for issue. All issued right-of-way grants would be subject to special resource mitigating measures or stipulations. The terms and conditions of all right-of-way grants depend upon the sensitivity of the affected resource, applicable laws and regulations, and management objectives of special designated areas identified in the Socorro Resource Management Plan. All right-of-way proposals would require the preparation of a site specific environmental analysis to determine impacts and mitigating measures needed to specifically protect sensitive resource values.

The right-of-way avoidance areas also apply to land use leases and permits in accordance with Section 302 of the FLMPA. The special designated areas identified in the Resource Management Plan, including areas of critical environmental concern, special recreation management areas, and special management areas, include management prescriptions which exclude or avoid leases as well as rights-of-way. Leases and permits related to realty or land actions would be discouraged within avoidance areas. In cases when the location of the proposed activity cannot be avoided, the Authorized Officer will analyze it on a case-by-case basis. All leases and permits would be subject to the same review as stated in the paragraph above. All issued leases and permits would be subject to special resource mitigating measures and/or stipulations. These mitigation measures and/or stipulations prescribed would depend on the sensitivity of the affected resources, applicable laws and regulations, and the objective identified in the Resource Management Plan.

All expansions of existing right-of-ways, permits, and leases located within the avoidance areas would be avoided. When avoidance is impossible, the proposed expansion would be subject to mitigation measures. The Authorized Officer would closely review the goals and objectives of the management area in which the proposed expansion would occur. This would help determine whether to reject or authorize the proposed expansion. All expansions which significantly conflict with the goals and objectives for special designated areas identified in the Resource Management Plan would be rejected upon submittal.

When the number of facilities within an avoidance area reaches the point of saturation, the Authorized Officer may determine that no additional authorization will be granted. This determination would be made on the basis of whether the management objectives for the Visual Resource Management class for the area can no longer support additional facilities without jeopardizing the visual quality of the area.

This plan may be modified by the Authorized Officer at any time and is intended strictly as a guideline for the authorization of new proposed right-of-way project within the Socorro Resource Area.

Right-of-way application requests for the following uses in avoidance areas would be rejected upon submittal:

- Power lines larger than 14 kilovolt
- Aboveground oil, gas, and water pipelines
- Radio telescopes
- Airport runways
- New roads with more than a 14-foot-wide driving surface
- Advertisement signs
- Artillery testing
- Dams/reservoirs
- Railroads
- Tramways and conveyors
- Communications sites
- Solar energy development projects greater than 5 acres
- Wind power energy facilities

The following right-of-way applications may be issued on a case-by-case basis within avoidance areas:

- Solar energy facilities such as photovoltaic systems
- Irrigation ditches and canals
- Buried oil, gas, and water pipelines
- Power lines smaller than 14 kilovolt
- Telephone lines (buried preferred)
- Water storage tanks
- Air quality monitoring stations
- Staging areas
- Fiber optics (buried preferred)
- Water wells
- New roads with equal to or less than a 14-foot-wide driving surface
- Monitoring and testing facilities
- Filming permits
- Biomass facilities
- Wind energy facilities

The above lists are not all-inclusive and further analysis may result in denial of the right-of-way application or mitigation of the proposed right-of-way to meet management objectives for avoidance areas.

The above criteria apply to all avoidance areas included within any special designation boundaries. The avoidance areas within special designations will have different criteria to allow for issuance of rights-of-way, permits, and leases. The special designated area goals and resource avoidance criteria are identified in the management prescriptions for wilderness study areas, areas of critical environmental concern, special recreation management areas, and special management areas.

Appendix G

BLM Stewardship Contracting Guidance

APPENDIX G
BLM STEWARDSHIP CONTRACTING GUIDANCE

The following information provides guidance on the preparation, implementation, and tracking of Bureau of Land Management (BLM) stewardship projects, in accordance with Section 323 of Public Law 108-7, the Consolidated Appropriations Resolution, 2003.

Authorization: Section 323 of Public Law 108-7 (Title 16, United States Code, Section 2104 as revised February 28, 2003 to reflect Sec. 323 of H.J. Res. 2 as enrolled [16 U.S.C. 2104]), the Consolidated Appropriations Resolution, 2003, amended Pub. L. 105-277, sec. 347, to grant the Forest Service (FS) and Bureau of Land Management (BLM) authority until September 30, 2013, to enter into stewardship projects with private persons or public or private entities, by contract or by agreement, to perform services to achieve land management goals for the National Forests or public lands that meet local and rural community needs.

A. General

1. Definition – Stewardship projects are those activities used to accomplish one or more of the goals (section B (1)) listed in P.L. 108-7, Section 323 (b) where the BLM would enter into contract or agreement for services to achieve land management goals and meet local and rural community needs. In addition, a source for performance under a contract must be selected on a best value basis. The legislation authorizes the value of vegetative material to be applied as an offset against the cost of services received; and multi-year contract authority greater than five years but not to exceed 10 years.

2. Stewardship Contracting is not a replacement for our (BLM) established timber sale program. Forest management projects designed primarily to enhance volume are not suitable for stewardship contracting.

3. Ensure all stewardship projects comply with applicable environmental laws and regulations, including the appropriate level of environmental review under the National Environmental Policy Act (NEPA), and are consistent with the applicable land use plans.

4. Field units may use stewardship contracting as a tool to achieve resource work identified through the normal planning processes and as described in the 10-year Implementation Plan for the National Fire Plan.

5. Any vegetative material removal must be a by-product of meeting the stewardship contracting project goals as stated in section B (1). Removal of these products must be consistent with the objectives developed through the collaborative process and the applicable land use plan objectives.

B. Project Design

1. The primary objective of a stewardship contracting project is to achieve one or more of the land management goals that meet local and rural community needs. These goals as identified in the authorizing legislation may include but are not limited to:

a. road and trail maintenance or obliteration for improved water quality;

b. soil productivity, habitat for wildlife and fisheries, or other resource values;

c. setting prescribed fires to improve composition, structure, condition, and health of stands or to improve wildlife habitat;

d. removing vegetation or other activities to promote healthy forest stands, reduce fire hazards or achieve other land management objectives;

e. watershed restoration and maintenance;

f. restoration and maintenance of wildlife and fish habitat; and control of noxious and exotic weeds and reestablishing native plant species.

2. When designing stewardship contracting projects, consider projects involving treatments and techniques available to make forests, woodlands, and rangelands more resilient to natural disturbances such as fire, insects, disease, wind, and flood.

3. For contracts exceeding five years in duration, Field Managers will include a concise rationale for contracts in project documentation. This rationale should consider such factors as the scope of the project, the type of the material to be treated, the availability of local capacity to process and use the material removed from the land, and the potential development of new markets for small diameter material, as well as operational factors such as local weather patterns, sensitive wildlife species habitat use cycles, and seasonal restrictions for wildfire prevention.

4. An open, collaborative process shall be used to identify local and rural community needs. Seek early involvement of tribal governments and local government agencies, and any interested groups or individuals in various phases of project development and implementation. Utilize existing processes (publication of legal notices, newsletters, web based information, etc.) to publicize the opportunity for public involvement and the availability of environmental documents.

C. Roles and Responsibilities

1. Washington Office

a. The responsibility of the Washington Office (WO), AD-200 Directorate, is to work with the WO AD-800 Directorate, the National Office of Fire and Aviation, and the BLM National Business Center to develop and implement automated methodology to track the value of goods exchanged and services provided in conjunction with stewardship contracting projects.

b. AD 200 will produce the annual report to Congress required by the authorizing legislation.

c. The BLM national headquarters office (AD 200) will review and the DOI Assistant Secretary for Land and Minerals Management will approve proposed stewardship contracts.

d. The national office will assign unique project numbers from a block reserved by the National Business Center (NBC). See F (2).

2. State Director

   a. State Director approval for proposed stewardship contracting projects will be required prior to submission to the Washington Office.

   b. BLM State Directors must ensure that field offices complete the reporting and tracking requirements identified in this directive.

   c. State Directors will set priorities for stewardship contracting projects within their state.

   d. The proper use and management of stewardship contracting authority must be assessed as a normal part of BLM statewide or national resource program and activity reviews for those programs utilizing the authority. Particular programs of interest include Forest and Woodland Management, and Fire/Fuels Management.

3. State Coordinators – Each State Office has assigned a stewardship contracting project coordinator for their respective state. Responsibilities of the stewardship contracting project coordinator include:

   a. clarifying stewardship contracting project guidance

   b. obtaining State Director review and approval

   c. monitoring project status

   d. ensuring that project reporting is accurate and timely

   e. soliciting Field Office feedback and making recommendations to the WO on ways to improve the effectiveness of the stewardship contracting tool.

4. Field Office

   a. Submit proposed stewardship contracting contracts to the state coordinators using the Budget Planning System (BPS) format (Attachment 1) Stewardship Proposal Format, including fuels funded projects. All submissions must contain project objectives, location/size, type of treatment in detail, partners and collaborative processes used, length of project, status of NEPA, issues and highlights and a list of contacts.

   b. During all phases of stewardship contracting (i.e. planning, contract development, funding, implementation and monitoring), the process will be integrated with other Field Office programs and activities, utilizing multiple resource specialists, including contracting personnel.

5. Contracting Officers

   a. Contracting Officers with Level III and IV warrants in the BLM National Business Center and Oregon State Office are delegated stewardship contracting authority according to the attached Delegation of Authority memorandum (Attachment 2), dated September 16, 2003, from the Assistant Secretary, Policy, Management and Budget.

b. After successful implementation of stewardship contracting projects, BLM may consider authorizing contracting officers in additional locations to assist in awarding stewardship contracts and agreements. At that time, the Head of Contracting Activity (HCA) should submit nomination(s) to the Office of Acquisition and Property Management for review and approval.

6. Contracting Officer's Representative – The "Contracting Officer's Representative (COR)" is the on-the-ground administrator for the Contracting Officer.

   The COR's authorities and responsibilities are defined in the COR's Designation Letter. The COR is authorized to clarify technical requirements, and to review and approve work clearly within the scope of work. The COR is NOT authorized to issue changes pursuant to the changes clause or to in any other way modify the scope of work.

7. Project Inspector – "Project Inspector" (PI) means the person designated by the COR to perform, as needed, on-the-job government inspection of work accomplished by the Contractor.

   The PI is responsible for checking the Contractor's compliance with the technical specifications, drawings, work schedule, and labor provisions at the site of the work.

D. Value Offset

1. The value of vegetative material may be used to offset the amount of appropriated funds necessary to accomplish service work as part of a stewardship contracting project.

2. Products that may be removed under stewardship contracting authority include vegetative material, such as, but not limited to sawlogs, firewood, post and poles, biomass, seed, shrubs, forage, fungi, and Christmas trees. See Special Forest Product Handbook, H-5400-2 or state specific Miscellaneous Forest Products Price Schedule, H-9352.

3. Vegetative material removed will be appraised at fair market value. Where practicable, and warranted by the market for such material, the value of the material will either be determined through a competitive bidding process or will be a specific required element of the best value criteria. In all cases, the value of the by-product for exchange must equal or exceed the appraised fair market value. Guidance on appraising the value of this material is provided in Attachment 3, Forest Products Appraisal Guidance for Stewardship Contracting.

4. The value of the vegetative material and the cost of the services to be performed must be clearly documented in the contract and on the Product Removal Report (see section J (1)). Before work can begin, the contractor must provide the government a proposed schedule of work (for a minimum of one work season), consistent with the contract for product removal, service work and net payments. As the contract is performed, the Field Office will record the actual volume and value (based on the contract bid price) removed, services performed, and net payments made as outlined in "Product Tracking Requirements," Section J.

E. Excess Receipts

1. When the value of the vegetative material exceeds the cost of the service work being performed in a stewardship project, the BLM is authorized to retain the excess receipts and to apply them to other stewardship projects without further appropriation.

2. Excess receipt collections from stewardship contracting projects shall be deposited according to BLM collection procedures into the Stewardship Project Fund and managed according to the definition and requirements contained in the BLM Fund Coding Handbook, H-1684-1. See Attachment 4, Subactivity 5921 Description.

3. In general, excess receipts shall be used to fund other stewardship projects within the State where the receipts were generated, as allocated by the State Director.

4. Funds generated as excess offset values (Section E (2)) from other stewardship contracting projects may also be used to fund the collaborative process used for multi-party monitoring and direct on-the-ground implementation costs. Excess offset values shall not be used to fund program planning, environmental assessments, overhead, administrative, or indirect costs. Managers should consult with the public and interested stakeholders early in the collaborative process for input on where excess offset values could be utilized within a stewardship project.

F. Project Submission, Funding and Accomplishment

1. Funds from a number of appropriated subactivities and permanent operating accounts may fund stewardship contracting project planning, preparation, implementation, administration, and monitoring. Offices should use the benefiting subactivity concept in determining which funding is appropriate to use.

2. All approved stewardship contracting projects will tracked in the appropriate budget submission and accomplishment tracking database, applicable to the funding used. Fuels – NFPORS, all other subactivities – BPS/MIS, see B(4)(a).

3. Each stewardship contracting project will be assigned a project code by the national office from a specific set of codes reserved for stewardship contracting projects for the purpose of tracking project costs and accomplishments in the Management Information System (MIS). Where other projects codes have already been assigned, such as in the Fuels Program, those assigned project codes will be reported to the Headquarters Office and used to track the costs associated with those projects The workload measure appropriate for the project will maintain the sub-activity specific tracking requirements.

G. Contracting/Product Sales

1. Stewardship contracting authority provides for the sale or exchange of vegetative material and the procurement of service work within one contract or agreement.

2. For stewardship contracting projects to be completed by contract with a combined value in excess of $100,000 (services plus product value), the contracts must be prepared using the Performance Based Acquisition format (under development – will be available on the National Acquisition webpage at http://web.blm.gov/natacq/).

3. For stewardship projects below the $100,000 threshold in G (2), either a service contract or an approved product sale instrument may be used. Typical prescriptive contract language (provisions or stipulations) would be used as appropriate for the contract/instrument and objectives of the project.

4. In addition to cost or price, the contracting officer must consider other “best value” factors, such as contractor past performance, technical approach, and local community benefits in determining contract award.

5. The use of nontraditional contractors, such as counties or not-for-profit or nongovernmental organizations, should be considered where interest is expressed and is consistent with existing authorities. Stewardship contracting contracts should not be automatically set aside for small business concerns.

6. For performance based contracts, the government reserves the right to review and revise the performance standards annually over the life of the contract by contract modification.

7. A stewardship contracting contract is not a timber sale contract and, as such, is not subject to the requirements contained in 43 CFR, Part 5400, Sale of Forest Products. However, it does not preclude including these requirements within a stewardship contract to adequately protect the government’s interests (i.e. export restriction and Non-substitution provisions).

8. Service Contract Act wage rates apply to the stewardship contracting contract. Contract solicitations should be arranged to separate bid prices, specifications, and payments for service work, construction work, and product removal work to help distinguish where these wage rates apply.

9. When required by law, bonding must be used to protect the public interest. When not required by law, bonding may be used when deemed necessary.

    a. Payment protection in the form of payment bonds should be used to protect the value of the by-product to be removed when the product will be removed prior to cash payment or the contractor’s earning of conservation credits under the contract.

    b. If necessary, performance bonds should be used to cover the value of the service to be provided.

    c. In either case: (i) performance bond value should be set at no less than 20% of the value of the awarded service work; and (ii) payment bonds should be at least equal to 20% of the value of the by-product not covered by cash payment and/or earned conservation credits.

    d. Contracting officers are encouraged to strive toward the concept of a single bond to cover "performance", which would include the product value (payment) and the service work rolled into one bond. The value of the bond would be the larger of the performance bond or payment bond as described above.

    e. If construction activities are included, bonding for the construction activities shall be in accordance with the Miller Act.

10. Offices must ensure that the value of the product cut and/or removed does not exceed the value of the performance bond (not including the portion used to cover 20% of the awarded service work or Miller Act requirements) plus the value of any unpaid service work completed (conservation credits) plus any cash deposits made by the contractor. Field Offices should use the Stewardship Project Tracking Report, Attachment 4, to track the volume and value of the

products removed to ensure that contract bonding and service work cover the government's interests.

11. If utilized, conservation credits (the value of unpaid service work completed) earned by a contractor are not transferable to another stewardship contract held by the same contractor. Conservation credits will be tracked via the Stewardship Project Tracking Report (page 2, Service Completion Form), Attachment 5.

H. Agreements.

1. Assistance agreements are designed to be used when an outside party requests government financial assistance to support a public purpose. Stewardship contracting projects are designed to achieve specific land management goals, consistent with applicable land use plans. As such, use of assistance agreements to implement stewardship contracting project treatments must be carefully screened and limited use of such agreements may result. (See Agreements Handbook H-1511-1)

2. Decisions to use Assistance Agreements rather than contracts must comply with existing BLM guidance implementing the Grants and Cooperative Agreements Act of 1977, as amended.

I. Monitoring

1. BLM will use multiparty monitoring, open to all interested parties, to monitor and evaluate a representative sampling of projects and programs at the appropriate levels. Project level monitoring should be conducted where sufficient public interest exists and funding and/or sufficient volunteer workforce permits. Where adequate up-front funding does not exist to support multiparty monitoring, excess offset values may be used to conduct multi-party monitoring, Section E (2).

2. WO-270 will coordinate with the Forest Service, on an appropriate time frame, a process to establish and/or conduct interagency multi-party monitoring for evaluating and reporting on collaboration and the role of local communities and other external stakeholders in the development of stewardship contracting contracts and agreements. One objective of this monitoring effort is to analyze the effectiveness of stewardship contracting relative to other management tools.

Appendix H

Rangeland Management

APPENDIX H
RANGELAND MANAGEMENT

NEW MEXICO STANDARDS AND GUIDELINES

The 1989 Socorro Resource Management Plan was amended by the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management Statewide Resource Management Plan Amendment and Environmental Impact Statement (New Mexico Standards and Guidelines). As a result of the amendment, the New Mexico Standards and Guidelines were incorporated into the 1989 Resource Management Plan, and would be carried forward in this Resource Management Plan Revision/ Environmental Impact Statement.

The standards of land health are expressions of physical and biological condition or degree of function required for healthy, sustainable lands and define the minimum resource conditions that must be achieved. The three standards that apply to the Planning Area are:

1. Upland Sites Standard

   Upland ecological sites are in a productive and sustainable condition within the capability of the site. Upland soils are stabilized and exhibit infiltration and permeability rates that are appropriate for the soil type, climate, and landform. The kind, amount, and/or pattern of vegetation provides protection on a given site to minimize erosion and assist in meeting State and Tribal water quality standards.

   Indicators for this standard may include but are not limited to:

   Consistent with the capability of the ecological site, soils are stabilized by appropriate amounts of standing live vegetation, protective litter, and/or rock cover.

   Erosion is indicated by flow patterns characteristic of surface litter soil movement, gullies and rills, and plant pedestalling.

   Satisfactory plant protection is indicated by the amount and distribution of desired species necessary to prevent accelerated erosion.

2. Biotic Communities, Including Native, Threatened-Endangered, and Special Status Species Standard

   Ecological processes such as hydrologic cycle, nutrient cycle, and energy flow support productive and diverse native biotic communities, including special status, threatened, and endangered species appropriate to site and species. Desired plant communities goals maintain and conserve productive and diverse populations of plants and animals, which sustain ecological functions and processes.

   Indicators for this standard may include but are not limited to:

   Commensurate with the capability of the ecological site, plant and animal populations are productive, resilient, diverse and sustainable.

Landscapes are composed of communities in a variety of successional stages and patterns.

Diversity and composition of communities are indicated by the kinds and amount of species.

Endangered and special status species are secure and recovering, with the goal of delisting and ensuring that additional species need not be listed within New Mexico.

3. Riparian Sites Standard

Riparian areas are in a productive, properly functioning, and sustainable condition, within the capability of that site. Adequate vegetation of diverse age and composition is present that will withstand high stream flow, capture sediment, provide for groundwater recharge, provide habitat, and assist in meeting State and Tribal water quality standards.

Indicators for this standard may include but are not limited to:

Stream channel morphology and stability as determined by gradient, width/depth ratio, cannel roughness, and sinuosity.

Streambank stability as determined by degree of shearing and sloughing, vegetative cover on the bank.

Appropriate riparian vegetation includes a mix of communities of species with a range of age, density and growth form.

When an evaluation determines that one or more standards are not being met, then the causal factor or factors will be determined. As stated in the Record of Decision for the Standards for Public Land Health and Guidelines for Livestock Grazing Management: "When an evaluation concludes that an area does not meet one or more standard(s), the Bureau of Land Management will determine the causal factor(s) in not meeting the standard(s). When current livestock grazing practices or levels of grazing use are determined to be significant factors, the Bureau of Land Management authorized officer shall take appropriate action as soon as practical, but no later than the next grazing year (43 Code of Federal Regulations Section 4180.2 (c))." Guidelines were established for livestock grazing to be implemented when an area was not meeting the standard or standards and the causal factor was determined to livestock grazing practices or levels of grazing use. Guidelines are tools such as grazing systems, vegetative treatments, or range improvement projects designed to assist in grazing management. Implementation of guidelines will be done in consultation, cooperation and coordination with the grazing permittee/leasee, involved landowners, and interested public.

Guidelines pertain to livestock grazing only and if the causal factor is determined to be another activity; there are not established guidelines to be implemented. When other activities appear to be the reason for not meeting the standard, management actions that address that particular activity will be implemented that is consistent with policy and regulations governing that activity.

The processes for assessing the standards are evaluated at the watershed level and are an ongoing process. The Socorro Field Office has initiated assessments on approximately 218,000 acres and has determined those areas to be meeting the standards. Assessments are completed by utilizing existing data and Indicators of Rangeland Health (TR 1734-6). The assessment characterizes the status of the ecological

processes (water cycle, energy flow and nutrient cycle) by interpreting attributes such as the soil/site stability, hydrologic function, and biotic integrity in relation to the ecological site.

ALLOTMENT STATISTICS

Table E-1 lists the 2005 grazing allotments that are completely or partially within the Planning Area. Grazing allotments are mapped in the Management Situation Analysis, on file in the Socorro Field Office.

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
00054	Shaw Canyon	03	M	6,936
00077	Emery	15	M	96
00079	Stokes Flat	03	M	5,017
00080	Box Car 7	03	M	12
00081	Estrada Ranch	15	I	2,100
00083	Cat Mountain	03	M	240
00084	Paul Lund	03	I	204
00085	Patterson Canyon	03	M	192
00087	Cottonwood Spring	03	M	31
00088	Mariano Mesa Ranch	03	M	96
00089	South La Jencia	15	M	564
00090	Panther Canyon	15	M	54
00091	Cerro Prieto	15	M	24
00092	Agua Fria Creek	03	M	3,780
00093	Tres Montosas	03	M	234
00094	Escondido Creek	03	I	1,488
00095	Datil Airstrip	03	M	48
00097	Tanque De Caballos	03	M	108
00098	Chavez Ranch	03	M	70
00099	Florenio Orona	03	I	420
00100	Gatlin Lake	03	M	576
00102	Orona Largo Creek	03	M	678
00103	Lopez Draw	03	M	59
00105	North Fork Alamocito	15	M	24
00106	Santa Rita	03	I	1,618
00107	Summers Community	03	M	271
00107	Summers Community	03	M	173
00107	Summers Community	03	M	233
00107	Summers Community	03	M	1,020
00107	Summers Community	03	M	95
00108	Reynolds	03	M	132
00109	Pattys Hole	03	M	751
00117	North Fox Mountain	03	M	108

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
00125	Semi Lonesome	03	I	1,682
00127	Bat Cave	03	M	11
00128	Williams Home	03	M	12
00129	R M Chavez	03	M	60
00132	W Ranch	15	M	48
00133	Tres Lagunas	15	M	288
00134	Coal Canyon	03	M	60
00135	Bill G & W F Green	15	M	252
00136	Silver Creek	15	I	1,284
00137	Pietown Dike	15	M	52
00138	Iron Mountain	15	M	132
00139	Pietown TR 15	15	M	8
00141	Sawtooth Mountain	15	M	120
00144	NM AZ State Line	15	M	48
00146	Monticello Canyon	15	M	72
00147	Kinsely Canyon	15	M	120
00148	Wahoo Ranch	15	M	1,503
00149	Williamson	15	M	60
00150	Cat Lake	15	M	192
00151	Montoya	03	M	109
00152	Dusty Ranch	03	M	24
00154	Nichols Individual	15	M	36
00155	San Ignacio	03	I	156
00164	Lew Daniels	03	M	12
00165	Snake Hill	03	M	354
00168	Tarpley	03	M	48
00192	West Emery	03	M	36
01106	Ojo Saladito	03	M	1,562
01107	Bear Springs	15	M	4
01112	Riley Community	03	M	156
01112	Riley Community	03	M	36
01112	Riley Community	03	M	60
01116	Puertecito Baranco	03	M	1,750
01117	Canon Bonito	15	M	408
01121	Rio Salado West	03	M	756
01122	Abeytas	03	M	300
01123	Abeytas	15	M	48
01125	San Ignacio Creek	03	I	804
01126	Cow Springs	03	I	1,332
01127	Santa Rita	15	M	9

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
01128	Patterson	03	M	1,588
01129	New Driveway	03	M	201
01136	Rio Puerco	03	M	1,176
01137	North Ladron	03	M	1,620
01140	Monte Negro	03	I	1,929
01143	Comanche Arroyo	15	I	24
01145	D Cross Mountain	15	M	356
01159	La Jencia Creek	03	I	2,013
01177	Ladron Peak	03	M	600
01181	Lopez Community	03	M	575
01181	Lopez Community	03	M	325
01186	West Ladron	03	M	2,574
01250	Buffalo Head	03	I	144
01251	Harless Ranch	03	M	1428
01252	Silver Road	03	I	1,608
01253	Sand Sage	03	I	240
01254	Bordo Atravesado	03	I	2,714
01255	Bosquecito	03	I	312
01256	Llano	03	M	612
01258	Tio Bartolo	03	M	365
01259	Four Hills	03	I	360
01260	Sierra Larga	03	M	2,112
01261	Scott Ranch	03	M	2,163
01262	Las Cañas	03	I	1,296
01263	Black Mesa	03	I	873
01264	Armijo Community	03	I	667
01264	Armijo Community	03	I	308
01266	Coyote Spring	03	M	1,512
01268	Ryan Hill	03	M	246
01269	Torreon Community	03	M	2,822
01269	Torreon Community	03	M	976
01270	Milligan Gulch	03	C	485
01271	Mesa Redonda	03	M	1,704
01272	San Pasqual	03	M	1,836
01273	Bruton River	03	M	1,800
01274	Rock Creek	03	C	198
01275	Oscura	03	M	5,182
01276	Four Sections	03	M	362
01277	San Jose Canyon	03	I	2,135
01278	Anaya Well	03	I	348

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
01279	Silver Canyon	03	I	1,298
01280	Tecolote Draw	03	I	2,388
01281	So Ranch	03	M	696
01282	Bingham	03	M	180
01283	Blackington Mountain	03	I	1,572
01284	Mesa Well Canyon	03	I	1,287
01285	Sand Mountain	03	M	1,884
01286	Blackington Mountain West	03	M	840
01288	Rio Grande	03	I	315
01289	Jornada Community	03	M	300
01289	Jornada Community	03	M	96
01289	Jornada Community	03	M	600
01289	Jornada Community	03	M	72
01289	Jornada Community	03	M	84
01289	Jornada Community	03	M	144
01290	Rock Springs Canyon	03	M	1,344
01291	Prairie Springs	03	M	1,536
01292	Chaunte Canyon	03	M	543
01293	Malpais	03	M	5,427
01294	Hickman Ranch	03	M	936
01295	Pipe Ranch	03	M	1,632
01296	Antelope West	03	M	247
01297	Puertecito Del Lemitar	03	M	1233
01298	Wineglass	03	M	690
01299	Pequeno	03	C	422
01300	Casas De Piedras	03	M	318
01301	White Sage	03	I	4,727
01302	So Ranch	15	M	544
01303	Jornada Individual	03	M	1,032
01305	Chato	03	M	6
01306	Veranito	03	M	445
01308	San Antonito	03	I	146
01309	S Mesa Redonda	03	M	684
01310	Chupadera Wash	03	M	525
01312	La Arenosa	03	I	535
01315	Polvadera	03	C	102
01317	San Pedro	03	I	240
01318	Pueblito Community	03	C	24
01318	Pueblito Community	03	C	34
01321	Puertecito Gap	03	M	684

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
01322	Parida	03	M	1,248
01323	Water Canyon	03	M	508
01324	Water Canyon	15	M	240
01327	Cedar Pass	03	M	1,035
01328	Jones	03	M	912
01329	Las Lomas	03	M	240
01330	East Well	03	M	461
01339	Twin Tanks	15	M	65
01340	Twin Tanks	15	M	155
01341	Scholle	15	M	23
01342	Cerro Pelon	15	M	300
01343	Abo	15	M	144
01344	La Jencia Ranch	15	M	708
01345	Oso Flatts	15	M	96
01346	La Jencia Ranch	03	M	36
01347	Blue Springs	15	M	15
01348	Cerro Montoso	15	M	407
01349	Dripping Springs	15	M	234
01350	Viejo Arroyo	15	M	237
01351	Rienhardt Individual	15	M	216
01352	U Butte	15	M	624
01353	Red Tanks Canyon	15	M	276
01354	Granite Mountain	15	M	13
01356	Tip Top	15	M	24
01361	Brushy Mountain	15	M	166
01365	Black Hills Ranch	03	M	6,696
01366	Dragoo Tank	03	M	1,968
01367	Lobo Canyon	03	M	2,762
01368	Chupadera Mesa	03	M	7,776
01369	Lincoln County	03	M	132
01370	Cat Mesa East	03	M	1,218
01371	Cuate Canyon	03	M	858
01372	Largo Canyon	03	M	2,592
01373	Carrizozo	03	M	2,160
01374	Red Lake	15	M	48
01375	Claunch Se	15	M	168
01376	Gallacher North	03	M	1,821
10001	Twin Peaks	03	M	134
10002	Qualls	15	M	120
10003	Qualls	03	M	132

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
10004	Criswell	03	M	744
10005	Horse Springs	03	M	168
10007	Mcbroom	03	M	180
10008	Quemado Breaks	03	I	162
10009	Sullivan	03	M	408
10010	Kellog Canyon	15	I	2,387
10011	Vevarosa	03	I	1,968
10014	Half Circle D	03	M	72
10015	Mangas	03	M	84
10016	Jones Place	03	M	144
10017	Patterson Canyon	03	M	514
10018	Tejana Mesa	03	M	1,128
10019	East Salt Lake	03	M	132
10020	Wilbur Wadley Draw	03	M	96
10023	Box Lake	03	M	2,688
10024	Coyote Canyon	03	M	4,360
10027	Burnett	03	M	108
10028	Y Ranch	03	I	4,329
10029	Cross Line	03	M	1,152
10030	Butler	03	M	864
10031	Arroyo Baca	03	M	67
10032	Adobe Ranch	03	I	7,973
10033	Castillo	03	M	50
10034	Fria Creek	03	M	168
10035	Mesa Ranch	03	M	504
10036	Toms Rock	15	M	30
10037	Wilbur Wadley Draw	15	M	120
10038	Red Hill South	03	M	1,716
10039	Pedro A Chavez Est	03	M	12
10040	Coyote Canyon	15	M	854
10041	Richard M Chavez	03	M	360
10042	Rito Creek	03	M	60
10043	Zuni Plateau	03	M	540
10045	West Salt Lake	03	M	84
10046	Walker	03	M	499
10047	Durfee	03	M	356
10048	Curtis Ranch	03	M	864
10049	Baca Spring	03	M	76
10050	Eagar Red Hill	03	M	864
10051	Emery	03	I	379

TABLE H-1
GRAZING ALLOTMENT STATISTICS

Allotment No.	Allotment Name	Preference Code	Management Code	Permitted AUMS
10052	Cemetery Road	15	M	25
10053	Estrada Ranch	03	I	1,764
10055	Kiehne Place	03	M	552
10056	Headquarters	03	I	2,220
10057	Carrizo Creek North	03	M	1,536
10058	Morine-White	03	M	2,232
10059	Sitka Spruce	03	M	48
10062	Red Hill North	03	I	3,607
10063	Anderson Peak	03	M	540
10064	Evans Well	03	M	104
10065	Zuni Plateau	15	M	32
10067	East Rito Creek	03	M	540
10068	Panther Canyon	03	M	192
10069	Cerro Prieto	03	M	588
10070	Rancho Alegre	03	M	8,726
10071	North Fork Alamocito	03	M	543
10072	Mangas Ranch	03	M	2,328
10073	Heavenly Acres	03	M	192
10074	Crosby Canyon	03	M	72
10110	West Horse Mountain	03	I	732
10111	East Horse Mountain	03	I	308
10113	Big Tiny Little	15	M	3
10114	Datil Airstrip	15	M	3
10115	Largo Creek	03	M	168
10116	Spring Canyon Ranch	03	I	514
10118	Alamito Ranch	03	M	6
10119	Windrider	03	M	444
10120	Aragon Well	03	M	264
10121	Big Tiny Little	03	M	3
10122	Shay	15	M	72
10123	Goat Tank Canyon	03	M	228
10124	Hale Well	15	M	6
10126	Limestone Canyon	03	I	1,123

NOTES: C = Custodial
I = Improve
M = Maintain
AUM = animal unit per month

In the 1980s, the Bureau of Land Management developed classification criteria to assist field offices in identifying management priorities by allotment. Allotments are placed in one of three categories—Maintain, Improve, or Custodial—based on certain criteria, as follows:

Maintain (M) Category

- Present range condition is satisfactory
- Allotments have moderate to high resource production potential and are producing near their potential (or trend is moving in that direction)
- No serious resource-use conflicts and/or controversies exist
- Opportunities may exist for positive economic return from public investment
- Present management appears satisfactory
- Other local criteria

Improve (I) Category

- Present range condition is unsatisfactory
- Allotments have a moderate or high resource production potential and are producing at low to moderate levels
- Serious resource-use conflicts and/or controversies exist
- Opportunities exist for positive economic return for public investment
- Present management appears unsatisfactory
- Other local criteria

Custodial (C) Category

- Present range condition is not a factor
- Allotments have a low resource production potential and are producing at low to moderate levels
- Limited resource-use conflicts and/or controversies may exist
- Opportunities for positive economic return on public investments do not exist or are constrained by technological or economic factors
- Opportunities exist to achieve the allotments' potential through changes in management
- Other local criteria

Appendix I

Minerals Management

APPENDIX I
MINERALS MANAGEMENT

This appendix describes (1) the results of the application of unsuitability criteria for coal leasing that is part of the Federal coal lands review process, (2) standard lease terms and conditions and lease stipulations for fluid minerals leasing, and (3) existing withdrawals from mineral entry.

APPLICATION OF SUITABILITY CRITERIA FOR COAL LEASING

As required by the Surface Mining Control and Reclamation Act of 1977, the Department of Interior has developed criteria to determine whether public lands are unsuitable for further consideration for coal leasing. This unsuitability assessment was applied to the portion of the Planning Area identified as having high coal potential (see the Energy and Minerals Potential Report dated October 2003). In the following discussion, the results of the application of each of the unsuitability criteria and exceptions are described.

The 20 unsuitability criteria contained in 43 Code of Federal Regulation (CFR) 3461.5 were used to assess the unsuitability for mining in the area of high coal potential. The intent of the unsuitability criteria application is to identify the areas with resources that could not be properly protected or maintained if the area were leased for coal mining.

After initial survey of the high coal potential area, unsuitable areas (as defined by specific criteria) were identified. Following the identification and formulation of alternatives to be addressed by this Resource Management Plan and as a result of public comments submitted, affected resources within the high coal potential area were reexamined in light of the current set of unsuitability criteria.

Summary

At this time, the area of high coal potential does not contain lands meeting unsuitability Criteria No. 1, Federal Land Systems; No. 2, Rights-of-way; No. 4, Wilderness Study Areas; No. 5, Scenic Class One Lands; No. 6, Scientific Study Areas; No. 8, Natural Areas; No. 9, Federal Listed Species/Habitats; No. 10, State Listed Species/Habitats; Criteria No. 11, Eagle Nests; No. 12, Eagle Roosts; No. 13, Falcon Nests; No. 17, Municipal Watersheds; No. 18, National Resource Waters; No. 19, Alluvial Valley Floors; and No. 20, State Criteria.

Mitigating measures have been developed which would allow lands identified as meeting Criteria No. 3, Roads and Dwellings; No. 14, High Interest Federal Species; No. 15, High Interest State Species; and No. 16, 100-year Floodplains, to be considered suitable for coal leasing.

Criteria No. 7, National Register of Historic Places and multiple-use screening criteria; No. 12, Cultural Resource Sites Eligible for Inclusion on the National Register of Historic Places; and No. 13, Native American Areas of Cultural Significance have removed lands from being suitable to coal leasing.

After applying the unsuitability criteria and multiple use screening analysis, approximately 3,200 acres are carried forward as suitable for coal leasing (Figure D-1, High Potential Coal Lands Carried Forward).

Unsuitability Criteria

3461.5(a)(l) Criterion No. 1

> All Federal lands included in the following land systems or categories shall be considered unsuitable: National Park System, National Wildlife Refuge System, National System of Trails, National Wilderness Preservation System, National Wild and Scenic Rivers System, National Recreation Areas, lands acquired with money derived from the Land and Water Conservation Fund, National Forests, and Federal lands in incorporated cities, towns, and villages.

There are no Federal lands systems within the San Augustine Coal Area; therefore, this criterion does not apply.

3461.5(b)(l) Criterion No. 2

> Federal lands within rights-of-way or easements or within surface leases for residential, commercial, industrial, or other public purposes. Federally owned surface shall be considered unsuitable.

There are no Federal lands rights-of-way or easements in the high coal potential area; therefore, this criterion does not apply.

346l.5(c)(l) Criterion No. 3

> Federal lands affected by section 522(e)(4) and (5) of the Surface Mining Control and Reclamation Act of 1977 shall be considered unsuitable. This includes lands within 100 feet of the outside line of the right-of-way of a public road or within 100 feet of a cemetery, or within 300 feet of any public building, school, church, community or institutional building or public park or within 300 feet of an occupied dwelling.

Presently there is only one dwelling located on Federal lands within the high coal potential area. No cemeteries, including single grave sites or public road rights-of-way, have been identified within the area under review.

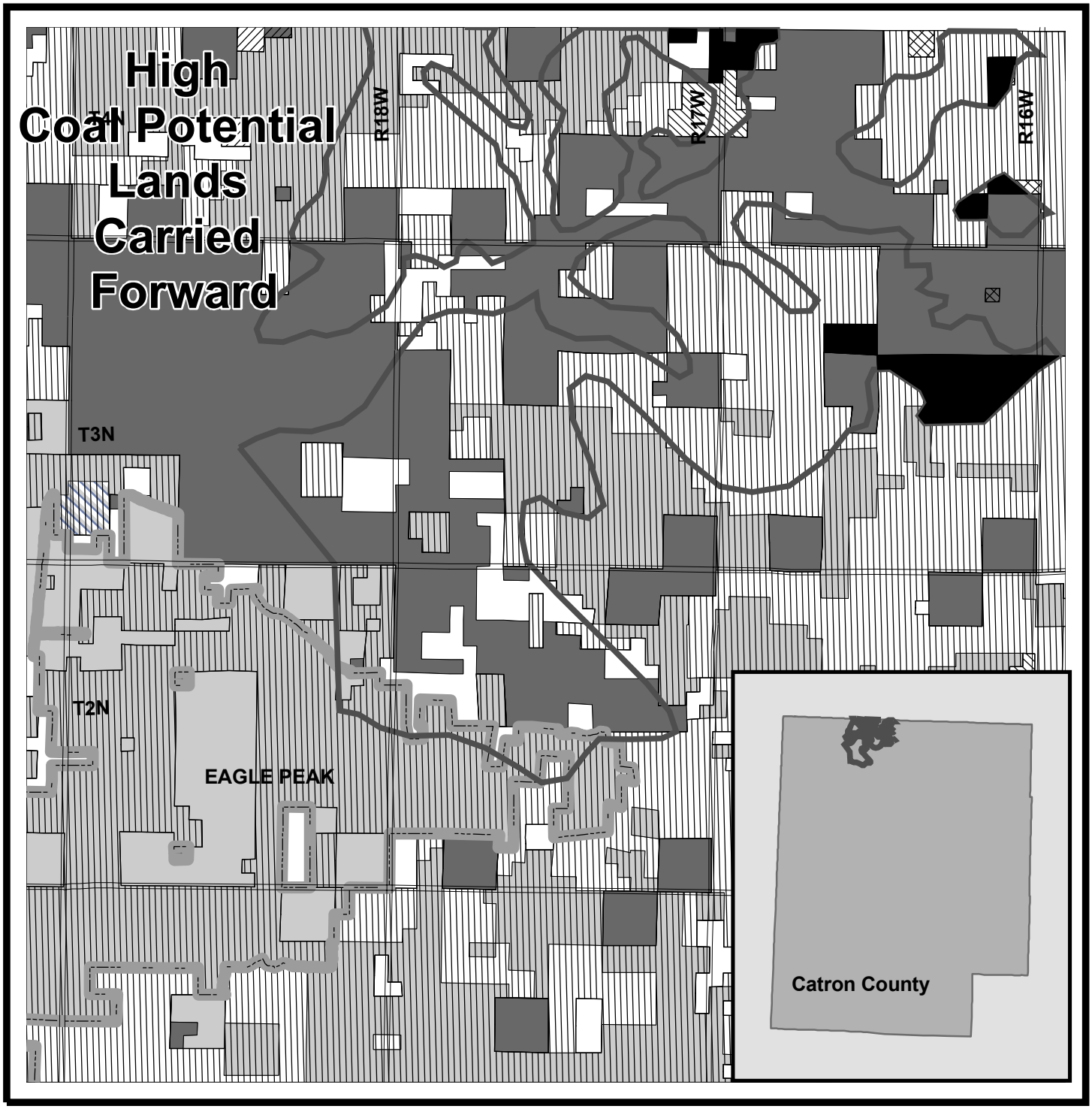
Exceptions – Lands within the area of high coal potential, which are affected by this criterion, can be considered suitable for further coal lease consideration with the following stipulation:

1. A lease may be issued for lands for which owners of occupied dwellings have given written permission to mine within 300 feet of their buildings.

346l.5(d)(1) Criterion No. 4

> Federal lands designated as wilderness study areas shall be considered unsuitable while under review by the Administration and the Congress for possible wilderness designation. For any Federal land which is to be leased or mined prior to completion of the wilderness inventory by the surface management agency, the environmental assessment or impact statement on the lease sale or mine plan shall consider whether the land possesses the characteristics of a wilderness study area. If the finding is affirmative, the land shall be considered unsuitable, unless issuance of noncompetitive coal leases and mining on leases is authorized under the Wilderness Act and the Federal Land Policy and Management Act of 1976.

There are no WSAs in the high coal potential area; therefore, criterion does not apply.



Legend

Mineral ownership

- All Federal Minerals
- Coal Only
- Oil, Gas & Coal Only
- No Federal Minerals
- Oil & Gas Only
- High Coal Potential
- NOT UNSUITABLE (Lands Carried Forward)
- BLM
- Indian Trust
- Private
- State
- Wilderness Study Area

0 1.5 3 6 Miles

N

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Map I-1

3461.5(e)(l) Criterion No. 5

> Scenic Federal lands designated by visual resource management analysis as Class I (an area of outstanding scenic quality or high visual sensitivity) but not currently on the National Register of Natural Landmarks shall be considered unsuitable. A lease may be issued if the surface management agency determines that surface coal mining operations will not significantly diminish or adversely affect the scenic quality of the designated area.

There are no visual resource management (VRM) Class I areas in the high coal potential area; therefore, this criterion does not apply.

3461.5(f)(1) Criterion No. 6

Federal lands under permit by the surface management agency, and being used for scientific studies involving food or fiber production, natural resources, or technology demonstrations and experiments shall be considered unsuitable for the duration of the study, demonstration or experiment, except where mining could be conducted in such a way as to enhance or not jeopardize the purposes of the study, as determined by the surface management agency, or where the principal scientific user or agency gives written concurrence to all or certain methods of mining.

The high coal potential area does not contain lands being utilized for this purpose.

3461.5(g)(l) Criterion No. 7

> All publicly and privately owned places on Federal lands which are included in the National Register of Historic Places shall be considered unsuitable. This shall include any areas that the surface management agency determines, after consultation with the Advisory Council on Historic Preservation and the State Historic Preservation Officer (SHPO), are necessary to protect the inherent values of the property that made it eligible for listing in the National Register.

This area has a high density of recorded and unrecorded cultural resource sites. Much of the high coal potential area has been inventoried for cultural resources. All surveyed areas show a high density of sites, and many of the sites have been determined eligible or potentially eligible to the National Register of Historic Places.

For the remaining high coal potential areas, a literature search was performed to determine if sites eligible to the National Register were present. The literature search was conducted on areas meeting all three of the following criteria:

1. Within boundaries of high coal potential coal areas
2. Federal mineral ownership
3. Outside the boundary of the Zuni Salt Lake Sanctuary site

A total of 181 sites were identified as having been recorded in the areas meeting the three criteria. Approximately two-thirds were found to be eligible or potentially eligible to the National Register.

NOTE: These archaeological sites and socio-cultural sites clearly meet the definition of a resource of a unique nature with local or regional importance. These sites are considered under the multiple-use screen.

346l.5(h)(l) Criterion No. 8

> Federal lands designated as natural areas or as National Natural Landmarks shall be considered unsuitable.

The high coal potential area does not contain lands designated as natural areas or National Natural Landmarks.

3461.5(i)(l) Criterion No. 9

> Federally designated critical habitat for threatened or endangered plant and animal species, and habitat for Federal threatened or endangered species which is determined by the Fish and Wildlife Service and the surface management agency to be of essential value and where the presence of threatened or endangered species has been scientifically documented, shall be considered unsuitable.

At this time, the high coal potential area does not contain federally designated critical habitat for threatened or endangered plant and animal species or habitat for threatened or endangered species determined to be of essential value by the U.S. Fish and Wildlife Service (USFWS) and the surface management agency.

346l.5(j)(l) Criterion No. 10

> Federal lands containing habitat determined to be critical or essential for plant or animal species listed by a State pursuant to State law as endangered or threatened shall be considered unsuitable.

At this time, the high coal potential area does not contain Federal lands containing habitat determined to be critical or essential for plant or animal species listed by the State of New Mexico as threatened or endangered.

3461.5(k)(l) Criterion No. 11

> A bald or golden eagle nest or site on Federal lands that is determined to be active and an appropriate buffer zone of land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with the Fish and Wildlife Service.

Eagle nesting habitat was surveyed during the summer/fall of 1983. A Raptor Nest Report was initiated for each nest or group of nests located. Tentative buffer zones were identified. Following a nesting survey conducted during the spring of 1987, those locations identified as active were retained as unsuitable based on this criterion.

Exception – The Bureau of Land Management (BLM) with concurrence from the USFWS, has determined that mitigating measures are neither practical nor desirable at this time.

346l.5(l)(l) Criterion No. 12

> Bald and golden eagle roost and concentration areas on Federal lands used during migration and wintering shall be considered unsuitable.

Year-round eagle roosting areas have been identified within the high coal potential area.

Exception – The BLM with concurrence from the USFWS has determined that mitigating measures are neither practical nor desirable at this time.

3461.5(m)(1) Criterion Number 13

> Federal lands containing a falcon (excluding kestrel) cliff nesting site with an active nest and a buffer zone of Federal land around the nest site shall be considered unsuitable. Consideration of availability of habitat for prey species and of terrain shall be included in the determination of buffer zones. Buffer zones shall be determined in consultation with the USFWS.

Falcon nesting habitat located within the high coal potential area was surveyed during the summer/fall of 1983. A Raptor Nest Report was initiated for each nest or suspected nest located. Following a nesting survey conducted during the spring of 1987, those locations determined to be active were retained on the unsuitability criterion. Additional spring surveys are conducted within the high coal potential area yearly. Results of these surveys may change the amount of Federal mineral estate determined unsuitable because of this criterion.

Exception – The BLM, with concurrence from the USFWS, has determined that mitigating measures are neither practical nor desirable at this time.

3461.5(n)(1) Criterion No. 14

> Federal lands that are high priority habitat for migratory bird species of high Federal interest on a regional or national basis, as determined jointly by the surface management agency and the Fish and Wildlife Service, shall be considered unsuitable.

High priority habitat is defined as an area containing one or more limited environmental factors needed to support a population of at least one of the listed species. All high priority habitat must meet the following criteria:

1. It must be used regularly (use may be limited to one season during the year) by one or more of the listed species.

2. Its availability for uses such as feeding, reproduction, nesting, molting and/or wintering must be either limited or supportive of concentrations of a listed species in the indicated coal region or sub region.

3. It must contain a combination of natural or manmade factors; e.g., riparian vegetation, reservoirs, cliff sites, tall buildings, etc. that provide an essential quantity or quality of one or more of the habitat requirements of a listed species; i.e., food, water, cover or space.

In order to assess an area as being unsuitable for all or certain stipulated methods of coal mining, both the "high Federal interest" and the "high priority habitat" aspects of this criterion must be met; e.g., an area must support listed species and contain habitat of these species which meet all three of the above indicated habitat criteria.

The areas identified as meeting criterion No. 14 are intermittent wetlands, playas or reservoirs that contain water during the spring and early summer, produce forbs during the summer, and contain water during the fall and winter. These areas are known to be utilized during the spring and fall migrations by: white-faced ibis, western grebe, great blue heron, long-billed curlew, and large concentrations of migratory waterfowl which provide a prey base for wintering bald eagles. At this time no ferruginous

hawk nest locations are known to occur on Federal mineral estate within the high coal potential area. Additional surveys will be conducted within the high coal potential area yearly. Results of these surveys may change the amount of Federal mineral estate determined to be unsuitable because of this criteria.

Exceptions – The 640 acres identified as meeting criterion No. 14 within the high coal potential area can be considered suitable for further coal lease consideration by applying the following stipulations:

1. Affected wetlands and appropriate drainages sufficient to provide equal or enhanced habitat values will be replaced by the lessee on a site-specific basis.

2. The lessee will consult with the BLM; the BLM will consult with the surface owner, USFWS and New Mexico Department of Game and Fish (NMDGF) prior to alteration of the affected wetland.

3461.5(o)(1) Criterion Number 15

> Federal lands which the surface management agency and the State jointly agree are fish and wildlife habitat for resident species of high interest to the State and which are essential for maintaining these priority wildlife species shall be considered unsuitable.

The areas identified under criterion No. 14 can also be applicable to criterion No. 15; in addition, the NMDGF has identified mule deer and ferruginous hawks. Pronghorn antelope are included under this criterion because of the occurrence of an isolated herd utilizing a restricted habitat on a mesa top in the area.

> Areas identified as mule deer winter range within the high coal potential area are also adjacent to or included in the areas covered by criterion No. 12, eagle roosting areas. Mule deer wintering range (80 acres) are included under this criterion.

Those areas identified under criterion No.14 are included in the exception for that criterion.

Exceptions – The areas identified as prairie dog locations will be suitable for further coal lease consideration by incorporating the following stipulations:

1. Proposed activities in or adjacent to the identified area will be preceded by a complete black-footed ferret inventory of the prairie dog colony.

2. All black-footed ferret inventory and survey procedures conducted by the lessee will be reviewed and approved by BLM, in consultation with the USFWS and the NMDGF.

3461.5(p)(l) Criterion No. 16

> Federal lands in riverine, coastal and special floodplains (100-year recurrence interval) on which the surface management agency determines that mining could not be undertaken without substantial threat of loss of life or property shall be considered unsuitable for all or certain stipulated methods of coal mining.

The first drainages that were analyzed for 100-year floodplain determination were those that drained at least 10 square miles. Watersheds were delineated and tentative floodplain transect locations established. Two or more transects were run for each probable floodplain location using the stadia method. Channel cross sections were drawn and flood stages marked on them. The U.S. Geological Survey method from

Water Resources Investigations 82-24, “Techniques for Estimated Flood Discharges for Unregulated Streams in New Mexico”, and H. R. Hejl, Jr.’s (U.S. Geological Survey) draft paper “Stream flow Characteristics as Related to Basin Characteristics in Strippable Coal-Resource Areas of Northwestern New Mexico” were used to determine the 100-year flood discharge. The resultant discharges computed using the two different methods were very close. Using the Manning’s equation and knowing the channel geometry and stage relationship, the 100-year floodplain was then determined and drawn on 7.5-minute topographic maps. The floodplains were later verified with aerial photographs. To accurately determine the 100-year floodplain, USGS said that about 20 floodplain transects per area are needed and the floodplains should be mapped on one-foot contour interval maps. Due to the tight budget, large area, and lack of manpower, it was not possible to delineate the floodplains to that degree of accuracy.

Playas were delineated by aerial photo interpretation, vegetative types, and field observations. Four large detention dams that hold between 55 and 152 acre-feet of water were also considered unsuitable.

Although the 1,800 acres delineated as floodplains are blocked out in 40-acre tracts, the actual floodplain usually represents a much smaller area. Actual floodplain boundaries have been digitized and maps are available for reviewing at the Socorro Field Office.

All of the 100-year occurrence floodplains in the high coal potential area can be mitigated because they do not represent a substantial threat to life or property.

3461.5(q)(l) Criterion No. 17

> Federal lands which have been committed by the surface management agency to use as municipal watersheds shall be considered unsuitable.

At this time, the high coal potential area does not contain any municipal watersheds.

346l.5(r)(l) Criterion No. 18

> Federal lands with national resource waters, as identified by states in their water quality management plans, and a buffer zone of Federal lands ¼ mile from the outer edge of the far banks of the water, shall be unsuitable.

At this time, the high coal potential area does not contain lands identified by the State of New Mexico as meeting this criterion.

3461.5(s)(1) Criterion No. 19

> Federal lands identified by the surface management agency, in consultation with the State in which they are located, as alluvial valley floors according to the definition in 3400.0-5(a) of this title, the standards in 30 CFR Part 822, the final alluvial valley floor guidelines of the Office of Surface Mining Reclamation and Enforcement when published, and approved State programs under the Surface Mining Control and Reclamation Act of 1977, where mining would interrupt, discontinue, or preclude faming, shall be considered unsuitable. Additionally, when mining Federal land outside an alluvial valley floor would materially damage the quantity or quality of water in surface or underground water systems that would supply alluvial valley floors, the land shall be considered unsuitable.

At this time, the high coal potential area does not contain lands identified as alluvial valley floors (30 CFR Chapter VII).

3461.5(t)(l) Criterion No. 20

> Federal lands in a state to which is applicable a criterion (i) proposed by that state or Indian tribe located in the planning area, and (ii) adopted by rule making by the Secretary, shall be considered unsuitable.

At this time, the State of New Mexico has not proposed nor has the Secretary adopted any special or additional criterion other than those criterion presented in Parts 2, 3, and 4 of the New Mexico Coal Surface Mining Commission Rule 80-1 which corresponds with segments of the Federal 3461.1 regulations.

Multiple-Use Conflict Analysis

The multiple-resource use screens are intended to eliminate lands from further consideration for coal leasing if other resources on those lands are determined to be locally important or unique. In general, a multiple-use trade-off is appropriate when one land use (e.g., mining) would be likely to preclude or limit use of other valuable resources not otherwise covered by the 20 unsuitability criteria. The readjustments at this stage in the land use planning process are made to accommodate unique, site-specific resource values clearly superior to coal but which are not included in the unsuitability criteria. A prime recreation site or campground might be an example.

The multiple-use analysis weighs the effects of the additional multiple-use screens on the areas, which have passed the previously mentioned screens. The results of these analyses are summarized below. It should be noted that additional inventory for cultural resources, raptor nests, etc., could require the reapplication of multiple-use and unsuitability criteria screens at the coal activity planning stage.

Multiple-Use Screening Analysis

No. 1: Wetlands

Wetlands larger than one acre will be considered unacceptable.

Definition: BLM Manual 6740 defines wetlands as follows:

> "Permanently wet or intermittently flooded areas where the water table (fresh, saline, or brackish) is at, near, or above the soil surface for extended intervals, where hydric wet soil conditions are normally exhibited, and where water depths generally do not exceed two meters. Vegetation is generally comprised of emergent water-loving forms (hydrophytes), which require at least a periodically saturated soil condition for growth and reproduction. In certain instances vegetation may be completely lacking. Marshes, shallows, swamps, muskegs, lake bogs, and wet meadows are examples of wetlands."

These are poorly drained areas, as a rule having impervious soils (no substantial groundwater recharge). They may on occasion be in contact with the groundwater system, but for the most part they receive water from precipitation and overland runoff.

The above definition will be used for the multiple-use screen with the following modification. Marshes, shallows, swamps, and wet meadows less than one acre will not be considered under this definition. It will not include saltgrass flats associated with intermittent arroyos or small seasonally flooded livestock reservoirs that do not support emergent vegetation.

Analysis: There are no wetlands larger than one acre in the areas under consideration. This analysis is based on field inventories.

No. 2: Riparian Habitat

Riparian habitat will be considered unacceptable.

Definition: Manual 6740 defines riparian habitat as follows:

> "A specialized form of wetland restricted to areas along, adjacent to, or contiguous with perennially and intermittently flowing rivers and streams, also, periodically flooded lake and reservoir shore areas, as well as lakes with stable water levels with characteristic vegetation. This habitat is transitional between true bottomland wetlands and upland terrestrial habitats and, while associated with water courses, may extend inland for considerable distances. Soils of the riparian habitat may not exhibit typical wet soil characteristics of other wetlands. If not, wet soil characteristics will exist close enough to the surface for the water to be used directly by vegetation. This vegetation may range from water-loving hydrophytes (such as pond weeds) through terrestrial forms (such as sycamores, cottonwoods, and willows)."

In these areas, soil and soil structure permit groundwater movement both vertically and horizontally. Groundwater recharge can occur.

For the purpose of the multiple-use screen the above definition will be used with the following condition: isolated cottonwood trees, tamarisk stands less than one acre, and desert arroyos with greasewood, rabbitbrush, or fourwing saltbush borders will not be considered as riparian habitat. They are more properly treated as special habitat features.

Analysis: Using the above definition, there is no riparian habitat in any of the areas under consideration. This analysis is based on field inventories.

No. 3: Proposed Threatened and Endangered Species

Habitat supporting populations or individuals of species proposed for Federal or State listing as threatened or endangered will be considered unacceptable.

Analysis: There are no proposed threatened or endangered species known to be within any of the areas under consideration. This analysis is based on field inventories and consultations with the USFWS and NMDGF.

No. 4: Federal Lands Contiguous to the National Trail System and the National Wilderness System

Federal lands within 0.5 mile of units of the National System of Trails, and the National Wilderness Preservation System, shall be considered unacceptable.

Analysis: There are no Federal land systems within 0.5 mile of any of the areas under consideration.

No. 5: Class II VRM Areas

Areas that contain VRM Class II objectives shall be considered unacceptable for surface coal mining.

Analysis: There are no areas under consideration that are managed under VRM Class II management objectives.

No. 6: Areas of Significant Recreation Use or Opportunity

Special Recreation Management Areas and areas that contain Recreation Opportunity Spectrum management objective for the primitive class shall be considered unacceptable for surface coal mining.

Analysis: There are no areas managed as Special Recreation Management Areas or Recreation Opportunity Spectrum Primitive class management objectives in the high coal potential area.

No. 7: Sole-Source Aquifers

An area formally designated by the Environmental Protection Agency (EPA) as a sole-source aquifer shall be considered unacceptable.

Analysis: The sole-source aquifer program under the Safe Drinking Water Act permits citizens to petition EPA for designation of an area as a sole-source aquifer if it is the principal water supply. If so designated, EPA reviews all federally assisted projects, which may affect the quality of groundwater in the sole-source aquifer.

There have been no sole-source aquifer designations in the high coal potential area under this program to date.

No. 8: Air Quality

Lands within 15 miles of air quality Class I Prevention of Significant Deterioration areas shall be considered unacceptable.

Analysis: There are no Class I Prevention of Significant Deterioration areas within or adjacent to the high coal potential area.

No. 9: Reserved Federal Lands

All Federal lands included in the following land systems or categories shall be considered unacceptable: Federal Aviation Administration facilities; all site withdrawals (administrative, school, etc.) for Federal agencies and leases acquired under the Recreation and Public Purposes Act.

Analysis: There are no Federal lands within the high coal potential area under consideration which are reserved for Federal Aviation Administration facilities, site withdrawals for Federal agencies (administrative, school, etc.) or leases acquired under the Recreation and Public Purposes Act.

Exception: A lease may be issued and mining operations approved if, after consultation with the affected Federal agency or lessee, the surface management agency determines that the facility will not be adversely affected by all or certain stipulated methods of coal mining.

No. 10: Right-of-Way Windows or Corridors

Federal lands which have been committed by the surface management agency to use as rights-of-way windows or corridors shall be considered unacceptable.

Analysis: No Federal lands that have been designated or recommended for designation, as rights-of-way windows or corridors, are within the areas under consideration.

No. 11: Paleontological Resources

Any paleontological resources which are type localities for fauna that define regional or larger time-stratigraphic units, and special management areas set aside for their paleontological values, shall be considered unacceptable. However, coal mining can be allowed if the authorized officer (in consultation with affected Federal/State agencies) determines that mining activities will enhance and facilitate access and scientific evaluation of paleontological resources.

Analysis: This multiple-use screen does not apply to any areas under consideration with the high coal potential area.

No. 12: Cultural Resource Sites Eligible for Inclusion on the National Register of Historic Places

All properties which have been determined eligible for the National Register of Historic Places and which are of exceptional complexity, or areas of properties which must be considered together to achieve adequate mitigation through data recovery, shall be considered unacceptable. This shall include areas that the surface managing agency determines, after consultation with the SHPO and the Advisory Council on Historic Preservation, are necessary to protect the inherent values of the property that made it eligible for the National Register.

Prior to approval of surface-disturbing activities, Class III inventories will be conducted and subsequent mitigation of impacts will be required on all National Register eligible sites. Consultation between BLM, Office of Surface Management, and SHPO will occur to determine if newly recorded sites are eligible for inclusion in the National Register. If adequate mitigating measures for impacts to these site(s) cannot be developed, the sites and appropriate buffer zones will not be surface-mined or allowed to be disturbed by underground mining activities.

Analysis: This area has a high density of recorded and unrecorded cultural resource sites. Much of the high coal potential area has been inventoried for cultural resources, and much of the inventory related to coal extraction proposals. All surveyed areas show a high density of sites, and many of the sites have been determined eligible or potentially eligible to the National Register of Historic Places (National Register).

A large portion of the high coal potential area falls within the boundaries of the Zuni Salt Lake Sanctuary site, which has been determined eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

For the remaining high coal potential area, a literature search was performed to determine if sites eligible to the National Register were present. The literature search was conducted on areas meeting all three of the following criteria:

1. Within boundaries of high coal potential coal areas
2. Federal mineral ownership
3. Outside the boundary of the Zuni Salt Lake Sanctuary site

A total of 181 sites were identified as having been recorded in the areas meeting the three criteria. Approximately two thirds were found to be eligible or potentially eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

No. 13: Native American Areas of Cultural Significance

Federal lands containing specific sites that have been identified as sacred and essential to the practice of traditional Native American religion shall be considered as unacceptable. This shall also include any areas that the surface management agency determines, after consultation with the appropriate tribal representative, as necessary to protect the inherent values of the area and to ensure that the natural character of the area remains unaltered so it may continue to be used for prayer or other religious practices.

Analysis: An overview of Native American traditional use of the original SACA region (Kelly in Camilli et al. n.d.) has shown that this screen may apply to sites, localities, and linear features (trails). A large portion of the high coal potential area falls within the boundaries of the Zuni Salt Lake Sanctuary site, which has been determined eligible to the National Register. These areas were eliminated from further consideration for coal leasing.

FLUID MINERALS LEASING

Federal fluid minerals are made available for leasing through the Minerals Leasing Act of 1920, as amended, and the Geothermal Steam Act of 1970. The Minerals Leasing Act of 1920, as amended, provides the Secretary of the Interior with authority to issue leases on lands where the mineral rights are held by the Federal government. This authority has been delegated to the BLM State Directors. The BLM is required to determine (1) which lands are suitable and available for leasing and subsequent development and (2) how those leased lands will be managed. On lands administered or owned by an entity other than BLM (referred to as split estate), BLM's environmental objectives and constraints apply equally to these areas; however, such constraints are developed at the permit stage in consultation with the other surface-managing agency or surface owner. Wilderness study areas are closed to mineral leasing by the Mineral Leasing Act of 1920.

A lease is a contract that conveys to an operator the right to develop and produce fluid minerals for a specific period of time under certain agreed-upon terms and conditions. The issuance of a lease grants to the lessee exclusive rights to as much of the leased land as is needed to conduct exploratory drilling and development operations in the leasehold subject to stipulations attached to the lease; restrictions derived from specific nondiscretionary statutes; and reasonable measures as may be required by the surface-management agency to minimize adverse impacts on other resource values, land uses, or users.

Before consent can be given for leases to be issued by BLM, regulations require (1) verifying that leasing on specific lands is consistent with the land use plan; (2) ensuring that conditions of surface occupancy are properly included (as stipulations) in resulting leases; and (3) determining that operations and development could be allowed somewhere on each proposed lease except where a stipulation would prohibit all surface occupancy.

Standard Lease Terms and Conditions

Areas may be open to leasing with no specific management decisions defined in a resource management plan. However, these areas are subject to the lease terms and conditions as defined on the appropriate lease form (Form 3100-11, Offer to Lease and Lease for Oil and Gas; and Form 3200-24, Offer to Lease and Lease for Geothermal Resources). The forms include lease terms and conditions that address subjects such as bonding, rentals, royalties, inspections, and safety. Of particular interest for this discussion is Section 6, Conduct of Operations, of the lease form, which establishes the general and reasonable requirements for the protection of surface resources and is referred to as "standard lease terms and conditions." The Authorized Officer has the right to relocate proposed facilities, control timing of

operations, and impose other mitigation in accordance with Sections 2 and 6 of the standard oil and gas lease terms. Each proposed site would be investigated and, if site-specific conditions warrant more restrictive protection, such protective measures could be imposed through conditions of approval at the time of an application for permit to drill.

In addition, the standard lease terms and conditions specifically require that the lessee contact the lessor prior to disturbing the surface. They also specify that the lessee may be required to complete inventories or special studies in accordance with the Endangered Species Act of 1973, National Historic Preservation Act (NHPA) of 1966, and other applicable laws.

Fluid Mineral Lease Stipulations

Constraints in the form of stipulations are conditions included in a lease when environmental and planning analyses have demonstrated that additional and more stringent environmental protection is needed. Stipulations are provisions that modify the standard lease rights and are made part of the lease. The operator would be expected to comply with the stipulations that are attached to a lease. Lands currently under lease would not be affected by the stipulations identified in this Resource Management Plan Revision/Environmental Impact Statement. New leases would be required to adhere to the stipulations as identified in the Resource Management Plan Revision upon its completion.

A number of stipulations for fluid minerals leasing are proposed for specific areas in the alternatives for this RMPR/EIS as follows:

S-CSU-C1 – Protection of Cultural Resources
S-CSU-C2 – Protection of Cultural Resources
S-CSU-C3 – Protection of Cultural Resources
S-CSU-C4 – Protection of Cultural Resources
S-CSU-K – Potential Cave or Karst Occurrence Area
S-CSU-P – Protection of Paleontological Resources
S-CSU-R – Protection of Riparian Areas
S-CSU-S – Protection of Slopes and Fragile Soils
S-CSU-V – Protection of Natural Values
S-CSU-W1 – Protection of Wildlife Resources
S-CSU-W2 – Protection of Wildlife Projects
S-CSU-W3 – Protection of Raptor and Prairie Dog Habitat
S-CSU-W4 – Protection of Potential Northern Aplomado Falcon Habitat
S-CSU-Z – Protection of Zuni Salt Lake
S-NSO-V – Protection of Natural Resources
S-NSO-C – No Surface Occupancy to Protect Cultural Resources
S-NSO-R – No Surface Occupancy to Protect Special Recreation Areas
S-NSO-T&E– No Surface Occupancy to Protect Threatened or Endangered Species
S-NSO-W – No Surface Occupancy to Protect Wildlife Resources
S-VRM-II – Protection of Visual Resource Management Class II Areas
NM-5 – White Sands Missile Range Safety Evacuation Zone
NM-6 – Continental Divide Trail

Additional information on the purpose of each stipulation and the type of conditions that would be applied to a lease are described below.

S–CSU–C1 – Protection of Cultural Resources

For the purpose of: Protection of highly significant and sensitive historic and prehistoric resources that might not be detected by means of standard Class III cultural resource surface inventory from direct and indirect effects of lease development.

Waiver: None

Exception: Requests for exception would be based on a case-by-case basis sensitivity evaluation and on available information regarding site-specific soil stability, site probability and any proposal for alternate forms of mitigation.

Modification: None

Justification: Nationally significant sites of both prehistoric and historic origin are located in the area. Many of these sites are not easily identified through standard Class III cultural resource inventory.

Stipulation: Access to the lease will be limited to routes designated in the approved permit for lease operations. Applications for surface disturbing aspects of lease development will be evaluated for potential proximity to sensitive nationally significant cultural resources (known and suspected) and could require expanded pre-field records search, subsurface testing and/or metal detector survey in addition to routine cultural resource surface inventory for compliance with Section 106 of the NHPA, the costs of which will be borne by the lessee. This could result in extended time frames for processing authorizations for development activities.

All proposed surface-disturbing aspects of lease development will be located to avoid and/or protect the cultural resources present.

S-CSU-C2 – Protection of Cultural Resources

For the purpose of: Ensuring that highly sensitive subsurface sites of national significance are not destroyed because they lack surface manifestations.

Waiver: None

Exception: Requests for exception would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.

Modification: None

Justification: Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance. Subsurface testing is necessary to ensure that highly sensitive sites are not destroyed due to a lack of surface features and artifacts.

Stipulation: Access will be limited to designated routes. All surface-disturbing aspects of lease development will require subsurface testing in addition to cultural resource surface inventory for compliance with Section 106 of the NHPA.

S-CSU-C3 – Protection of Cultural Resources

For the purpose of: Ensuring that highly sensitive sites of national significance are not destroyed.

Waiver: None

Exception: Requests for exception would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.

Modification: None

Justification: Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance. Subsurface testing is necessary to ensure that highly sensitive sites are not destroyed due to a lack of surface features and artifacts.

Stipulation: All drill sites will be located adjacent to designated routes. All surface-disturbing aspects of lease development will require subsurface testing in addition to cultural resource surface inventory for compliance with Section 106 of the NHPA.

S-CSU-C4 – Protection of Cultural Resources

For the purpose of: Ensuring that highly sensitive sites of national significance are not destroyed.

Waiver: None

Exception: None

Modification: None

Justification: Archaeological sites in this area are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance.

Stipulation: All proposed surface-disturbing aspects of lease development may be moved to protect the cultural resources present.

S-CSU-K – Potential Cave or Karst Occurrence Area

For the purpose of: Protecting cave and karst resources.

Waiver: Waiver of this requirement will be considered for projects that enhance or protect renewable natural resource values, or when an approved plan of operations ensures the protection of cave and karst resources.

Exception: None

Modification: None

Justification: Stipulating controlled surface use is deemed necessary based on the need to protect cave and karst resources in these areas.

Stipulation: All or portions of the lease are located in a potential cave or karst occurrence area. Within this area, cave or karst features such as sinkholes, passages, and large rooms may be encountered from the surface to a depth of as much as 2,000 feet, within areas ranging from a few acres to hundreds of acres. Due to the sensitive nature of the cave or karst systems of this area, special protective measures may be developed during environmental analyses and be required as part of approvals for drilling or other

operations on this lease. These measures could include changes in drilling operations, special casing and cementing programs, modifications in surface activities, or other reasonable measures to mitigate impacts to cave or karst values.

Surface disturbance will not be allowed within up to 200 meters of known cave entrances, passages or aspects of significant caves, or significant karst features.

S-CSU-P – Protection of Paleontological Resources

For the purpose of: Ensuring that sensitive paleontological sites of national significance are not destroyed.

Waiver: None

Exception: None

Modification: None

Justification: Paleontological sites in this area are extremely significant, rare, and fragile.

Stipulation: A paleontological survey by a qualified paleontologist must be conducted prior to any surface-disturbing activities. All proposed surface-disturbing activities of lease development must be located to avoid and/or protect the paleontological resources present.

S-CSU-R – Protection of Riparian Areas

For the purpose of: Protection of riparian habitat for purposes of preventing further habitat fragmentation and loss of use of otherwise suitable/effective habitat.

Waiver: If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

Exception: Based on a site-specific evaluation by the Authorized Officer if an approved plan of operations assures the protection of water, soil, and habitat resources.

Modification: Based on a site-specific evaluation by the Authorized Officer if an approved plan of operations assures the protection of water, soil, and habitat resources.

Stipulation: Surface-disturbing or long-term noise producing activities which exceed a noise level of 75 A-weighted decibels (75dbA), measured at the perimeter of the 400-meter protective spatial buffer, will not be allowed within 400 meters of riparian areas (springs, seeps, tanks, rivers, streams, playas, canyon bottoms, and floodplains). If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied prior to authorizing lease operations. The BLM Authorized Officer will work with lease holder on a case-by-case basis to achieve an acceptable level of noise mitigation. A more restrictive spatial buffer may be applied where the 400-meter spatial buffer has been documented to not provide adequate protection. Appropriate

modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

S-CSU-S – Protection of Slopes and Fragile Soils

For the purpose: Protection of fragile soils and natural resources.

Waiver: None

Exception: Exceptions will be made if the operator can show that operations can be conducted without adversely affecting the protected resources.

Modification: Based on a site-specific evaluation by the Authorized Officer, appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

Stipulation: All or portions of the lease area contain slopes over 30 percent and/or fragile soils that require special protection to prevent further resource degradation. Surface disturbance will not be allowed on slopes over 30 percent. Occupancy upon areas containing fragile soils will be evaluated and special measures applied to prevent erosion of fragile soils.

S-CSU-V – Protection of Natural Values

For the purpose of: Protection of unique scenic and natural values from the direct and indirect impacts of lease development.

Waiver: Requests for waiver would be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible mitigations, and considering the site-specific scenic and natural values.

Exception: Based on an individual case sensitivity evaluation by the Authorized Officer.

Modification: None

Justification: The protection of the special scenic and natural values.

Stipulation: Access will be limited to routes designated in the approved permit for lease operations. Applications for surface-disturbing activities will be evaluated for their proximity to the mature yucca stands and for their short and long-term impacts to the special aesthetic and natural values of the dense stands of mature yuccas that dominate the desert scenery.

S-CSU-W1 – Protection of Wildlife Resources

For the purpose: Protection of a designated Area of Critical Environmental Concern for wildlife resources.

Waiver: Upon request, if circumstances or relative resource values change or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in continued activity or permanent adverse impacts to the landscape or resources of concern, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

Exception: None

Modification: Based on a site-specific evaluation by the Authorized Officer, appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

Stipulation: All or portions of the lease area contain special wildlife habitat features that require special protection to prevent further degradation or damage. Applications for surface-disturbing or long-term noise producing activities, which exceed a noise level of 75dbA at the edge of the well pad, will be authorized only when lessee/operator demonstrates that the area is essential for operations and when the lessee/operator submits a satisfactory surface use and operations plan that provides protection for these special resource values. If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied as a condition of approval for lease operations. The BLM Authorized Officer will work with the lease holder on a case-by-case basis to achieve an acceptable level of noise mitigation.

S-CSU-W2 – Protection of Wildlife Habitat Projects

For the purpose of: Protection of wildlife habitat enhancement projects for purposes of preventing further habitat fragmentation and loss of use of otherwise suitable/effective habitat.

Waiver: If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

Exception: None

Modification: Based on a site-specific evaluation by the Authorized Officer.

Stipulation: Surface-disturbing or long-term noise producing activities which exceed a noise level of 75dbA, measured at the perimeter of the 400-meter protective spatial buffer, will not be allowed within 400 meters of existing or planned wildlife habitat improvement projects. If the 75dbA noise level is determined to not provide adequate protection from the auditory impact created by lease operations, a stricter level shall be applied as a condition of approval for lease operations. A more restrictive spatial buffer may be applied where the 400-meter spatial buffer has been documented to not provide adequate protection. Use and occupancy within the 400-meter spatial buffer will be authorized only when lessee/ operator demonstrates that the area is essential for operations and when the lessee/operator submits a satisfactory surface use and operations plan, which adequately protects resources of concern. This requirement will be considered for a waiver with appropriate off-site mitigation, if the proposed activity is of short duration (e.g., habitat enhancement project, fences, pipelines), and will not result in continued activity in proximity to the habitat project, as determined by the Authorized Officer.

Appropriate modifications to the imposed restrictions will be made for the maintenance and operations of producing oil and gas wells.

S-CSU-W3 – Protection of Raptor and Prairie Dog Habitat

For the purpose of: Protection of raptor and prairie dog habitat.

Waiver: Waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting in the following situations: relative resource values change, the lessee

demonstrates that the operations can be conducted without causing unacceptable impacts, in emergency situations, or if the disturbance or impacts associated with the proposed activity are of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat.

Exception: Based on a site-specific evaluation by the Authorized Officer.

Modification: Based on a site-specific evaluation by the Authorized Officer.

Stipulation: Prior to survey/flagging locations for pads, routes for roads, and any other preliminary activity, the project area will be surveyed for raptor nests. Surveys will be conducted by professional biologists approved by the Authorized Officer. All raptor nests, bald eagle wintering areas, and prairie dog colonies, will be avoided by the distances and seasonal periods listed below.

Distance:

- Eagle – 0.5 mile, February 1-July 15
- Prairie Falcon – 0.5 mile, March 1-August 1
- Ferruginous Hawk – 0.5 mile, February 1-July 15
- Aplomado Falcon – 0.5 mile, January 1-July 31
- Gunnison Prairie Dog – 0.25 mile, April 1-September 15
- Black Tailed Prairie Dog – 0.25 mile, January 1-June 15
- All other raptor species – 0.5 mile, during observed nest establishment through fledgling

Long-term surface use activities will not be allowed within the species-specific spatial buffer zone of active nests or occupied prairie dog towns listed above. Short-term activities will be avoided within the species-specific spatial buffer zones during the dates listed above. All other raptor species nests will be avoided by the spatial buffer zone only during the period listed above, regardless of the duration of the activity. Before surface use activities may commence a raptor and prairie dog survey must be completed.

A short-term activity is defined as an activity, which would begin outside of a given breeding season and end prior to initiation of a given breeding season. A long-term activity is defined as an activity which would continue into or beyond a given nesting/breeding season. An active nest is defined as any nest that has been occupied in the last seven years. A nest will be determined active or inactive by the Authorized Officer.

S-CSU-W4 – Protection of Potential Northern Aplomado Falcon Habitat

For the purpose of: Habitat protection for a Federally listed endangered species.

Waiver: Waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting in the following situations: relative resource values change, the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, in emergency situations, or if the disturbance or impacts associated with the proposed activity are of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat.

Exception: Based on a site-specific evaluation by the Authorized Officer.

Modification: Based on a site-specific evaluation by the Authorized Officer.

Stipulation: Surface use or occupancy is subject to the following special operating constraints in areas identified as having habitat potential for northern aplomado falcons. The lease operator is required to submit a Plan of Development for the entire leasehold prior to commencing drilling activity. Requests for exceptions or changes to the Plan of Development are not allowed without approval by the BLM authorized officer. Prior to surveying/flagging locations for pads, routes for roads, and other preliminary activities, a protocol northern aplomado falcon survey must be completed. In areas determined to have potential habitat, specialized surface use and occupancy requirements will be applied as conditions of approval for all surface-disturbing activities, including preliminary investigations.

S-CSU-Z – Protection of Zuni Salt Lake

For the purpose of: To protect the aquifers that feed Zuni Salt Lake.

Waiver: None

Exception: None

Modification: None

Justification: Protection of Zuni Salt Lake and other significant sites and resources in the area.

Stipulation: No diversions from the Moreno Hill Formation and other underlying aquifers within the Carrizo Wash watershed without re-injection and with the following conditions to protect the hydrologic balance and chemistry of the Zuni Salt Lake:

1. Define disposal locations to mitigate all effects on the Zuni Salt Lake.
2. Produced water must be re-injected into the same aquifer, and water quality must be compatible with the injection interval.
3. Produced water shall be returned by vacuum.
4. All wells will be plugged and abandoned after use, not converted to water wells, according to State and Federal guidelines.

S-NSO-V – Protection of Natural Resources

As described below, all or a portion of the lease contains natural resource values of concern requiring extraordinary protection. No surface occupancy is deemed necessary because standard mitigation measures and best management practices are not adequate to protect these significant, rare and/or fragile resources. It is the intention of the lessor that this lease be developed by directional drilling from or prorationing with adjacent locations.

For the purpose of: Protection of highly sensitive natural resource values from direct and indirect impacts of lease development.

Waiver: If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, and will not result in permanent adverse impacts to the landscape or degrade resource values, a waiver will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting. Requests for waiver will be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible alternate forms of mitigation and consideration of the site-specific natural resource values.

Exception: No exceptions; see waiver criteria.

Modification: None

S-NSO-C – No Surface Occupancy to Protect Cultural Resources

For the purpose of: Protection of highly sensitive cultural resource sites from direct and indirect impacts of lease development, including increased access and erosion.

Waiver: Requests for waiver would be addressed on a case-by-case basis and evaluated based on available information regarding site-specific soil stability, site probability, and proposals for alternate forms of mitigation.

Exception: None

Modification: None

Justification: Stipulating no surface occupancy is deemed necessary to protect archaeological sites which are extremely significant, rare, and fragile. Standard compliance with Section 106 of the NHPA through Class III surface inventory is not sufficient to protect vulnerable resources of national significance.

S-NSO-R – No Surface Occupancy to Protect Special Recreation Areas

For the purpose of: Protection of a high value recreation site and activity area from direct and indirect impacts of lease development.

Waiver: Requests for waiver will be addressed on a case-by-case basis and evaluated based on available information regarding the proposed activity or disturbance, possible mitigation and considering the site-specific scenic, natural, recreational, and cultural values.

Exception: Based on an individual case sensitivity evaluation by the Authorized Officer.

Modification: None

Justification: The protection of the special scenic, natural, recreational, and cultural values and activities inherent in the designated sites.

S-NSO-T&E – No Surface Occupancy to Protect Threatened or Endangered Species

For the purpose of: Habitat protection of listed threatened plants, by the USFWS, under the Endangered Species Act and nominated by the New Mexico Energy, Minerals and Natural Resources Department and the Nature Conservancy for special protection and management.

Waiver: If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, such as a habitat or range improvement project, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

Exception: None

Modification: None

Justification: The projection of threatened plants.

S-NSO-W – No Surface Occupancy to Protect Wildlife Resources

For the purpose of: Protection of wildlife habitat and other resources of concern.

Waiver: If circumstances or relative resource values change or if the lessee demonstrates that the operations can be conducted without causing unacceptable impacts, or in emergency situations or if the disturbance or impacts associated with the proposed activity is of short duration, and will not result in permanent adverse impacts to the landscape or degrade wildlife habitat, exceptions or waivers will be considered with appropriate mitigation, as determined by the Authorized Officer at the time of permitting.

Exception: None

Modification: None

Justification: Protection of wildlife habitat and other resources of concern.

S-VRM-II – Protection of Visual Resource Management Class II Areas

For the purpose of: To minimize contrasts to the characteristic landscape of each area.

Waiver: None

Exception: None

Modification: None

Justification: Stipulating controlled surface use is deemed necessary based on the need to protect visual resources in these areas. The objectives for VRM Class II areas are to manage activities so that the changes in any of the basic visual elements (form, line, color, and texture) are not evident in the landscape. A contrast may be seen but should not attract attention.

Stipulation: To meet the VRM objectives described below, and upon determinations made by the BLM Authorized Officer, new disturbance will be minimized as follows:

1. Painting of facilities in accordance with Notice to Lessees NM-87-1 “Painting of Oil Field Facilities” shall be required to meet VRM objectives.
2. Proposed disturbances may be moved distances greater than 200 meters to meet VRM Class II objectives.
3. Low-profile facilities may be required to reduce visual impacts.
4. Visual simulations will be required as part of the surface use plan for lease operations in sensitive view sheds such as Class II areas along scenic highways, trails, and back country byways.

NM-5 – White Sands Missile Range Safety Evacuation Zone

For the purpose of: Providing notice to lessees that they may be required to periodically evacuate this area when White Sands Missile Range conducts missile firings.

Waiver: None

Exception: None

Modification: None

Justification: To ensure that the lessee is aware that White Sands Missile Range conducts testing of missiles during which times White Sands Missile Range requires that the area be evacuated. Closing the area to leasing or attaching a stipulation to this lease is deemed overly restrictive since the area is viable for fluid minerals development during other times.

Stipulation: Prior to beginning exploration activities, the lessee must contact the U.S. Army Corps of Engineers in Albuquerque and the Master Planning Branch at White Sands Missile Range to be advised of terms of the safety evacuation agreement and missile-firing schedules.

Specific locations of the White Sands Missile Range Safety Evacuation Zone should be verified in the Socorro Field Office.

NM-6 – Continental Divide Trail

No occupancy or other surface-disturbance will be allowed within 1,000 feet of the Continental Divide National Scenic Trail Treadway. This distance may be modified when specifically approved in writing by the Socorro Field Office, BLM.

Specialized Surface Occupancy Requirements for Northern Aplomado Falcon Potential Habitat

For the purpose of: Protecting grassland habitat and associated special status species of wildlife through improved planning for future oil and gas development on a unit.

*Requirement***:** In areas of potential northern aplomado falcon habitat that are open to leasing with a unitization requirement, new lessees form exploratory units prior to commencing drilling activity. This protection measure would allow the BLM to manage the surface in an orderly way and control the rate of reservoir development. The BLM has the authority to approve Unit Agreements, establish the rate of exploration and development, approve the tract allocation formula, and terminate units that cease production (or where production was never established). A simple definition of unitization is the operation of multiple leases as a single lease under a single operator. Unitization would result in less surface disturbance since wells would be drilled in the most favorable locations without regard for spacing, and the operator and BLM would establish corridors for access roads and pipelines, eliminating the need for redundant facilities. Lessee benefits include that individual leases could be extended beyond their primary term without actual production, as long as there is production on the unit.

WITHDRAWALS FROM MINERAL ENTRY

Table D-1 displays locations that have been withdrawn from location or entry under the mining laws.

TABLE I-1
WITHDRAWALS FROM MINERAL ENTRY

Serial Number	Withdrawn	Geographic Name	Location (NMPM)	Type of Withdrawal	Segregation	Acres
NMNM095102	10/19/1999	Datil Well Campground	T. 2 S., R. 10 W., sec 10, sec 11.	Recreational Purpose	Locatable Minerals All surface	680
NMNM0038148	08/05/1960	Middle Rio Grande Project	T. 3 S., R. 1 E., sec 31, lot 50; T. 4 S., R. 1 E., sec 5, Eastern Most 1/5 POR L28; lots 26, 27, 33, 36, 37; sec 8, lot 54; sec 17, lot 19; sec 21, lots 12-14, 17, 18; sec 28, lots 18, 21; sec 33 lots 13,14.	Reclamation	Locatable Minerals All surface	97.645
NMNM0013651	07/08/1955	White Sands Missile Range	T. 6 S., R. 7 E., Sec 6, lot 5 that portion south and west of ROW of US HWY 380; T. 6 S., R. 8 E., Sec 18, that portion south and west of ROW of US HWY 380; Sec 20, that portion south and west of ROW of US HWY 380, Sec 28, that portion south and west of ROW of US HWY 380.	Department of Army	All Minerals All Surface	310.00
NMNM095103	01/29/1999	Ladron Mountain ACEC	T. 2 N., R. 2 W, Sec 2 lots 1-8, S½N½, N½S½; Sec 32, lots 1-4, W½SW¼; T. 3 N., R. 2 W., Sec 16, Sec 32, Sec 36, T. 2 N., R. 3 W., Sec 2, lot 4, S½N½, S½; T. 2 N., R. 3 W., Sec 36, SE¼SW¼, NW½SW¼; T. 3 N., R. 3 W., Sec 36, N½, SW¼, NE¼SE¼, W½SE¼.	BLM special Designation	Locatable Minerals All Surface	4,556.6

Serial Number	Withdrawn	Geographic Name	Location (NMPM)	Type of Withdrawal	Segregation	Acres
NMNM095104	03/25/1999		T. 5 S., R. 3 W., Sec 16, lots 5-8, N½, N½SW¼; Sec 21, Sec 28, Sec 29, Sec 32; T. 6 S., R. 3 W., Sec 4, lots 3,4, SW¼, Sec 9, W½, Sec 15, W½, Sec 16, Sec 22, E½, N½NW¼, SE¼NW¼, E½SW¼; T. 5 S., R. 4 W, Sec 25, E½.	BLM Special Designation	Locatable Minerals All Surface	5,607.520
NMNM095118	10/09/2001	Sawtooth ACEC	T. 1 N., R. 11 W., Sec 6, lot 7, SE¼SW¼, SW¼SE¼.	BLM Miscellaneous	Locatable Minerals All Surface	116.120
NMNM08384	06/01/1995	The Box	T. 3 S., R. 1 W., Sec 31, lot 18.	BLM Miscellaneous	EXC Minerals All Surface	39.950