

DECISION NOTICE and FINDING OF NO SIGNIFICANT IMPACT

Hightower Master Development Plan

Federal Oil and Gas Lease COC- 68792

USDA FOREST SERVICE, ROCKY MOUNTAIN REGION
GRAND MESA, UNCOMPAHGRE, AND GUNNISON NATIONAL FORESTS
GRAND VALLEY RANGER DISTRICT
Mesa County, Colorado

I. INTRODUCTION

An Environmental Assessment (EA) has been prepared that analyzes the surface effects of the Hightower Master Development Plan (Hightower MDP). The Hightower MDP brings forward surface uses on federal oil and gas lease COC-68792 and adjacent lands on the Grand Mesa, Uncompahgre and Gunnison National Forests (GMUG), Grand Valley Ranger District, Mesa County, Colorado.

At this stage in the federal oil and gas administration process, the Forest Service is responsible for approving surface uses related to exploration and/or production proposals, and identifying terms and conditions to protect other resources. Surface use in the Hightower MDP was proposed with a Master Application for Permit to Drill, which included a Master Surface Use Plan of Operations (MSUPO) and a Master Drilling Plan (DP) for up to 32 wells on 5 drilling locations. The MSUPO and DP detail the associated design, construction and operational criteria for exploration drilling operations, road use and access needs, along with the downhole (or technical engineering) proposal. The MSUPO also details plans for installing gas gathering and water pipelines, well head production facilities, pipeline compression facilities, should they be needed.

The Forest Service is also responsible for considering waivers, exceptions, or modifications to lease stipulations where requested in a surface use proposal. Portions of proposed new access roads or gas/water gathering pipelines in the Hightower MDP are located in areas where exceptions to lease stipulations for natural gas exploration or development activities were considered.

The Bureau of Land Management, Grand Junction Field Office participated in the analysis with the Forest Service. They provided review and input on the technical engineering aspects of the Hightower MDP within their purview, including the downhole portion.

Plains Exploration and Production Company (PXP), the lessee of federal oil and gas lease COC-68792, brought forward the Hightower MDP to exercise their rights to explore for and produce gas reserves on the lease.

The GMUG issues and administers special use authorizations (SUA) for certain activities, and road use permits (RUPs) for the use of classified National Forest System Roads (NFSRs) for commercial operations. The project proponent will be required to obtain an SUA for some project activities, and an RUP to account for use of NFSRs.

II. SCOPE OF DECISION AND AUTHORITY

Scope of Decision:

With this Decision Notice, I am approving the Hightower MDP drilling locations, road use and access needs, pipeline locations, and compression facility. I am also deciding the terms and conditions under which the Operator may occupy, explore, and develop its federal oil and gas lease, and use other National Forest System (NFS) lands according to the Hightower MDP while protecting natural resources and providing for public access and safety (EA, Section 1.7). These terms and conditions come from Design Criteria which were analyzed in the EA (Table 2.2.15). The Design Criteria will be applied to site-specific Surface Use Plans of Operations should they be brought forward in an Application for Permit to Drill, and included in subsequent special use authorizations, if needed for pipelines and the compressor facility, or included in sundry notice approvals for other potential well site activities.

Components of this decision framework for approval of the activities in the Hightower MDP and MSUPO address:

- Drilling locations;
- New access road locations;
- Use and upgrade of existing National Forest System Roads;
- Compressor facility location and storage locations for production fluids, and
- Pipeline locations

I am also deciding whether or not to grant exceptions (one-time variances) to No Surface Occupancy (NSO) lease stipulations for the following activities on the federal oil and gas lease:

- NSO for High Geologic Hazards for the pipeline from the 21-12 to 20-11 drilling location
- NSO for Riparian/Wetland/Floodplain for:
 - gathering line from 20-6 to lease boundary,
 - gathering line from 21-2 to 21-10
 - access road to the 21-2 drilling location

This decision document does not approve site-specific Surface Use Plans of Operations (SUPOs) for activities on the federal oil and gas lease; rather, it grants authorization to use the specific drilling locations, new access road locations, and pipeline locations described in the MSUPO for those purposes. Ground-disturbing surface operations will be allowed only after a site-specific APD with a SUPO that fits within the framework of the Hightower MDP and MSUPO is filed and approved.

Further, this decision authorizes the use of NFS lands not on the federal oil and gas lease for the purposes of placing a gas compression facility, and a sales pipeline for transporting natural gas from the compression facility to an existing regional gas transportation system. Ground-disturbing surface operations will be allowed only after an application for a special use authorization that fits within the framework of the Hightower MDP is filed and approved.

This decision includes a minor Forest Plan amendment for the 20-6 and 20-11 drilling locations and the central compressor/tank battery facility with respect to visual resources. This minor amendment is needed to change the visual quality objective designation from partial retention to modification.

If the SUPO for a site-specific APD, or the application for a special use authorization, do not meet the approved components of the Hightower MDP and MSUPO, the terms and conditions of the leases (as applicable), Design Criteria, identified in this Decision Notice, then they could be denied and additional NEPA analysis required.

Authorities:

The Decision to authorize exploration and production of leased federal oil and gas reserves are made under the authority of the Mineral Leasing Act of 1920 (as amended), the Federal On Shore Oil and Gas Leasing Reform Act of 1987 (FOOGLRA), the Mining and Minerals Policy Act of 1970.

Regulations governing the role of the Forest Service in oil and gas leasing operations on NFS lands are cited in 36 Code of Federal Regulations [CFR] 228 Subpart E, and On Shore Order No. 1. These regulations promote cooperation between the Forest Service, BLM, industry, and the public. Executive Order 13212, dated May 18, 2001, provides for expeditious review of permits and other actions to increase the supply of natural gas while maintaining safety, public health, and environmental protections. Regulations related to Forest Service authority to grant requests to modify, waive, or grant exceptions to lease stipulations are cited in 36 CFR 228.104.

The Decision to authorize use of NFS lands for the purposes of oil and gas pipelines and related facilities under special use authorization is made under the authority of the Mineral Leasing Act as amended by the Act of November 16, 1973.

Use of existing National Forest System Roads (NFSRs) would require a Forest Service Road Use Permit and will be authorized under 36 CFR Section 261.54(c), the GMUG Forest Supervisor Order 01-01, and the Region 2 Regional Foresters Order R2-2007-01.

III. DECISION

I have decided to approve the Hightower MDP and MSUPO as described in Alternative 3, All Buried Pipelines and Central Facility (EA, Sections 2.2 and 2.4). This alternative incorporates the Design Criteria listed in Table 2.2.15 of the EA, and included in Appendix A of this document. Alternative 3 includes drilling 32 wells from five (5) multi-well drilling locations, constructing 1.2 miles of new access road, upgrading or maintaining about 6.5 miles of existing National Forest System Road (NFSR), installing 4.9 miles of buried pipeline (co-located gas gathering lines and water lines) between drilling locations, constructing a centralized compressor/tank battery facility, installing 0.9 mile of sales pipeline, harvesting timber in two aspen regeneration replacement clearcuts and for other project activities, and a minor Forest Plan amendment for visual quality objectives.

This decision authorizes activities associated with natural gas exploration and potential production to be conducted at the drilling locations, existing and new road locations, pipeline corridor locations and central compressor/tank facility as shown on the Hightower MDP Decision Map.

Additional details of my decision are as follows:

A. Drilling Locations, New Access Roads and Co-Located Gas/Water Pipelines

Upon submission of a site-specific APD(s) with a SUPO(s), the drilling location(s), new access road(s) and gas/water pipeline alignments will be verified on the ground by the operator and the Forest Service. If a component of a SUPO is not consistent with this Decision, additional NEPA analysis will be required. When no longer needed, drilling locations will be reclaimed and new access roads decommissioned per Forest Service direction at the time of abandonment.

B. Use and Upgrade of Existing National Forest System Roads

My decision authorizes use the following NFSRs within the Grand Mesa National Forest:

NFSR 265 (Hightower-Buzzard Divide Road), NFSR 266 (Porter Creek Road), and NFSR 270 (Silt Road) can be used for commercial purposes under the terms and conditions of a Forest Service Road Use Permit (RUP). Any upgrades or maintenance of these roads that is needed to support project related traffic will meet AASHTO Guidelines for Geometric Design of Very Low Volume Local Roads or equivalent design standard as approved by the Forest Service, and be consistent with Design Criteria listed in Appendix A.

These NFSRs require upgrading or heavy maintenance to accommodate expected weights, lengths and volume of traffic associated with the project. NFSRs 265 and 266 will be designed to accommodate winter snowplowing and all-weather vehicular use that would be needed during drilling and completion operations.

This will not result in substantial changes to these roads, rather will return the road character to the original design of a 14 to 16 foot running surface with turnouts for visibility and safety, and add structural strength to the roads. Approximately 500 feet of NFSR 266 will be re-routed to the west in the vicinity of the 20-6 drill pad. Once drilling is complete and wells are brought on-line, snowplowing along NFSR 265 and 266 would generally not occur except in emergency situations.

To reduce the effects on winter recreationists during times when NFSR 266 is plowed, the operator will gravel a snowmobile parking/staging area along the west side of NFSR 266 immediately south of the cattleguard in Section 17 (see Appendix A).

The existing travel management decision for the Grand Mesa NF for NFSR 265 will remain in effect. NFSR 265 will remain closed to general travel in the spring. This decision allows the proponent to have specific authorization to conduct operations and use the road during this time.

C. Central Compressor/Tank Battery Facility and Sales Pipeline

Upon submission of a site-specific application for a special use authorization, the central facility associated new access road and sales pipeline alignment will be verified on the ground by the operator and the Forest Service. If a component of the application is not consistent with this Decision, additional NEPA analysis will be required. When no longer needed, central facility will be reclaimed and new access road decommissioned per Forest Service direction at the time of abandonment. The disturbance over the pipeline corridor will be reclaimed immediately following installation of the pipeline as practical.

D. Exceptions to Lease Stipulations

My decision includes considering exceptions (one-time exemptions) to some lease stipulations relative to specific new access road locations, and gas/water gathering pipeline locations on Federal Oil and Gas Lease COC-68792 as described below.

The exception to the NSO stipulation for High Geologic Hazards for the gas/water gathering pipeline between the 21-12 to 20-11 is denied. Placement of this pipeline at the time an APD and SUPO is submitted will need to avoid this area.

Exceptions to the NSO stipulation for Wetlands/Floodplains/Riparian Areas for gas/water gathering pipelines between the 21-12 and 20-11 drilling locations, and from 20-6 north to the lease boundary are granted. The language in the lease stipulation states that 'location of these [wetlands/floodplains/riparian] areas which is more specific than can be identified on USGS topographical maps will come at the APD [i.e. project stage] stage based on on-the-ground observations'. This is case for this situation, as the scale of, and methodology used, to generate the lease stipulation coverage at the time the oil and gas lease was processed suggested that wetlands/floodplains/riparian conditions might exist. However, upon field review of these locations per the language in the stipulation that requires that resources be verified at the project stage, indicated that wetlands/floodplain/riparian conditions are not present on the ground in these locations, therefore the resources that would fall under this stipulation would not be affected (EA, Section 3.5).

Similarly, the exception to the NSO stipulation for Wetlands/Floodplains/Riparian Areas for the access road to the 21-2 drilling location is granted. Field review of this location also indicated that wetlands/floodplain/riparian area conditions are not present on the ground at this location, therefore the resources that would fall under this stipulation would not be affected. Further, early GIS mapping indicated that this road might cross a drainage in the north central part of section 21, however, field studies show this drainage does not exist.

No other waivers, exceptions, or modifications to lease stipulations are approved in this decision.

I have reviewed the analysis (EA, Chapter 3) of the requested exceptions and have determined that granting these exemptions will not pose additional negative resource effects in these locations. Design Criteria included as part of the selected alternative will ensure that effects in these are minimized (see Appendix A).

The project was designed to minimize effects to surface resources, the locations at which these facilities are placed will cause minimal effect. Further, granting these exceptions is consistent with direction in the Energy Policy Act of 2005 to make lease stipulations only as restrictive as needed to protect the resources.

E. Timber Harvest in Two Aspen Regeneration Replacement Clearcuts and for Other Project Activities

This decision includes approving about 13 acres of aspen harvest to replace areas previously clearcut to enhance regeneration that will be occupied by drilling locations 21-2 and 21-10 (EA, Section 2.2.3). These drilling locations were placed in the clearcuts to reduce the amount of new surface disturbance, occupy sites of known geologic stability, and reduce visual effects. However, placing the drilling locations in these clearcuts removes these areas contribution to aspen regeneration, therefore the replacement cuts are needed to ensure that purpose and need of the initial clearcutting is maintained. The regeneration replacement clearcuts were previously identified for harvest.

Other project activities may also require removal of merchantable timber for new access road construction, pipeline corridor clearing and drilling location construction. The oil and gas operator will be responsible for the all harvest activities, and will need to secure a Forest Service Timber Contract (see Appendix A).

F. Minor Forest Plan Amendment for Visual Quality Objectives

The minor Forest Plan amendment needed to change the VQO from partial retention to modification for the 20-6 and 20-11 drilling locations and central compressor/tank battery facility is approved. Approval of this minor amendment will not substantially alter the existing visual quality, as the area has already been modified by other existing activities (EA, Section 3.13).

This decision will be implemented through issuance of this Decision Notice, subsequent submittals and Forest Service approval of a) site-specific SUPOs as part of an APD (followed by BLM approval of an APD package) for drilling locations, new access roads and gas/water gathering pipelines, and b) a special use authorization application for the central compression/tank battery facility and sales line consistent with this Decision Notice, including the operator obtaining any other permits for use of NFS lands, resources and/or improvements. The oil and gas operator is also responsible to secure any additional Local, State or Federal permits as applicable and required by law. I am requiring that a surface reclamation bond be collected for each drilling location, new access road and gas/water gathering pipeline corridor per authority of 36 CFR 228.109.

In the event of any contradiction or conflict between descriptions or depictions of authorized actions, my decision is to be taken from the project documents in the following order of precedence: first the description in this Decision Notice, second the representations on the Decision Map, and finally descriptions in the EA.

G. Monitoring

The air quality analysis in the EA (Section 3.1) indicated a need to monitor fuel consumption during drilling that would be used to assist the Forest Service in refining data for future projects in the Piceance Basin. My decision includes requiring this monitoring, which will be brought forward as a Condition of Approval on location-specific surface use plans of operations (see Appendix A).

IV. REASONS FOR THE DECISION

Applicable Laws, Regulations, and Policy

This decision is consistent with applicable laws, regulations, and policies (refer to Sections II and VII of this document and EA, Section 1.5). Activities approved by this decision on lands within the existing federal oil and gas lease, are consistent with rights granted under the federal oil and gas leases, and are consistent with Forest Land and Resource Management Plan (LRMP) direction. Activities approved by this decision that are not on the federal oil and gas lease are likewise consistent with the applicable legal framework and the LRMP.

How Issues Were Considered

Concerns related to the project's effects on the natural and human environment were identified as issues to be addressed. Key issues that drove alternatives or project design were listed as key issues (see Table 1.9.1 of the EA). Non-key issues that were carried forward for analysis are shown in the EA, Table 1.9.2. Other issues were raised that were not carried forward in the analysis are listed in Appendix A of the EA. Most of these concerns were addressed by careful design of the proposed action and the selected alternative (EA, Sections 1.9, 2.2, 2.3 and 2.4, Table 2.2.15, Appendix A).

Specific discussion on how key resource issues were addressed in the analysis is given below:

Increased traffic volume on existing NFSRs: Activities associated with the Hightower MDP will increase the amount and the type of traffic using existing NFSRs. For some of the project activities, NFSR use will more than double for some phases of the project (EA, Chapter 3, Transportation). As part of project design, the Forest Service identified road design needs to ensure that 1) the roads will be upgraded to a standard that can support the project traffic, 2) includes as Design Criteria measures for safety on the roads, 3) contemplated year-round drilling so that the effects of the highest intensity traffic would occur over a shorter time period, rather than extending them over several years, and 4) developed Alternative 3 (the selected action) to include water pipelines to reduce the amount of traffic on the roads during production activities.

Having produced water conveyed to a central facility in the selected alternative reduces the amount of NFSR needed to be used year round from 4.7 miles to 0.5 miles.

Geologic Hazards: Some Hightower MDP activities are placed in areas where land instability exists. This concern drove the need to design the project so that specific geotechnical engineering studies and monitoring would be done at locations of specific concern (see EA, Table 2.2.15).

Other Resource Concerns: Some resource effects cannot be completely reduced, and will occur from implementation of this decision over the life of the project. Effects of the project based on issues identified are disclosed in Chapter 3 of the EA. Some effects for issues of particular interest include:

- 1) In the short term, construction of new drilling locations, new access roads and natural gas and water gathering pipeline will disturb the ground or remove vegetation from approximately 98 acres of National Forest System lands. Thirteen (13) acres of this 98 is aspen will be removed for regeneration replacement. The disturbed acreage would be reduced as a result of interim reclamation within the first few years of the project to about 15 acres that would remain disturbed over the long-term (EA, Table 2.6) and would be ultimately reclaimed at the end of project life. The aspen removal acreage is expected to regenerate and contribute to overall forest health and diversity.
- 2) There will be short term disruptions to on-going recreational activities, primarily hunting and snowmobiling. During construction, drilling and completion, recreational experience would be disrupted, however it would be short term. Minimal long term disruption to these activities is expected if the project goes to production.
- 3) The project will have negligible effects to existing air quality. While there will be emissions associated with project activities, the project has been designed to use low emission drill rigs and suppress dust to minimize air quality effects.
- 4) Short-term sediment delivery to local drainages is expected to occur, particularly during road upgrade and maintenance work; however, use of sediment control devices included as Design Criteria (see Appendix A) will minimize this effect.

Benefits will also occur from implementation of my decision. Revegetation of disturbed areas will result in a temporary increase of wildlife and livestock forage. There is also opportunity to reduce existing sediment delivery to surface water by completing road upgrades that will harden surface and install functional road

designs and improve road safety. My decision facilitates providing energy resources to the nation.

Factors Other Than Environmental Effects Considered In Making the Decision

The purpose and need of this project is to authorize a holder of federal oil and gas lease on the National Forest to explore for and develop gas reserves. My decision supports the Purpose and Need for this project.

My decision fulfills the Federal Government's policy to foster and encourage mineral development (Mining and Mineral Policy Act of 1970), supports the Forest Service minerals program objectives to ensure that exploration, development and production of energy resources are conducted in an environmentally sensitive manner and to facilitate orderly exploration, development and production of energy resources within NFS lands open to these activities, and complies with the GMUG Forest Plan direction to encourage environmentally sound energy development (Forest Plan, page II-61).

Alternative 1 - No Action (EA, Section 2.1) was not selected because it would not meet the direction of the Forest Plan. Additionally, Alternative 1 would not meet the purpose and need for the project because it would not support the right of the lessee to explore for gas on their federal oil and gas lease. The federal oil and gas lease grants the lessee the right to explore for and develop the mineral resources. They were also given the right to construct roads and drill pads needed to explore for the mineral reserves, in locations that were not restricted by lease stipulations.

Identification of the Environmental Documents Considered in Making the Decision

This decision was made after carefully considering the contents of the EA, public comments, agency response to comments, and the supporting project record. The GMUG Forest Plan, and the 1993 GMUG Oil and Gas Leasing EIS and Record of Decision were reviewed. The EA analysis (Chapter 3) incorporated Design Criteria as appropriate for the site-specific conditions in all action alternatives.

How Considerations Were Weighed and Balanced In Arriving At the Decision

Existing oil and gas leases underlie the surface, giving the leaseholder the right to construct drill pads and roads on the surface needed to develop the oil and gas resources, subject to the lease stipulations. Drilling locations and roads for mineral exploration and other uses have previously been approved, constructed, and then reclaimed in various portions of the Grand Mesa and adjacent areas. Likewise, pipelines for water projects, and gas transmission purposes have been constructed and reclaimed within predictable effects in the area. These areas have been successfully reclaimed, and returned to acceptable uses over time. This project facilitates exercising these lease rights, and is a part the ongoing minerals program on the GMUG.

The GMUG interdisciplinary team worked to design the project such that it would have minimal effects. The project Design Criteria (EA, Table 2.2.15 and Appendix A of this document), which apply both to Alternative 2 (the Proposed Action) and Alternative 3 (the selected action), limit the effects of the proposed activities to a level that presents little risk to resources (EA, Table 2.6).

One of my principle concerns is the amount of project traffic that would use existing NFSRs. Safety on these NFSRs for recreationists, existing permittees, the oil and gas operator and contractors along with other users of the roads is highly important. By selecting Alternative 3, produced water from the wells can be piped to a central location where it will be stored and then transferred to a disposal facility. This eliminates the long term need for plowing snow on the NFSRs, and reduces the amount of long-term daily, year round traffic on these roads. This in turn will reduce effects on wildlife and winter recreation. Although, Alternative 3 initially has more surface disturbance than Alternative 2, after interim reclamation on drilling locations and reclamation on buried pipeline corridors occurs, the long-term disturbance is similar (14.8 acres versus 12.5 acres, respectively) between the two alternatives. By selecting Alternative 3, the distance traveled on NFSRs 265 and 266 is reduced from 4.7 miles to 0.5 miles.

Relationship to Public Involvement

Public comments were sought throughout this project (refer to Section VI of this document for a summary of public involvement, and Section 1.8 and Chapter 4 of the EA). The Forest Service prepared Responses to Comments received on the project, which is included as Appendix A of the EA.

I recognize that some commenters do not support oil and gas activities on NFS lands. As a mineral-related activity, oil and gas exploration and development is a recognized use of National Forest System lands, and approving and administering these activities is part of the Forest Service mission and the legal framework under which the agency operates.

I also recognize that some commenters have concerns over the adequacy of the GMUG Oil and Gas Leasing EIS, effects to wildlife habitat, recreation, visual quality, air quality, livestock management, and other items. I carefully considered the written comments expressing these concerns. I concluded that the environmental analysis performed and the environmental assessment written adequately studied the potential consequences of the proposed actions and the alternatives. I concluded that no significant impacts would occur as the result of my decision (refer to Section VII of this document for a detailed Finding of No Significant Impact).

V. SUMMARY OF ALTERNATIVES CONSIDERED

Eight alternatives were considered in the EA, (Sections 2.2 to 2.5), and three carried forward for detailed analysis. The selected action is Alternative 3 (See Section II of this document) with application of Design Criteria (Appendix A). A summary of the action alternatives considered in the EA follows.

Alternative 2, Proposed Action, 32 Gas wells Directionally Drilled from Five Locations with Surface and Buried Pipelines and a Compressor Facility Under the Proposed Action (see also EA, Chapter 2), the Forest Service would approve the Hightower MDP and MSUPO for surface use associated with drilling up to 32 exploratory natural gas wells on 5 drilling locations, construction of about 1.2 miles of new access road, use and upgrade of about 6.5 miles of existing NFSRs. The Proposed Action includes authorizing year-round drilling operations, beginning in the summer of 2008. Assuming producible quantities of gas would be found, the proposed Action included installation of gas gathering and sales pipelines, compression facility, and well head production facilities. The Proposed Action would include installing about 4.3 miles of a combination of 8-inch to 12-inch diameter buried and surface pipeline as follows: 2.0 miles of surface gas gathering line, approximately 2.3 mile buried gathering line. The project activities would be implemented over about a two-year timeframe. The Proposed Action included that interim reclamation would be performed on as much of each drilling location as possible once completion operations have ceased, and conducting final reclamation at the end of well life. Long-term operation and maintenance of the production facilities if producible quantities of gas are found was also included.

The Proposed Action also looked at granting exceptions to lease stipulations for some gas gathering pipelines and access roads, two aspen regeneration replacement clearcuts, and required a minor amendment to the Forest Plan for a site-specific change to visual quality objectives.

Alternative 3, All Buried Pipelines and Central Facility Alternative 3 is the selected alternative. It is the same as Alternative 2 except that all gas gathering pipelines would be buried, water lines would be installed in the same trench as the gas pipeline, produced water would be conveyed via the buried pipeline to a central tank battery, a central tank battery and compressor facility (Central Facility) would be constructed (rather than a compressor station as identified in Alternative 2), increases construction width of the pipeline corridor to accommodate the buried pipelines, and adds an additional segment of buried pipeline. The design of this alternative reduces the amount of NFSRs to be used year-round during production for hauling produced water from 4.7 miles to 0.5 miles, and reduces snowplowing and vehicular disturbance on Forest roads during the winter for wildlife and recreation benefits. This alternative minimizes the amount of water truck traffic along NFSRs 265 and 266 during the production phase of operations.

VI. PUBLIC INVOLVEMENT

Public scoping comments for the project proposal were solicited from appropriate agencies, specific interested parties, and the general public. Section 1.8, Public Involvement, and Chapter 4 of the EA provide a discussion of public involvement, and consultation undertaken for the project. Mailing lists used for the scoping effort are contained in the project file.

The GMUG published a legal notice inviting comments for scoping on the proposed project in the *Grand Junction Daily Sentinel* on February 6, 2007. The scoping comment period was used as the official opportunity to comment on this project (per 36 CRR 215).

Sixteen comment letters from private individuals; permittees, environmental organizations; local, state and federal government agencies; were received in response to the scoping notice/official comment period. Responses to these comments can be found in Appendix A of the EA.

The Grand Valley Ranger District hosted a field trip to the project area in June 2007 to discuss the project. Field trip was attended by company representatives, Colorado Division of Wildlife, Wilderness Workshop, Western Slope Environmental Resource Council, and Western Colorado Congress.

Project information including opportunities to comment, was posted at an information board physically in the project area since the fall of 2006. Brochures were distributed during the 2006 and 2007 big game hunting seasons to hunters in the project area, and made available in the Forest Service Collbran and Grand Junction offices. Information was also published in the DOW's 2007 Big Game Hunting Statistics booklet.

The project was included on the Schedule of Proposed Actions (SOPA) for the GMUG National Forest starting in February 2007, which is made available to the public on the GMUG Internet website. Project information including scoping notices was also posted on the GMUG website.

VII. FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the EA and supporting project record, and upon my conclusions immediately below, I find that actions resulting from my decision do not constitute major Federal actions significantly affecting the quality of the human environment, as defined in the Code of Federal Regulations Title 40 Part 1508, section 27 (40 CFR 1508.27) in terms of either context or intensity, and that an environmental impact statement need not be prepared.

Context

Locality: The Hightower MDP is primarily an exploration project, and it is possible that not all drilling locations, new roads and gas gathering pipelines would be constructed. In the event that all locations are used for exploration, this decision could initially affect about 85 acres of National Forest System lands on the Grand Valley Ranger District for drilling location construction, new road construction and upgrades of existing roads, and installation of natural gas and water gathering lines. Short-term impacts are mitigated by project Design Criteria. Assuming gas in producible quantities is found at all locations, less than 15 acres would be disturbed over several decades. Required interim and final reclamation of drill pads and decommissioning of temporary roads would alleviate long-term impacts to the land.

Short term effects will occur as a result of project-related traffic using NFSRs in the area, however, these effects will be short term in duration and would occur over a period of a few years, and then reduce to non-noticeable levels. Recreationists could have temporary reductions in the hunting experience and motorized experience on road and snowmobile routes; however, these would occur on a temporary basis principally during construction and drilling phases of the project.

In context of the land area considered in the Hightower MDP (2, 560 acres), short-term disturbance associated with drilling locations, road access and gathering/water pipeline installation represents about 3 percent of the Project Area. This reduces to less than 1 percent disturbance over the long term. Private and

federal lands surrounding the Project Area have been the site of many projects (special use authorizations for pipelines and powerlines, timber sales, recreation trails and administrative facilities) that have altered the landscape. The land disturbance associated with this project does not substantially change the existing character of this local landscape. Oil and gas operations (wells and pipelines) have been a part of this landscape since the 1960s. The inclusion of this project's activities is part of the overall management scheme for this area.

Thus, the effects on NFS lands and users over both the short-term and long-term would remain consistent with that which is presently occurring and has occurred in the past decade. No short or long term significant impacts are expected as a result of this decision in the local context (EA, Chapter 3).

Affected Interests and Affected Region: Affected interests for this project are current special use and grazing permittees in the project area, people who use the project area for recreation, people using the existing NFSRs, people living in the Town of Collbran, residents of the Plateau Valley, the project proponent and other natural gas companies. This decision allows continued use by livestock permit holders, recreational users of the areas, and users of NFSRs within the scope of current approvals. Design Criteria included in the environmental analysis and the Decision to reduce effects on other forest uses. Other required permits would specify terms of use to further reduce effects on other forest uses. No short or long term significant impacts on affected interests are expected as a result of this decision in the regional context (EA, Chapter 3).

Natural gas and related activities are occurring adjacent to the Hightower MDP Project area on private and other federal lands. This project contributes a minor amount to the existing activity.

Society as a Whole: This decision provides the opportunity for a federal oil and gas lessee to explore for domestic natural gas resources, and potentially contribute to filling the nation's need for natural gas. Given the exploratory nature of this project, and the uncertainty associated with the presence of a producible natural gas field in the area, and the localized nature of the proposal, there would be no effects to society as a whole.

Intensity

- 1) Consideration of Beneficial and Adverse Impacts. Beneficial and adverse impacts were described in the EA (Chapter 3) and considered in Section IV of this Decision Notice. Impacts of this decision will be similar to those of previous decisions regarding oil and gas and other energy mineral exploration and development and energy transmission in portions of this project area, and in adjacent areas on the GMUG. A benefit of the project would be providing natural gas to help meet the nation's energy needs. An additional benefit would be realized by improving the public and environmental safety of existing roads in the project area. Although both beneficial and adverse effects are disclosed, none are severe enough to be considered significant. None of the expected beneficial or adverse impacts have a significant amount of intensity that would require documentation in an EIS.
- 2) Consideration of Public Health and Safety. Public health and safety issues pertaining to public safety on roads to be shared with drill traffic (EA, Section 3. 12), and risks to the public health from chemical compounds (EA, Section 2.2 and Response to Comments) were considered in the analysis. The project Design Criteria reduce the risk to public health and safety to low levels.
- 3) Consideration of Unique Characteristics such as Proximity to Historic or Cultural Resources, Park Lands, Prime Farmlands, Wetlands, Wild and Scenic Rivers, or Ecologically Critical Areas. Historic and cultural resources are addressed in the following Item 8. There are no prime farmlands, rangeland, or forest land as defined in the Secretary of Agriculture's Memorandum Number 1827, Supplement 1, identified on the Grand Mesa National Forest. No project activities would occur near jurisdictional wetlands. Installation of gas gathering pipelines and road work could mobilize sediment that could reach a wetland, however Design Criteria reduce this probability to a very low level. There are no identified parklands or Wild and Scenic rivers in proximity to the project. The area of my decision has not been identified by any source as an ecologically critical area (Project File - Biological Assessment and Biologic Evaluation).

- 4) Consideration of the Degree to Which the Effects on the Quality of the Human Environment Are Likely to be Highly Controversial. This decision and its effects are not unique. Mineral-related (oil and gas and coal) drilling decisions have been made on this National Forest for the past 30 years. Furthermore, it was acknowledged when these lands were made available for oil and gas leasing, that site-specific operations could be proposed, and would have to be considered and included as part of the management scheme for the area. Surface related impacts are expected to be consistent with past impacts from similar projects in the project vicinity. The quality and use of the human environment in the project area is understood and have been analyzed and are not highly controversial from a scientific standpoint. Given that construction and drilling activities will occur for short periods of time at specific locations, there is very low risk of effects spreading to local communities. Monitoring of other drilling projects has shown that revegetation and rehabilitation of impacted areas can successfully occur. Given the small scale, localized impacts associated with this project, the understanding of local resource conditions, the intensity of this factor does not require documentation in an EIS.
- 5) Consideration of the Degree to Which the Possible Effects on the Human Environment are Highly Uncertain or Involve Unique or Unknown Risks. This decision is not unique for this area, as mineral related drilling projects have been previously approved in proximity to the project area, both on NFS lands and other federal or private lands. The Forest Service has experience in implementing and monitoring similar projects, the effects of which have been found to be reasonably predictable. The risks associated with increased traffic are understood, and can be predicted and managed to minimize the effects. The risks of constructing drilling locations and roads in areas where landslides have occurred are understood, and can be designed to minimize the effects. The effects of drilling and associated activities are also understood, and their effects can be evaluated given site specific circumstances. No effects from this decision would be classified as highly uncertain or involving unique or unknown risks. The intensity of this factor does not require documentation in an EIS.
- 6) Consideration of the Degree to Which the Action May Establish a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration. This decision is not precedent setting. The Forest currently administers oil and gas development activities in close proximity to the Hightower MDP project area. Further, the GMUG has previously analyzed and permitted oil and gas drilling and related production activities in the area, and in other areas on the forest. My decision follows the implementing regulations for oil and gas and special use activities (EA, Section 1.5), and is an identified and anticipated activity in the GMUG Forest Plan. Approving natural gas exploration drilling and potential production activities on this lease and adjacent land will not create a precedent for future drilling or other related activities on this lease, or on other oil and gas leases. Any future proposals would have to be evaluated on their own merits based on the issues and effects related to the location, timing and intensity of each action. My decision does not set a precedent or represent a decision in principle about a future consideration therefore documentation in an EIS is not required.
- 7) Consideration of the Action in Relation to Other Actions with Individually Insignificant but Cumulatively Significant Impacts. Oil and gas drilling and installation of transmission facilities has occurred in or adjacent to the Hightower MDP project area since the 1960s (EA, Table 3.0). Use of interim and final reclamation techniques for surface disturbing activities and access roads has successfully returned the land to a state where other land uses of the area can continue unimpeded. Immediate reclamation of disturbed areas to approximate original contour and revegetating reduces cumulative impacts. Experience in this and other areas on the forest shows that reclamation is generally successful within 2 or 3 growing seasons. The proposed project is short term (about 2 years), with periods of intense use in the specific areas that could have extended local use for a longer period of time if gas is found in producible quantities. Long-term disturbance is estimated to be about 15 acres in the 2,560 acre project area.
- 8) Consideration of the Degree to Which the Action May Adversely Affect Areas or Objects Listed in or

Eligible for Listing in the National Register Of Historic Places or May Cause Loss or Destruction of Significant Scientific, Cultural, or Historical Resources. The project record and field reviews support that no cultural or historic sites would be affected by this decision (EA, section 3.10, and project file). The SHPO was consulted, and concurred with these findings. When implementing the decision, any previously unidentified sites inadvertently discovered would be avoided or mitigated so there would be no effect upon them (see Appendix A of this document).

- 9) Consideration of the Degree to Which the Action May Adversely Affect an Endangered or Threatened Species or Its Habitat Has Been Determined Not to be Critical Under The Endangered Species Act. The US Fish and Wildlife Service (FWS) has been consulted in the environmental analysis process. A Biological Assessment has been conducted for this decision (EA, Section 3.9, Project File). All known endangered or threatened species were considered. This decision is likely to adversely affect the four Colorado River endangered fish species through water depletions. The scope of this project is consistent with the FWS Programmatic Biological Opinion for Water Depletions (May 27, 2007) as related to minerals activity on the GMUG. Further, this decision may affect, but is not likely to adversely affect Canada lynx. The FWS concurred with this determination in a letter dated January 2008 (project file). If additional findings regarding threatened or endangered, proposed or sensitive species are discovered, a new biological assessment or evaluation will be written, and any mitigation incorporated into site-specific SUPO or special use authorization approval.
- 10) Consideration of Whether the Action Threatens a Violation of Law or Requirement Imposed for the Protection of the Environment. To the best of my knowledge, this decision does not threaten violation of any laws and regulations imposed for the protection of the environment (refer to Section VIII of this document).

VIII. FINDINGS REQUIRED BY OTHER LAWS AND REGULATIONS

To the best of my knowledge, this decision complies with all applicable laws and regulations. In the following, I have summarized the association of my decision to some pertinent legal requirements.

Executive Order 13212 of May 18, 2001: This Order called the federal agencies to expedite their review of permits for energy-related projects while maintaining safety, public health, and environmental protections. My decision is consistent with this Order.

Federal Land Policy and Management Act of 1976: This Act allows the granting of land use permits on National Forest System lands. The regulations at Code of Federal Regulations Title 36 Part 251 (36 CFR 251) guide the issuance of permits under this Act. Land use permits are granted on National Forest System lands when the need for such is consistent with planned uses.

National Forest Management Act of 1976: The Forest Plan was approved in 1983 and amended in 1991, as required by this Act. This long-range land and resource management plan provides guidance for all resource management activities in the Forest. The National Forest Management Act requires all projects and activities to be consistent with the Forest Plan (EA, Section 1.6). Selection of Alternative 3 and associated Design Criteria (EA Section 1.6) is consistent with the Forest Plan.

Mining and Minerals Policy Act of 1970: This Act declared it would be the continuing policy of the Federal government and in the national interest to foster and encourage private enterprise in the development of economically sound and stable domestic mining industries, and the orderly and economic development of domestic mineral resources (EA, Section 1.5). This decision is consistent with this Act.

Mineral Leasing Act of 1920, as amended the Act of November 16, 1973, and by the Federal On Shore Oil and Gas Leasing Reform Act of 1987: This Act as amended in 1973 authorizes the Forest Service to issue authorizations for oil and gas pipelines and related

facilities that are wholly on NFS lands. The Act as amended in 1987 gives federal agencies authority to lease oil and gas reserves, and assigned the Secretary of Agriculture responsibility to approve surface use plans for oil and gas operations. Special use authorizations issued for pipeline and compressor facility would be consistent with this Act. The GMUG Oil and Gas Leasing EIS was prepared to comply with this Act. Approval of these surface activities to exercise lease rights is consistent with this Act.

Clean Air Act of 1955, as amended 1977: This Act required States to develop plans to implement, maintain, and enforce primary and secondary ambient air quality standards for any air pollutants, and called federal agencies to prevent deterioration of air quality. Effects on air quality as a result of this project were estimated using current modeling techniques, and showed that this project will have negligible effects on air quality. This decision is consistent with this Act.

Clean Water Amendments of 1972: This Act requires State and Federal agencies to control and abate water pollution. This project was designed to comply with this Act by careful placement of project facilities, including sediment control and spill prevention measures in the design (EA, Section 2.2 and Table 2.2.15). This decision is consistent with this Act.

Executive Order 11990 of May 1977: The management of wetlands and floodplains are subject to Executive Orders 11990 and 11988, respectively. The purpose of the EO's are to avoid to the extent possible the long and short term adverse impacts associated with the destruction or modification of wetlands and floodplains and to avoid direct or indirect support of new construction in wetlands wherever there is a practical alternative. This order requires the Forest Service to take action to minimize destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. In compliance with this order, Forest Service direction requires that an analysis be completed to determine whether adverse impacts would result (EA, Section 3.5). The project was designed to avoid wetlands. This decision is consistent with this Order.

National Historic Preservation Act: All areas of potential disturbance have been surveyed for cultural resources. Hence there is no impact to significant cultural or historic properties (see item 8 above). Ongoing consultation has identified no places of American Indian cultural or religious significance (EA, Section 3.10).

Endangered Species Act: Compliance with this Act is addressed in Section VII, of this document.

National Environmental Policy Act: The documentation for this project supports compliance with this Act. The process of environmental analysis and decision making for this proposed action, and the associated documentation, have been conducted to fully comply with the requirements of NEPA. These include requirements of the Act itself, CEQ regulations at 40 CFR 1500, Forest Service policies at Forest Service Handbook 1909.15, and the requirements that evolved through the practice of NEPA, and from case law.

Energy Policy Act of 2005: With respect to oil and gas, this Act called the USDA-Forest Service to ensure timely action on applications for permits to drill and ensure compliance with all applicable environmental and cultural resource laws. This Decision for an MDP sets the opportunity for expeditious review of APDs. Further, this Act calls agencies managing federal oil and gas resources to have stipulations on oil and gas leases only as restrictive as necessary to protect resources. Granting exceptions to lease stipulations in this Decision is consistent with this Act.

IX. IMPLEMENTATION DATE AND ADMINISTRATIVE REVIEW AND APPEAL OPPORTUNITY

This decision is subject to administrative review pursuant to Federal Regulations at 36 CFR 215. Appeals

(including attachments) must be in writing and filed (regular mail, fax, e-mail, hand-delivery, express delivery, or messenger service) with the Appeal Deciding Officer (§ 215.8) within 45 days following the date of publication of a legal notice of this decision in the *Grand Junction Daily Sentinel*. Attachments received after the 45-day appeal period will not be considered. The publication date of the legal notice in the newspaper of record is the exclusive means for calculating the time to file an appeal (§ 215.15 (a)). Those wishing to appeal should not rely upon dates or timeframe information provided by any other source.

The appeal must be filed (regular mail, fax, email, hand-delivery, or express delivery) with the Appeal Deciding Officer at:

USDA, Forest Service, Region 2
Attn: Appeal Deciding Officer
P.O. Box 25127
Lakewood, CO 80225-25127

For Express delivery or messenger services:
740 Simms Street
Golden, CO 80401

Fax: 303-275-5134 to the attention of Appeals
Email: appeals-rocky-mountain-regional-office@fs.fed.us

The office business hours for those submitting hand-delivered appeals are: 8:00 am through 4:30 pm, Monday through Friday, excluding holidays. Electronic appeals must be submitted in a format such as an email message, or Word (.doc) to the email address above. In cases where no identifiable name is attached to an electronic message, a verification of identity will be required. A scanned signature is one way to provide verification.

The notice of appeal must meet the appeal content requirements at 36 CFR 215.14. It is an appellant's responsibility to provide sufficient activity-specific evidence and rationale, focusing on the decision, to show why the Responsible Official's decision should be reversed. At a minimum, an appeal must include the following (§215.14):

- (1) Appellant's name and address (§ 215.2), with a telephone number, if available;
- (2) Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
- (3) When multiple names are listed on an appeal, identification of the lead appellant (§ 215.2) and verification of the identity of the lead appellant upon request;
- (4) The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
- (5) The regulation under which the appeal is being filed, when there is an option to appeal under either this part or part 251, subpart C (§ 215.11(d));
- (6) Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
- (7) Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
- (8) Why the appellant believes the Responsible Official's decision failed to consider the substantive comments; and
- (9) How the appellant believes the decision specifically violates law, regulation, or policy.

Notices of Appeal that do not meet the requirements of 36 CFR 215.14 will be dismissed.

If no appeals are filed within the 45-day time period, implementation of the decision may occur on, but not before, 5 business days from the close of the appeal filing period.

X. CONTACT PERSON

For additional information concerning this decision, please contact Niccole Mortenson, Minerals and Engineering NEPA Specialist, (970) 874-6616, or nmortenson@fs.fed.us.

XI. SIGNATURE AND DATE

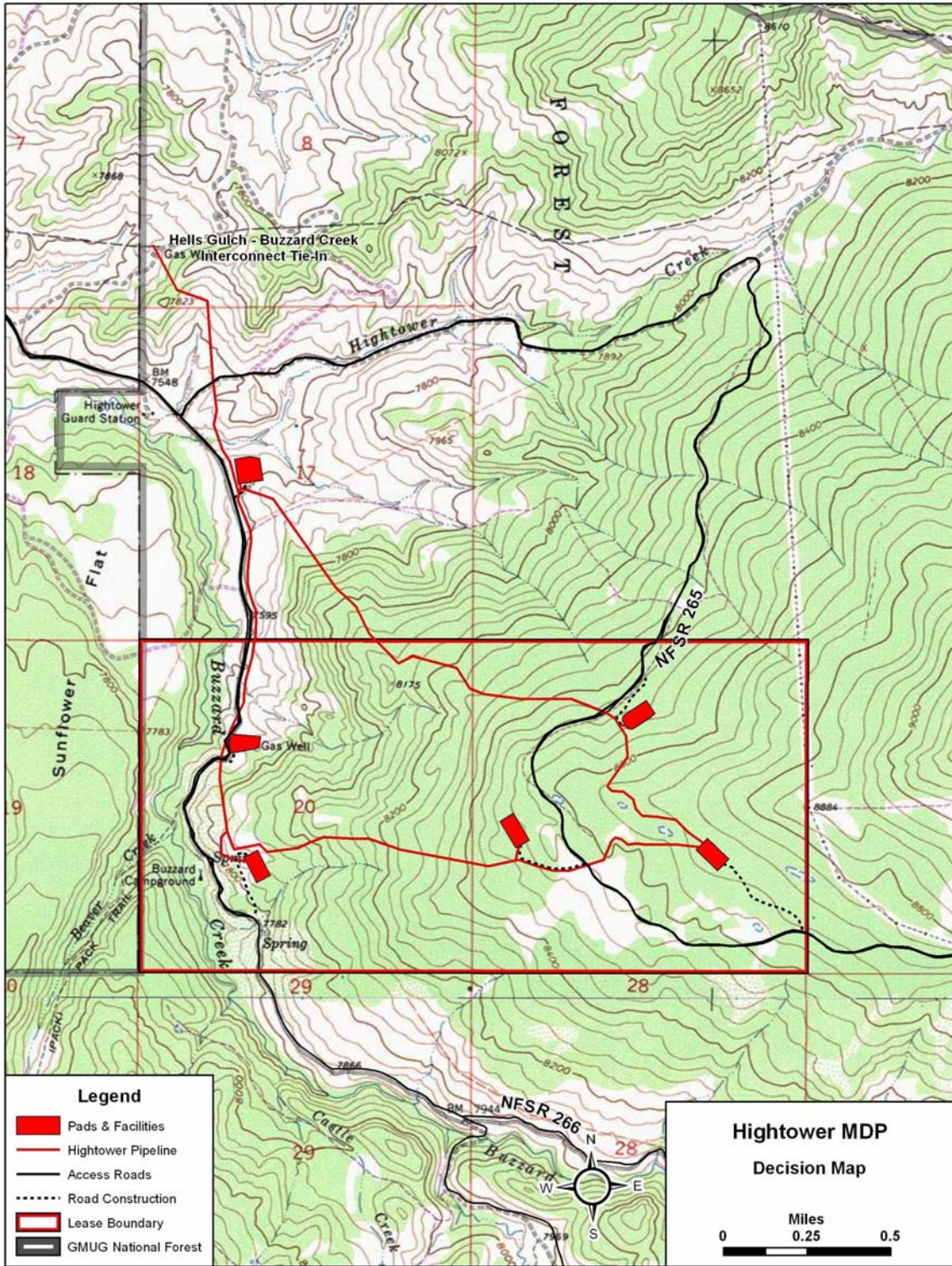
Charles S. Richmond

4/7/2008

CHARLES S. RICHMOND
Forest Supervisor
Grand Mesa-Uncompahgre-Gunnison National Forests

DATE

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APPENDIX A

Project Design Criteria and Monitoring

Design Criteria/BMP	Resource	Source/Reference
ROADS/TRANSPORTATION		
Proponent and the FS will conduct a pre-use road condition assessment for affected FS roads.	Roads	FS Road Use Permit , FSH 7709.56
Roads will be designed/upgraded using a structural design standard sufficient to support project traffic (i.e., AASHTO Guidelines for Geometric Design of Very Low-Volume Local Roads) or equivalent design standards as approved by FS. Engineering analysis will be conducted for all routes requiring horizontal and vertical alignment with respect to critical vehicle and design vehicle. Design vehicle shall be defined. Roadway structural design sections will be per AASHTO 1993 Pavement Design Guide. All design elements shall be approved and stamped by a Colorado Registered PE having pavement structural design expertise.	Roads, safety	FSM 7100-zero code FSH 7709.56 AASHTO (ISBN:1-56051-166-4)
Operator will have a FS Road Use Permit for all phases of operations. Proponent will follow all conditions of road use permit with regard to traffic control, road maintenance and winter operations to protect forest visitors and forest resources. Road closures resulting from construction activities will be planned ahead and the FS shall be notified at least 48 hours in advance.	Public and operational safety	Regional Forester Order R2-2007-01 GMUG Order FS-01-01
Identify specific locations of drainage features and BMPs on road construction plans, and submit for FS approval prior to construction	Soil, water, fish	Company/FS/BLM, FSH 7709.56 Road Use Permit The Gold Book
Outslope/cross-slope access roads to promote removal of water from the road surface. Install relief ditches at regular intervals to direct drainage off of the road grade and into vegetated areas.	Soil, water, fish	Company/FS The Gold Book FSH 2509.25 Forest Plan Pg III-74
Use gravel or crushed rock on the running surface of the road to reduce ongoing erosion of the road by vehicle traffic. Material must meet specifications of FP-03.	Soil, water, fish, air, recreation, road	Company/FS FSH 7709.56, FSH 2509.25 FHWA-FLH-03-002
Rutting that compromises the structural integrity of the roads is not permitted. Such rutting could result in use of that road ceasing immediately and remaining shut down until repairs and improvements are made to	Roads/Resource Protection	FS FSM 7709.56, FSH 2509.25, GMUG

Design Criteria/BMP	Resource	Source/Reference
prevent additional rutting. Standards for rutting will be described in the Road Use Permit.		Engineering Forest Standard
Access roads will be gated and closed to the general public. Monitor personnel to ensure access is not abused; i.e., no access during non-working hours for purposes unrelated to the project such as hunting or off-roading.	Wildlife, public safety, Soils, recreation	Company/FS The Gold Book, Road Use Permit (16 U.S.C. 535 & 537), FSM 7709.56, Oil and Gas Leasing FEIS, App. H
Perform dust abatement on roads during construction and development activities using water. Proponent will coordinate with the FS and Mesa County Road and Bridge Dept in regard to any chemical dust suppressant treatment along NFSR 265, 266 and 270.	Air, visuals, water, safety, road	Company/FS Road Use Permit (16 U.S.C. 535 & 537), BMP Schedule A Agreement w/ Mesa Cty Rd and Bridge
A designated snowmobile parking area to allow access to the S-P trail will be maintained and plowed by the proponent along NSFR 266.	Roads, Recreation	FS
When feasible, project workers will car pool to and from surrounding cities and towns to minimize vehicle-related emissions and fugitive dust.	Air, visuals, roads	Company BMP
Power-wash all construction equipment (including the trailers hauling construction equipment) and vehicles prior to the start of construction. If vehicle has been taken away from project area and used off-pavement, washing is required prior to re-entering the forest.	Vegetation, noxious and invasive weeds	Company/FS BMP, Noxious and Invasive Weed Management Plan for Oil and Gas Operators (3/07) Road Use Permit
Proponent will abide by the Grand Mesa Travel Management decision, December 1994 which states: Motorized travel on the Grand Mesa National Forest is restricted to designated roads and trails.	Watershed, soils, water, wildlife, safety	FS Grand Mesa Travel Management Plan
To reduce conflicts with recreationists, mobilization and demobilization of drilling equipment, completion equipment and facing units will not occur during Friday, Saturday and Sunday of the opening weekends of the combined muzzleloader and archery season (when the two seasons overlap), the first rifle season, and the second rifle season-for a total of three weekends. In addition, to the extent possible, mobilization and demobilization will be scheduled during weekdays and will avoid weekends and holidays.	Recreation, safety	FS –District’s Standard Operating Procedure DOW recommendation/Public Interest
PIPELINE CONSTRUCTION		

Design Criteria/BMP	Resource	Source/Reference
<p>For pipeline crossing wetlands: Wetlands will be located and field marked prior to pipeline construction activity. All construction equipment will be placed on mats and the mats will be removed upon completion. Sediment barriers will be installed on the down slope side of the work area to prevent flow of sediment into adjacent wetlands. The barriers will be maintained until final stabilization is complete. After backfilling the trench, the wetland area will be restored to its original contours.</p>	Soil, Watershed	<p>Company/FS</p> <p>USDOT Regulations 49 CFR 192 & 18 CFR 2.69</p>
<p>For pipeline construction adjacent to roads, trench shall be a minimum of 5 feet deep where located under bar ditches to allow for maintenance of the ditches without compromising the pipeline, and minimum of 3 feet depth elsewhere.</p>	Soil, watershed, roads	Company
<p>For pipeline construction across NFSRs 265 and 266 using open cut technique: trench shall minimum of 5 feet deep. Backfill materials shall meet FP-03 specifications and shall be applied and compacted in 6 inch lifts with optimum moisture and compaction techniques. Road shall be resurfaced to at least the original condition by smoothing and blading to match the crown and shoulder slopes of the adjacent road prism.</p>	Roads	Company/FS
<p>Stream and wetland crossings will be identified and appropriate construction techniques (open cut or boring) will be described in the Stormwater Management Plan. A map depicting the location of inventoried wetlands, intermittent and perennial stream crossings will be included in the SWMP. The SWMP will include a set of BMP's and each crossing will reference the proper BMPs to employ.</p>	Soils, wetlands, watershed	Company/FS
<p>For pipeline crossing Hightower Creek (intermittent stream): If open trench technique is used, spoils and topsoil shall be segregated and stored at least 30 feet away from high water mark. Work will be done in as short a time as possible and during times when stream flow is minimal or non-existent. If saturated or unstable soils are present, all work within the stream will be conducted from wooden mats. Erosion control measures and other BMPs outlined in the Stormwater Management Plan will be implemented. Upon completion, the stream bed will be replaced matching the pre-disturbance stream contours. Native stream bed material will be used to stabilize the stream bed. Additional stabilization measure may be used to stabilize the stream banks (i.e. erosion matting, rip-rap, trench plugs)</p>	Watershed, soils	Company/FS
<p>Pipeline corridors will be signed and closed or physically blocked to prevent illegal travel.</p>	Soil, recreation	FS - Grand Mesa Travel Management Plan

Design Criteria/BMP	Resource	Source/Reference
If hydrostatic testing is planned for checking pipeline integrity, a hydrostatic test plan shall be prepared by the proponent and submitted for approval by the Authorized Officer. The plan shall be designed to minimize soil erosion, protect water quality, protect aquatic species and minimize disturbance to streambanks and streambeds.	Soil, water	BLM FSH 2509.25, Watershed Conservation Practices Handbook
GEOHAZARDS		
Stabilize steep cut slopes that will remain unreclaimed over a winter or longer, by placing native boulders or concrete "eco"-blocks. Conduct a geotechnical evaluation prior to activity at the 20-6 wellpad and the access road to the 20-11 pad, to assure proper placement of extra weight to avoid accentuation of slope movement	Soil, water, fish	Company/FS FSH 2509.25
Conduct slope stability monitoring before and after construction on sites 20-6 and access road to 20-11	Watershed, soils	FS-in response to moderate geologic hazards present.
Avoid all high geologic hazard areas.	Soil, water, roads	FS Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104
WATERSHED AND SOILS		
Follow BLM and State well casing requirements to protect shallow ground water.	Water	FS/BLM/STATE 43 CFR 3162 and 3164
Conduct drilling, completion and other well operations in accordance with BLM and COGCC rules to prevent communication between surface aquifers and producing formations.	Water, soil	BLM and State regulatory requirement The Gold Book, 43 CFR 3162 and 3164
Impervious secondary containment structures shall be constructed and maintained around any petroleum product and produced water storage tanks, or other toxic liquids subject to 40 CFR 112 and be capable of holding 1-1/2 times the volume of the largest tank. Load valves shall be located within the diked area.	Water, soil	The Gold Book, 40 CFR 112 Oil and Gas Leasing Analysis FEIS, pg H-20
A minimum of two feet of freeboard will be maintained between the maximum fluid level and the top of the berm. The pits will be designed to exclude all surface runoff. Pits will be constructed in cut portion of well site	Water	Oil and Gas Leasing Analysis FEIS, pg H-20

Design Criteria/BMP	Resource	Source/Reference
Drill pads, staging and storage areas, roads and pipelines will not be located in wetlands, floodplains or riparian areas unless specifically approved by authorizing officer.	Soil, water	Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104, EO 11990 & 11988
Roads will cross streams at right angles, and access across wetlands, floodplains, and riparian areas will be minimized.	Soil, water	BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104, EO 11990 & 11988, Forest Plan Pg III-187
Adhere to permit conditions identified by the Army Corps of Engineers (ACE) in any/all 404 permits issued for the proposed dredge and fill operations in jurisdictional drainages/wetlands.	Soil, water, fish	Company FSH 2509.25, 404 Permit
Within water influence zones, an adequate vegetative buffer or filter strip will be maintained to filter runoff from the road before it reaches the creek, wherever possible.	Soil, water, fish	Company/FS FSH 2509.25
Maintain channel stability, stream profile and vegetative cover in at least their current condition. Avoid altering vegetation cover which causes stream instability, loss of channel cross-sectional area and the loss of water quality.	Watershed, soils	FS Forest Plan Pg III-183 Road Use Permit
Prevent debris from management activity accumulating within stream channels, and protect naturally accumulated large organic debris.	Water	Forest Plan Pg III-52
Protect all disturbed areas within 100 feet of a watershed influence zone (WIZ) with silt fence or other sediment trapping materials specified by the Forest Service.	Soil, vegetation, water	Company/FS FSH 2509.25
Restrict use of heavy construction equipment to periods when the soil is least susceptible to compaction or rutting, in order to prevent permanent damage to soil and to avoid compaction and disturbance in riparian ecosystems.	Water, soil	FS Forest Plan Pg III-52, Pg III-184
Minimize sediment yields to the riparian area caused by construction activities, by completing or treating active construction projects prior to expected significant runoff periods.	Watershed, soils	FS Forest Plan Pg III-187
EROSION CONTROL		

Design Criteria/BMP	Resource	Source/Reference
Special mitigation techniques will be required on slopes between 40 & 60% including erosion control devices and water control.	Soil, water	Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104
Place geotextile material on soils beneath gravel surfacing at well pads and facilities site where geotechnical evaluation determines it is necessary.	Soil, water, fish	Company The Gold Book
Armour fill slopes (drilling locations, compressor facility, roads) with excavated rock and/or slash vegetation (brush, branches, and other slash vegetation) to reduce the velocity of rain drops and subsequent erosion. Install brush barrier or other natural sediment control devices along the toe of the drilling location fill slopes.	Soil, water, fish	Company/FS FSH 2509.25, BMP
Roadside ditches will be allowed to vegetate or include large rocks or stones to slow the velocity of drainage and allow sediment to settle out.	Soil, water, fish	Company/FS FSH 2509.25
Install water bars or hay bale dikes perpendicular to the flow direction of the ditch (when drainage ditches are installed to direct runoff away from the road) to reduce runoff velocity and to settle out sediment.	Soil, water, fish	Company/FS FSH 2509.25 Road Use Permit
Install sediment traps in problem locations where insufficient vegetative buffering is available to filter runoff prior to entering any tributaries.	Soil, water, fish	Company/FS FSH 2509.25, Forest Plan Pg III-187
Design and implement storm water management plan in accordance with standards set forth by the CDPHE.	Soil, water, vegetation, fish	Company/FS/BLM/State Storm Water Permit, EMS, The Gold Book
Design and engineer any planned construction on steep slopes according to Forest Service standards and design criteria, including an erosion control and maintenance plan. The authorized FS officer will approve water bar placement and design.	Soil, vegetation, water	Company/FS The Gold Book, FSH 2509.25, Reclamation Plan
Chip or shred aspen and other slash, and use it as mulch during reclamation or on slopes to reduce erosion.	Soils, vegetation	FS BMP
RECLAMATION		
Proponent will prepare an interim and a final reclamation plan as part of the SUPO, subject to FS approval.	Vegetation	The Gold Book, SUPO, 43 CFR 3160, FSM 2840
Stabilize disturbed areas during and after construction activity to control erosion and sedimentation, so as not to encroach off site areas. Re-vegetate with certified	Soil, water, fish, wildlife, visuals,	Company/FS The Gold Book , FSH

Design Criteria/BMP	Resource	Source/Reference
weed-free seed mixes of native plant species indigenous to the project area, as determined by the FS. Successful re-vegetation is defined as 80% cover of adjacent undisturbed ground within a 5 year period. Successful re-vegetation may require re-seeding, applying fertilizer and periodic watering.		2509.25, Forest Plan, Pg III-52 and III-75, Noxious and Invasive Weed Management Plan for Oil and Gas Operators (3/07)
Handle topsoil carefully during stripping, stockpiling, and backfilling operations so that soil horizons are not blended and the fertility of the topsoil layer is not compromised. Segregate and store topsoil separately, minimize the stockpile depth to maintain soil fertility, not to exceed six feet depth. Immediately apply seed and mulch, and maintain it in a vegetated condition until needed for reclamation.	Soil, vegetation	Company/FS The Gold Book, FSH 2509.25, Reclamation Plan, Forest Plan Pg III-73
Reclaim all areas not necessary for the continued operation of the wells following well completion. Areas where soil has been disturbed should be re-seeded within 30 days, subject to weather conditions.	Soil, vegetation, water, visual	Company/FS The Gold Book, Forest Plan Pg III-74
Re-seed cutbanks as soon as possible (hydro-mulch seeded and fertilized, if necessary) in order to stabilize these disturbed sites.	Soil, vegetation, water, visual	Company/FS The Gold Book, FSH 2509.25
Use ripping or another roughening method as prescribed by FS to reduce compaction prior to replacement of the topsoil and seeding.	Soil, vegetation, water	Company/FS The Gold Book, FSH 2509.25, Reclamation Plan
Inoculate topsoil that has been stored for more than 3 years with mycorrhizae fungi before spreading to improve soil fertility.	Soil, vegetation	FS
Weed control will be conducted on all areas disturbed by project activities through an Approved Pesticide Use and Weed Control Plan approved by the Authorized Officer.	Soils, vegetation, noxious and invasive weeds, visual	Company/FS BMP, Noxious and Invasive Weed Management Plan for Oil and Gas Operators (3/07), Reclamation Plan, The Gold Book
Perform weed monitoring on all areas disturbed by project activities, and continue reclamation measures annually (or as frequently as the Authorized Officer determines) throughout the 20 to 30 plus year life of the wells.	Soils, vegetation, noxious and invasive weeds.	Company/FS BMP, Noxious and Invasive Weed Management Plan for Oil and Gas Operators (3/07), Reclamation Plan, The Gold Book
Minimize vegetation removal as much as possible during project design, to reduce vegetation effects.	Soils, vegetation, noxious and invasive weeds,	Company/FS BMP, FSH 2509.25

Design Criteria/BMP	Resource	Source/Reference
	visual	
Revegetate all areas capable of supporting vegetation disturbed during road construction and/or reconstruction to stabilize the area and reduce soil erosion.	Soils, vegetation, water	FS Forest Plan Pg III-74
Strive to return disturbed areas to the approximate mix of grasses, shrubs, and trees present before the disturbance.	Wildlife, vegetation, visuals	Company The Gold Book
Final abandonment: Equipment will be removed from pads. Access roads and pads will be re-contoured and revegetated per FS specifications. After seeding, lop and scatter stockpiled trees and slash over the disturbed area.	Vegetation	FS BMP
When constructing reserve pits, remove large rocks and sharp objects. Line pit with an impermeable synthetic liner with heat treated seams and a minimum of 125 lbs/sq inch burst strength to contain all drilling mud and fluids. During reclamation when the pit is dry, the liner will be cut at mud level. The above mud level portion will be disposed of at an approved landfill, and the below mud level portion will be folded to contain cuttings, buried in the pit, and covered with a minimum of three feet of cover.	Water	Company/FS The Gold Book, 43 CFR 3160 Oil and Gas Leasing Analysis FEIS, pg H-20-21
Due to slope stability concerns with 20-6 pad the cuttings pit, in addition to the reserve pit, will be lined with an impermeable synthetic liner with heat treated seams and a minimum of 125 lbs/sq inch burst strength to contain all cuttings. It is felt that water accumulation in the cuttings may destabilize this portion of the slope after reclamation activities. When the pit is dry, the liner will be cut at cuttings level. The cut portion will be disposed of at an approved landfill, and the lower portion will be folded to contain cuttings, buried in the pit, and covered with a minimum of three feet of cover.		The Gold Book, 43 CFR 3160 Oil and Gas Leasing Analysis FEIS, pg H-20-21
Complete pit and interim site reclamation within 60 days after well completion or as soon thereafter within the appropriate spring or fall planting season.	Water	FS
NOISE		
Install mufflers on all internal combustion engines and certain compressor components.		Company/FS/BLM The Gold Book
House the compressor unit in a noise reducing building to minimize effects to big game winter range and breeding birds in spring/summer.		Company/FS

Design Criteria/BMP	Resource	Source/Reference
Ensure facilities meet Colorado sound requirements.	Wildlife, recreation	Company/FS COGCC Noise control regulations
VISUALS		
Paint surface facilities a standard environmental color selected by the Forest Service to better blend the facilities with their surroundings and thereby reduce visual effects.	Visuals	Company/FS The Gold Book , Forest Plan Pg III-146
Where possible, surface facilities will be screened from view to minimize visibility. Use a combination of low profile equipment, vegetative screening or berming.	Visuals	FS Visual Resource Protection Plan (VRPP)
Minimize access routes into the project area. Follow land contours to minimize clearings, cuts and fills.	Visuals/soil	FS VRPP
Design and locate vegetative manipulations for clearings and structures in the landscape to retain the form, line, color and texture of the landscape.	Visuals	FS VRPP
Remove equipment and structures not needed to operate and maintain facilities.	Visuals	FS VRPP
Promptly remove survey stakes, flagging and other construction related debris.	Visuals	FS VRPP
When possible, feather the edges of cleared pipeline corridor to blend into the surrounding landscape.	Visuals	FS VRPP
Cut all stumps to 12 inches or less in height.	Visuals/timber	FS, VRPP
Log landings along NFSR 265 are prohibited	Visuals/timber	FS
If cull log decks can be seen from NFSR 265, these decks will be chipped or used for reclamation purposes.	Visuals/timber	FS
If outdoor lighting is required, direct the light to where it is needed and where possible, use low pressure sodium light sources. Keep lighting to the minimum needed for safe operations.	Visuals	FS VRPP
WILDLIFE		
Prior to any construction between March 1 and July 31, survey areas within 0.25 miles of the proposed disturbance for the presence of active raptor nests. If active raptor nests are documented, consult with the	Wildlife	Company

Design Criteria/BMP	Resource	Source/Reference
district Wildlife Biologist before proceeding.		The Gold Book
Survey for Boreal Toads in ponded wetlands within 0.5 miles of drilling locations, roads and pipelines prior to surface disturbance. Surveys should be conducted in late May or early June for egg masses and/or toadlets.	Wildlife	FS
Prior to ground-disturbing activities, conduct surveys for endangered or threatened species.	Wildlife	Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, ESA (16 U.S.C.A. §§1531-1534), 43 CFR 3160
In big game winter range, no exploration, drilling or development is allowed from December 1-April 30 (unless specifically approved by authorized officer)	Wildlife	Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104
Limit road use to periods when animals are not present on winter range.	Wildlife	Lease Stipulation, BLM Manual 1624 & 3101, FSM 1650 & 2820, 43CFR 3101.1, 36 CFR 228.104
Install netting on unreclaimed reserve pits to deter birds from landing on water from May through October.	Wildlife	Company/FS BMP/The Gold Book
Install screens or other devices on production equipment to prevent entry by birds.	Wildlife	FS, COGCC Migratory Bird Policy
Fence the reserve pit with 8 foot tall fence to prevent wildlife and livestock entry.	Wildlife, livestock	The Gold Book, DOW recommendation for moose, 43 CFR 3160
Place escape ramps/ladders in reserve pits while open, to prevent small mammal entrapment. Escape ramps will be placed every 50' along the reserve pit slope and at each corner of the pit. Escape ramps shall be at least 24" wide, well anchored, and extend from the bottom to the top of the pit.	Wildlife	DOW recommendation/BMP
Manage the site to minimize garbage accumulation. No overnight food storage or storage in open containers will be allowed. Use bear-proof trash receptacles and empty them often.	Wildlife	Company/FS/DOW BMP
Project employees are prohibited from carrying archery equipment or firearms or bringing dogs to the project area.	Wildlife	Company/FS The Gold Book
LIVESTOCK		
To reduce conflicts with grazing on/off dates, the company will call, notify and coordinate activities with	Livestock	FS requirement

Design Criteria/BMP	Resource	Source/Reference
designated permittees on the Buzzard and Porter allotments <u>as well as</u> contact the FS Range Conservationist for any mob or de-mob activities planned during or near on/off dates (6/16 and 10/10 for Buzzard allotment, and 7/1 and 9/30 for Porter allotment). Dates for livestock movement may vary from year to year, so coordination each year is essential to reduce conflicts.		
TIMBER		
Lop and scatter slash to a maximum depth of 24 inches in the aspen clearcut units.	Timber	FS Forest Plan Direction on long term productivity, down woody debris and regeneration needs
Scatter up to a maximum of 10-20 tons/acre of large cull logs in the aspen clearcut units. No more than 50% of the ground surface should be covered in large cull logs; deck excessive amounts of large cull logs at landing sites. For pipelines, road and drilling location construction, lop and stockpile slash for erosion control and for interim and final reclamation.	Timber	FS Forest Plan Direction on long term productivity, down woody debris and regeneration needs.
CULTURAL		
Prior to the construction process, complete a Class III cultural resources survey on all areas proposed for surface disturbance. Should any significant cultural resources be located, the Forest Service archeologist will make recommendations for avoidance or mitigation. Proponent will then coordinate with the Forest Service on appropriate measures to be implemented.	Cultural	Company/FS/BLM Section 106 NHPA (36 CFR 800), Lease Stipulation, The Gold Book, 43 CFR 3160
HAZARDOUS MATERIALS		
Operators of onshore Federal oil and gas leases shall report all spills, discharges, or other undesirable events.	Water	BLM NTL-3A (CFR 221.5, 221.7, and 221.36), SPCC Plan
If spills occur, remove contaminated soil from NFS lands and properly dispose of it prior to backfilling and reclamation.	Water	FS BMP
Refueling and lubricating are not allowed within 100 feet of wetlands, water bodies and drainages. Do not store	Water	FS

Design Criteria/BMP	Resource	Source/Reference
hazardous materials, chemicals, fuels, etc. within 100 feet of wetland or surface waters unless it is within the confines of the constructed well pad.		BMP
Include control and containment mitigation in the Spill Prevention Controls and Countermeasures (SPCC) Plan, Emergency Response Plan, and Safety Plan in the event of a release of hazardous substances or materials. Copies of plans will be provided to USFS prior to construction onsite visit, so review could be completed prior to any disturbance operations.	Water	FS SPCC
Concentration of non-exempt hazardous substances in pit at time of reclamation will not exceed the standards of CERCLA as amended by SARA. All oil and gas drilling-related CERCLA hazardous substances that are removed from a location must be disposed of in accordance with applicable Federal and State regulations.	Water	FS/BLM The Gold Book, 42 USC 9605 as amended by SARA (PL 99-499, 42 USC 9601(14), 42 USC 6921(2)(a), EPA 530-95-003, Oil and Gas Leasing FEIS, pg H-20
MISCELLANEOUS		
Drill rigs will be powered by Tier 2 engines or better.	Air	Company
Implement technology to reduce greenhouse gas emissions following EPA Natural Gas Star BMPs.	Air	Company
Wells will be directionally drilled from multi-well pads.	Soils, wildlife, roads	Company, Gold Book pg 15
Hydraulic fracturing fluids will be recovered to a tank.	Water, soils	Company
Install remote telemetry monitoring equipment.	Soil, water, fish, wildlife, roads	Company
All equipment with an internal or external combustion engine shall have a spark arresting device properly installed, maintained and in effective working order meeting either USDA Forest Service Standard 5100-a (as amended) or Society of Automotive Engineers (SAE) recommended practice J335(b) and J350(a). All equipment, including welding trucks, will be equipped with fire extinguishers and other fire fighting equipment as required by the Forest Service and outlined in the Surface Use Plan of Operations (SUPO).	Public safety, soil, water, air, vegetation	FS Order # R2-2007-01
Proponent shall abide by all FS wildfire restrictions or seek exemption from the authorized officer for certain activities. Depending upon the Stage of Restriction, prohibited activities may include smoking, using explosive material, welding or using an acetylene or similar torch with open flame, operating a chainsaw	Public safety, wildfire	FS Regional Policy regarding Wildfire Stage Restrictions

Design Criteria/BMP	Resource	Source/Reference
Backfill all pits (exceptions flare pit, and also, see reserve pit under water quality section), cellars, rat holes or other holes unnecessary for further operations immediately after the drill rig is released.	Safety	FS
As part of the SUPO, the proponent will submit a Spill Prevention Controls and Countermeasures (SPCC) Plan, a Stormwater Management (SWPP) Plan, and a Fire/Emergency/Health and Safety Plan to the FS for review/approval.	Other, Administration	FS/BLM 40 CFR 112
The GMUG monitors some project activities under the established Environmental Management System (EMS). Certain parts of the Hightower MDP fall under this purview, and the FS will conduct specific inspections for consistency with the EMS.	Monitoring	FS, EMS

Monitoring:

To further understanding of levels of emissions from drill rigs in the Piceance Basin, the operator will be required to provide the FS with daily fuel consumption logs for the drill rigs throughout the entire drilling program.