

**United States Department of the Interior
Bureau of Land Management**

**Environmental Assessment
for the SWEPI LP Dry Sage Unit Wells**

Little Snake Field Office
455 Emerson Street
Craig, Colorado 81625

DOI-BLM-CO-N010-2011-0112-EA

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CHAPTER 1 - INTRODUCTION

1.1 IDENTIFYING INFORMATION

CASEFILE/PROJECT NUMBER: COC65170 & COC65171

PROJECT NAME: Dry Sage Unit Well #1-21 & #1-23

PROPONENT: SWEPI LP

BACKGROUND: This Environmental Assessment (EA) has been prepared by the BLM to analyze two Applications for Permit to Drill (APDs) for oil wells located in the exploratory Dry Sage Unit.

1.2 PROJECT LOCATION AND LEGAL DESCRIPTION

LEGAL DESCRIPTION:

- COC65171, Dry Sage Unit Well #1-21, SWNE, Sec. 21, T. 12 N., R. 90 W., 6th PM, Moffat County.
- COC65170, Dry Sage Unit Well #1-23, Lot 17, Sec. 23, T. 12 N., R. 90 W., 6th PM, Moffat County.

See attached Proponent Provided Map

1.3 PURPOSE AND NEED

To allow development of federal oil and natural gas resources to meet the public's continuing economic demands for a dependable and affordable supply of oil and natural gas, while giving due consideration to the protection of other resource values. To facilitate the leaseholder's rights to develop oil and gas resources within their federal mineral leases in accordance with the Mineral Leasing Act of 1920, as amended and other applicable laws.

The requested federal action is needed to provide access across federal lands managed by the BLM and allow development of minerals within an existing federal unit, according to the principles of multiple use, while maintaining the rights and obligations of other users and protecting resources in the project area.

1.3.1 Decision to be Made

The BLM has prepared this EA to analyze the decision to approve the APDs.

1.4 PLAN CONFORMANCE REVIEW

The Proposed Action was reviewed for conformance (43 CFR 1610.5, BLM 1617.3) with the following plan:

Name of Plan: Little Snake Record of Decision and Resource Management Plan (RMP)

Date Approved: October 2011

Decision Language: The Proposed Action is in conformance with the LUP because it is specifically provided for in the following LUP goals, objectives, and management decisions:

- Allow for the availability of the federal oil and gas estate (including coalbed natural gas) for exploration and development. Objectives for achieving these goals include:
- Identify and make available the federal oil and gas estate (including coalbed natural gas) for exploration and development.
- Facilitate reasonable, economical, and environmentally sound exploration and development of oil and gas resources (including coalbed natural gas).

Section/Page: Section 2.13 Energy and Minerals/ page RMP-36

1.5 SCOPING PROCESS

1.5.1 Scoping: NEPA regulations (40 CFR §1500-1508) require that the BLM use a scoping process to identify potential significant issues in preparation for impact analysis. The principal goals of scoping are to allow public participation to identify issues, concerns, and potential impacts that require detailed analysis.

External Scoping Summary: The action in this Environmental Assessment (EA) is included in the NEPA log posted on the Little Snake Field Office (LSFO) web site:

http://www.blm.gov/co/st/en/BLM_Information/nepa/lsfo.html.

The Notices of Staking (NOSs) have been posted in the public room of the LSFO for a 30-day public review period beginning 08/27/11 when the NOSs were received, and may be viewed during regular business hours (7:45 a.m. to 4:30 p.m.), Monday through Friday, except holidays.

Persons/Agencies Consulted: Colorado Parks & Wildlife, Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office.

Issues Identified: No issues were identified during public scoping. No comments were received.

Internal Scoping Summary: Onsite inspection was initially conducted on 08/16/11 with representatives from Yates Petroleum Corp., the private landowner, a BLM natural resource specialist, a range specialist, and a wildlife biologist. A second onsite inspection was conducted on 05/01/12 with representatives from SWEPI LP, their wildlife consultant, a Colorado Park and Wildlife representative and the BLM NRS when SWEPI LP became the unit operator and acquired the unapproved APDs.

CHAPTER 2 - PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

The purpose of this chapter is to provide information on the Proposed Action and Alternatives.

2.2 ALTERNATIVES ANALYZED IN DETAIL

2.2.1 Proposed Action

The Proposed Action would be to approve 2 APDs submitted by SWEPI LP. The operator proposes to drill Dry Sage Unit Well #1-21 at SWNE, Sec. 21, T. 12 N., R. 90 W., 6th PM, Moffat County from federal surface into federal minerals and the Dry Sage Unit Well #1-23 at Lot 17, Sec. 23, T. 12 N., R. 90 W., 6th PM, Moffat County from privately owned surface into federal minerals. The proposed wells would be located south from the town of Dixon, WY and south of Moffat County Road 2. APDs have been filed with the LSFO for the oil wells and include drilling and surface use plans that cover mitigation of impacts to vegetation, soil, surface water, and other resources. Mitigation not incorporated by SWEPI LP in the drilling and surface use plan would be attached by the BLM as Conditions of Approval (COAs) to an approved APD and can be found as Attachment 2.

Construction work would start during the fall of 2012 and the estimated duration of construction would be 3 to 5 weeks, drilling and completion activities would be 30-40 days per well, and 30 days for facilities installation for all the wells on the pad. The operator proposes to use 1.1 miles of existing road across CO State Land and BLM and to construct 1,630 feet of new access road on BLM surface to access the Dry Sage Unit Well #1-21. Road construction would result in 1.9 acres of new disturbance on BLM surface. Dry Sage Unit Well #1-23 would result in the construction of 9,120 feet of upgraded road and new access road. Road construction would result in 10.5 acres of disturbance on private surface. All road construction would be in the Dry Sage Federal Unit, private or state surface, so no federal right-of-way would be required for access. All of the access roads would be upgraded or constructed to have a maximum width of disturbance of 30 feet resulting in an 18-foot running surface and would be constructed in accordance with guidelines established in *The Gold Book: Surface Operating Standards for Oil and Gas Exploration and Development*. Road construction would result in 12.4 acres of disturbance.

The location would be cleared of all vegetation and leveled for drilling. Topsoil and native vegetation would be stockpiled for use in reclamation. Approximately 5.5 acres would be disturbed for construction of each well pad. This would include the 500 foot by 400 foot well pad, the topsoil, and subsoil piles. A closed loop system would be utilized and no reserve pit would be authorized. All drilling muds and cuttings would be contained in steel mud pits and hauled to an approved disposal facility. If any of the wells are producers, cut portions of the pad site would be backfilled and unused portions would be stabilized and re-vegetated.

Approximately 4.5 acres of disturbance would be reclaimed during interim reclamation, leaving approximately 1.0 acre of production surface. If the all of the gas wells prove unproductive, they would be properly plugged and the entire pad site and access road would be reclaimed.

The total initial surface disturbance for the proposed action would be 23.4 acres and would be reduced to 14.4 acres upon completion of interim reclamation of the well pad and pipeline.

2.2.2 No Action Alternative

The No Action alternative would be to reject the APD and, therefore, the well would not be drilled, and the pad, access road, and facilities would not be constructed.

CHAPTER 3 – AFFECTED ENVIRONMENT AND EFFECTS

3.1 INTRODUCTION

Affected Resources:

The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an EA. Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 1 lists the resources considered and the determination as to whether they require additional analysis.

Table 1. Resources and Determination of Need for Further Analysis

Determination ¹	Resource	Rationale for Determination
Physical Resources		
PI	Air Quality	See Chapter 3
NP	Floodplains	There are no FEMA-identified 100-year floodplains present in or adjacent to the proposed project area.
PI	Hydrology, Ground	See Chapter 3

Determination¹	Resource	Rationale for Determination
PI	Hydrology, Surface	See Chapter 3
PI	Minerals, Fluid	See Chapter 3
NI	Minerals, Solid	There would be no impacts to the solid minerals
PI	Soils	See Chapter 3
PI	Water Quality, Ground	See Chapter 3
PI	Water Quality, Surface	See Chapter 3
Biological Resources		
PI	Invasive, Non-native Species	See Chapter 3
PI	Migratory Birds	See Chapter 3
PI	Special Status Animal Species	See Chapter 3
NP	Special Status Plant Species	There are no federally listed threatened or endangered or BLM sensitive plant species present within or in the vicinity of the proposed wells.
NP	Upland Vegetation	There would be no long term adverse impacts to native vegetation as long as noxious weed mitigation, and vegetation mitigation is followed.
NP	Wetlands and Riparian Zones	There are no known perennial streams, wetlands, seeps, or springs on federal lands within or immediately adjacent to the proposed project site.
NP	Wildlife, Aquatic	The proposed well locations and associated roads do not provide habitat for aquatic wildlife.
PI	Wildlife, Terrestrial	See Chapter 3
NP	Wild Horses	This area is not within a Herd Management Area (HMA).
Heritage Resources and the Human Environment		
PI	Cultural Resources	See Chapter 3
NP	Environmental Justice	According to the most recent Census Bureau statistics (2000), there are no minority or low income populations within the LSFO.
PI	Hazardous or Solid Wastes	See Chapter 3
PI	Native American Religious Concerns	See Chapter 3
PI	Paleontological Resources	See Chapter 3

Determination¹	Resource	Rationale for Determination
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NI	Visual Resources	Proposed project areas are located in Recreation Management Zone 2, which is designated as VRM Class III where moderate change to the characteristic landscape would be allowed as long as the existing characteristics of the landscape are partially retained.
Resource Uses		
PI	Access and Transportation	See Chapter 3
NI	Fire Management	There would not be any changes to the fire management in the area if the project were to be approved.
NP	Forest Management	No forest resources exist within or near the project area.
NP	Livestock Operations	No adverse effect as long as operators work in coordination with livestock operators to address potential conflicts.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands or Farmlands of Statewide Importance present in or adjacent to the proposed project area
NP	Realty Authorizations, Land Tenure	There are no Realty Authorizations within the proposed project area.
PI	Recreation	See Chapter 3
Special Designations		
NP	Areas of Critical Environmental Concern	There are no ACECs within the proposed project area.
NP	Lands with Wilderness Characteristics	Subject to WO-IM 2011-154 and in accordance with BLM policy, the Serviceberry SRMA was evaluated for suitability as lands with wilderness characteristics and did not meet the roadless criteria for an area greater than 5,000 acres.
NP	Wilderness Study Areas	There are no WSAs within the proposed project area.
NP	Wild and Scenic Rivers	There are no WSRs within the proposed project area.

¹ NP = Not present in the area impacted by the Proposed Action or Alternatives. NI = Present, but not affected to a degree that detailed analysis is required. PI = Present with potential for impact analyzed in detail in the EA.

3.2 PHYSICAL RESOURCES

3.2.1 Air Quality and Climate

Affected Environment: Far-field ambient air quality and AQRV impact assessments were performed to quantify the hypothetical maximum pollutant impacts at Class I areas and a sensitive Class II area within the study area resulting from construction, drilling, and production emissions for the Little Snake RMP. The Class I and sensitive Class II receptor areas analyzed in the far-field modeling included—

- Mount Zirkel Wilderness Area (Class I)
- Eagles Nest Wilderness Area (Class I)
- Flat Tops Wilderness Area (Class I)
- Dinosaur National Monument (federal Class II, Colorado area designated with the same SO₂ increment as federal Class I).

In summary, the modeling results indicate that impacts resulting from the implementation of the LSFO RMP-ROD would not exceed Colorado or National Ambient Air Quality Standards (CAAQS and NAAQS) or PSD (Prevention of Significant Deterioration) increments within the PSD Class I and sensitive PSD Class II areas analyzed. The PSD increment analyses are for informational purposes only and do not constitute a regulatory PSD increment consumption analysis.

Environmental Consequences, Proposed Action: This Proposed Action falls well within the range of the Reasonable Foreseeable Development (RFD) of 3,031 wells analyzed in the LSFO RMP. Short term, local impacts to air quality from dust would result during and after well pad construction. Drilling operations produce air emissions such as exhaust from diesel engines that power drilling equipment. Air pollutants could include nitrogen oxides, particulates, ozone, volatile organic compounds, fugitive natural gas, and carbon monoxide. Gas flaring reduces the health and safety risks in the vicinity of the well by burning combustible and poisonous gases like methane and hydrogen sulfide.

At a regional scale, atmospheric dust, caused by destabilization of soil as a result of land use changes coupled with drought conditions, is receiving increased attention for its ability to alter alpine environments. Dust covered snow melts faster because it can absorb more solar energy, which affects snowpack conditions and can result in earlier and faster spring runoff events. The Colorado Plateau has been identified as a primary dust source for several recent alpine dust events on the Western Slope of Colorado. Areas of low annual precipitation, little to no vegetation cover, and an available supply of sediment are of primary concern for mitigation of expanding or new sources of dust.

Environmental Consequences, No Action Alternative: Under the No Action alternative, because no new disturbance, drilling rigs, or truck traffic is anticipated, no impacts to air quality would occur.

Environmental Consequences, Cumulative Impacts: There are a limited number of air pollutant emission sources located within the LSFO; there are a few cities and towns, very limited oil and gas extraction activities, a few coal mines, and two coal-fired power plants. In the past, the Hayden and Craig Power Plants have historically been shown to have a significant impact on visibility at the Mount Zirkel Class I area (Watson et al. 1996). As a result of that study, and a subsequent legal consent decree, the Hayden and Craig Power Plants have installed pollution controls resulting in emission reductions of approximately 14,000 tons/year SO₂ and 7,000 tons/year NO_x for each plant. The analysis in the LSFO RMP projected a maximum increase of 15 and 11 tons/year SO₂ to the region, respectively (approximately 0.2 percent of the total power

plants' SO₂ reductions). It also projected an increase NO_x emissions in the study area by 1,066 tons/year (approximately 8 percent of total power plants' SO₂ reductions). Thus, as total SO₂ and NO_x emissions in the LSFO are lowered in the future, cumulative air quality and AQRV impacts are likely to be reduced from historic levels.

Mitigation:

- Retaining as much vegetative cover as possible during the project and/or reclaiming and covering disturbed areas shortly following excavation should help keep localized dust down during dry periods.
- Reduce source emissions from drilling operations by minimizing the number of well pads using improved drilling technologies, such as horizontal drilling or other similar approaches that may become available during the expected oil and gas development and operation duration. This would result in decreased emissions of Particulate Matter (PM) during the construction of well pads and associated.
- Drill rig engines will meet EPA tiered emission standards requirements reflective of the year they begin operation in the LSFO.

Reference: Additional Air Quality Impact Assessment to Support the LSFO Draft RMP and EIS, Moffat, Routt, and Rio Blanco Counties, CO

3.2.2 Minerals/Fluid

Affected Environment: The proposed well would be in favorability zone 4 (highest for oil and gas potential). This well would penetrate the Trout Creek, Niobrara, and Frontier Formations.

Environmental Consequences, Proposed Action: The casing and cementing program would be adequate to protect all of the resources identified above. All coal seams and fresh water zones would also be protected. The blow out preventer (BOP) system would be adequately sized. All of these zones would be cased off.

Environmental Consequences, No Action Alternative: Under the No Action alternative, there would be no development of fluid minerals and no effects on existing fluid mineral reservoirs.

Environmental Consequences, Cumulative Impacts: This Moffat County area has been the location of energy development for over 50 years. There has been no communication or contamination as a result of the energy development. Operators have been diligent in the design and placement of surface casing and cement. It is unlikely that ground water quality would be impacted in the area.

Mitigation: None.

3.2.3 Soils

Affected Environment: The proposed Dry Sage Unit Well #1-23 pad and road is on private surface; Dry Sage Unit Well #1-21 is on public surface. The proposed Dry Sage Unit Well #1-21 well pad and access road would be located within the Forelle-Evanot complex (MU80; 12 to 25% slopes), Torriorthents-Torripsamments complex, (MU199; 12 to 40% slopes), and Yamo loam (MU216; 3 to 15% slopes) soils. Fragile soils are not likely to occur in the proposed project area, however some soil types have one or two properties that are characteristic of fragile soils. Table 1 is a summary of soil properties relevant to the construction of infrastructure proposed as part of this APD.

Table 2. Summary Analysis of Soil Properties for Dry Sage Unit Well #1-21 proposed well and access road locations.

Soil Property	Rating
Deep Mechanical Site Preparation (when depth = 0-36")	Ranges from well-suited (road) to unsuited (pad site)
Erosion Hazard (road, trail)	Severe
Construction Limitations for Haul Roads	Moderate to severe
Soil Rutting Hazard	Severe (low soil strength)
Percent Clay	23-39% (moderate to high)
Plasticity Index (when depth = 0-120")	8.2%-12.8% (low)
Hydrologic Soil Group	B & D (moderate to high runoff potential)
Representative Slope	9-26%
Wind Erodibility Group	4-6 (moderate)

Data taken from USDA NRCS Web Soil Survey: <http://websoilsurvey.nrcs.usda.gov>

Environmental Consequences, Proposed Action: The Proposed Action would result in approximately 20.5 acres of initial surface disturbance for pad, road, and pipeline construction. Following interim reclamation, the long term disturbance would be approximately 15.9 acres of access roads and pad area that are required to be in service for the life of the wells. Construction activities would cause mixing of soil horizons, slight to moderate increases in local soil loss, loss of soil productivity, and sediment available for transport to surface waters. Noxious weed infestation resulting from disturbance would impact soil productivity. Potential for such soil loss and transport would increase as a function of slope, feature (pad, road, or pipeline route) to be constructed, and proximity to streams. Soil loss from construction would be greatest shortly after project start and would decrease in time as a result of the proposed stabilization through reclamation of disturbed areas.

Throughout the project area, the potential would also exist for accidental spills or leaks of petroleum products and hazardous materials during construction, drilling activities and long term operations for the life of the wells. These events would cause soil contamination and may decrease the soil fertility and revegetation potential.

According to the above analysis there are several concerns regarding soil stability for construction and maintenance during the operational life of the road and pad. Construction of these facilities based solely in accordance with guidelines established in *The Gold Book* may not be adequate in the prevention of erosion, slumping, and structural failure. In areas susceptible to erosion or slope instability issues, construction techniques (retaining structures, full bench cut, no side-casting, etc.), proper erosion control, and geotechnical analysis and design may be required. Engineered design for construction oversight in areas of slope instability and severe erosion would be required.

Soil strength is rated as low across all soil types present, which results in severe soil rutting during heavy equipment use, particularly during wet conditions. Most heavy equipment would be used on existing roads or to create new roads or pads. No off-road/pad disturbance of soils with heavy equipment is planned. A rating of “moderate” to “severe” for construction limitations for haul roads indicates that there are one or more physical limitations of soils present that can make construction very difficult or very costly. Significant erosion is expected in these soils, requiring frequent maintenance of roads and as well as (potentially) costly erosion-control measures. Preparation of the site for proposed facilities ranges from “well suited” to “unsuited”. The project proponent should be prepared for special design features, extra maintenance, and the costly alteration of soil conditions in order to overcome unfavorable/undesirable soil conditions. Finally, clay content of soils present can be high (called expansive soils) that are capable of large volume changes with changes in precipitation regimes. This shrink-swell action can lead to subsidence, cracking, sliding, and infrastructure failure.

Additionally, although single well pads are smaller in size than multi-well sites, single well pads overall result in greater soil disturbance since many more pads and access roads are required. Consequently, vehicle trips for well pad services are also greater since wells are spread out, increasing the potential for dust creation, erosion, and soil compaction.

Undisturbed, these soils typically will remain relatively stable, experiencing slow movement over time. Once disturbed, erosion, heavy precipitation, and cut and fill slopes can activate or accelerate failures. It is highly recommended that the project proponent construct the proposed facilities using a site-specific design to address the geotechnical hazards these soils present.

Environmental Consequences, No Action Alternative: Under this alternative, the Federal APDs would not be approved, and new/upgraded roads servicing the proposed pads would not be constructed. Therefore, any negative impacts related to construction, drilling, or completions would be eliminated.

Environmental Consequences, Cumulative Impacts: Although adverse impacts (both direct and indirect) to soil resources as a result of the Proposed Action are not considered to be significant, cumulative impacts do include increased potential for runoff, erosion, and sedimentation, expansion of noxious weeds and other invasive species, increased fugitive dust from construction of oil and gas pads, roads, and pipelines and associated truck travel, and increased potential for spills and other releases of chemical pollutants.

Mitigation: None.

3.2.4 Water Quality/Ground

Affected Environment: The geologic formations at or near the surface consist of both Tertiary age, Browns Park and Cretaceous age, Fort Union. These formations can and do contain potable, useable water.

Environmental Consequences, Proposed Action: There is the potential that during drilling and setting of surface casing the operation will encounter useable groundwater. Fresh to moderately saline groundwater (TDS concentration < 10,000 PPM) is likely to be found within these formations.

Environmental Consequences, No Action Alternative: Under the No Action alternative, because no drilling or construction activities would be permitted there would be no effects.

Environmental Consequences, Cumulative Impacts: This Moffat County area has been the location of energy development for over 50 years. There has been no record of ground water contamination as a result of the energy development. Operators have been diligent in the design and placement of surface casing and cement. It is unlikely that ground water quality would be impacted in the area.

Mitigation: The APDs contains a geologic downhole report that requires that the operator isolate and protect all fresh to moderately saline water (TDS < 10,000 PPM) that is encountered during drilling from communication with other fluids. The operator is required to submit a report showing the depth and analysis of all groundwater encountered during drilling.

3.2.5 Water Quality/Surface

Affected Environment: Any surface runoff from the Dry Sage Unit Well # 1-23 proposed well sites or access road (located on private surface) would drain into Pull Creek, a perennial tributary of the Little Snake River. Any surface runoff from the Dry Sage Unit Wells #1-21 proposed well site or access roads (located on federal surface) would drain into unnamed tributaries of Willow Creek, a perennial tributary of the Little Snake River. Water quality for all tributaries to the Little Snake River (from its first crossing of the CO/WY border to a point below its confluence with Fourmile Creek) must support Aquatic Life Cold 1, Recreation P, and Agricultural uses. There are no known water quality impairments or suspected water quality issues for waters influenced by the project area considered in the proposed action.

Environmental Consequences, Proposed Action: Surface waters adjacent to or influenced by the proposed project areas are currently supporting classified uses. The Proposed Action would result in approximately 20.5 acres of initial surface disturbance for pad, road, and pipeline construction. Following interim reclamation, the long term disturbance would be approximately 15.9 acres of access roads and pad area that are required to be in service for the life of the wells.

Potential impacts to surface water associated with the Proposed Action occur from surface-disturbing activities, traffic, waste management, and the use, storage and transportation of fluids (i.e., chemicals, condensate, and produced water). Surface-disturbing activities associated with well and facility pads, roads, and pipelines cause loss of vegetation cover, soil compaction and displacement, increased volume and velocity of runoff, and increased sedimentation in surface waters. Initially, impacts can be minimized by stormwater management, stockpiling topsoil, controlling erosion, and rehabilitation of disturbed surfaces quickly. Long term soil protection could be achieved by continued road and pad maintenance to reduce erosion, remediation of contaminated soils and minimizing the size of the long-term pad footprint through interim reclamation measures. These measures would include limiting cut slope steepness, stepcutting, crowning road surfaces, installing culverts and drainage systems, and applying gravel to all upgraded BLM roads in the project area to a compacted thickness of 6 inches.

Oil and gas waste management practices have the potential to contaminate soils and surface water. Contamination of soils could cause long-term reduction in site productivity resulting in increased erosion and potential sediment and contaminant delivery to nearby waterways during runoff. Use, storage, and transportation of fluids such as produced water, hydraulic fracturing fluids, and condensate have the possibility of spills that could migrate to surface or groundwater. Tanks used to store produced water and condensate would be placed in secondary containment to prevent offsite release. Other elements of the Proposed Action are designed to mitigate risks to surface waters associated with the release of drilling fluids, produced water, and condensate. A closed-loop drilling system would be implemented. In this process, drilling fluids are recycled, and cuttings are dried through the use of a shaker system, remediated, and stacked against the cutslope on the pad or hauled offsite. A traditional reserve pit would not be constructed. Cuttings management areas must be decontaminated to COGCC standards prior to pit closure. Implementation of the standard COAs for mitigating impacts to surface waters would minimize risks of adverse impacts associated with construction and ongoing production activities.

Environmental Consequences, No Action Alternative: Under this alternative, the Federal APDs would not be approved, and new/upgraded roads servicing the proposed pads would not be constructed. Therefore, any negative impacts to surface water quality as related to construction, drilling, or completions would be eliminated.

Reference: Colorado Department of Public Health and Environment Water Quality Control Commission. 2012. Regulations #33, 37, and 93. <http://www.cdphe.state.co.us/regulations/wqccregs/index.html>

Environmental Consequences, Cumulative Impacts: Although adverse impacts (both direct and indirect) to water quality as a result of the Proposed Action are not considered to be significant, cumulative impacts do include increased potential for runoff, erosion, and sedimentation, and increased potential for spills and other releases of chemical pollutants.

Mitigation: None.

3.3 BIOLOGICAL RESOURCES

3.3.1 Invasive/Non-Native Species

Affected Environment: Invasive and noxious weeds are present in the vicinity of the project area. Invasive annuals such as cheatgrass, halogeton and yellow allysum commonly occur. Additional invasive species of concern in the vicinity include white top, Canada thistle, knapweeds, perennial pepperweed and other biennial thistles. These species are on the Colorado list B of noxious weeds. Cheatgrass is on the Colorado List C of noxious weeds. Additional noxious weeds may also be present in the area. The BLM cooperates with the Moffat County Pest Management program to employ the principals of Integrated Pest Management to control noxious weeds on public lands.

Environmental Consequences, Proposed Action: The surface disturbing activities and associated traffic involved with construction of these well sites, access roads and support infrastructure and subsequent activities would create an environment and provide a mode of transport for invasive species and other noxious weeds to become established. Construction equipment and any other vehicles brought onto the sites can introduce weed species. Wind, water, recreation vehicles, livestock and wildlife would also assist with the distribution of weed seed into the newly disturbed areas. The annual invasive weed species (downy brome, yellow alyssum, blue mustard and other annual weeds) occur on adjacent areas and would occupy the disturbed areas. The bare soils and the lack of competition from a perennial plant community would allow these weed species to grow and could affect the establishment of seeded plant species. Establishment of perennial grasses and other seeded plants is expected to provide the necessary control of invasive annual weeds within 2 or 3 years. Additional seeding treatments of the disturbed areas may be required in subsequent years if initial seeding efforts are not successful.

The perennial and biennial noxious weeds in the area are less frequently established on the uplands but some potential exists for their establishment in draws and swales or areas that would collect additional water. The largest concern in the project area would be for these species to become established and not be detected, providing seed which can be moved onto adjacent rangelands. The operator would be required to control any invasive and/or noxious weeds that become established within the disturbed areas involved with drilling and operating the well. Prior to applying herbicides on BLM the operator must obtain an approved Pesticide Use Proposal (PUP).

Conditions of Approval would be attached requiring the operator to minimize disturbance and obtain successful reclamation of the disturbed areas, as well as weed control utilizing integrated practices, including herbicide applications. All principles of Integrated Pest Management should be employed to control noxious and invasive weeds on public lands.

Environmental Consequences, No Action Alternative: No new opportunities for invasive species establishment would occur under this alternative.

Cumulative Effects: The proposed project would increase the risk for establishment and spread of noxious and invasive species, increasing the occurrence of weeds within the landscape. If noxious weeds establish in these plant communities the health of upland plant communities and associated ecological function would decline. Requirements to control and limit the spread of noxious weeds as included in the Conditions of Approval can decrease the potential for infestation. Under the No Action Alternative there would be no additional contribution to previous, existing or future weed infestations.

Mitigation: None.

3.3.2 Migratory Birds

Affected Environment: BLM Instruction Memorandum No. 2008-050 provides guidance towards meeting BLM's responsibilities under the Migratory Bird Treaty Act (MBTA) and Executive Order (EO) 13186. The guidance emphasizes management of habitat for species of conservation concern by avoiding or minimizing negative impacts and restoring and enhancing habitat quality. The LSFO provides both foraging and nesting habitat for a variety of migratory bird species. Several species on the USFWS's Birds of Conservation Concern (BCC) List occupy these habitats within the LSFO.

Native plant communities in the area are comprised primarily of sagebrush stands with an understory of grasses and forbs. A variety of migratory birds may utilize this vegetation community within the project area during the nesting period (May through July) or during spring and fall migrations. The project area contains potential nesting and/or foraging habitat for the following USFWS 2008 Birds of Conservation Concern: golden eagle, Brewer's sparrow, sage sparrow, sage thrasher and loggerhead shrike. The closest golden eagle nest is 1.5 miles away from the proposed well sites. This species likely hunts for prey in the general area. When the proposed well and road locations were visited in 2011, sagebrush habitat was in good condition and was providing suitable habitat for several migratory bird species.

Environmental Consequences, Proposed Action: The Proposed Action would result in the direct removal of ~24 acres of migratory bird habitat. Following natural succession regimes, sagebrush communities would take 20-30 years to return to preconstruction conditions following reclamation. Removal of sagebrush would be minimal on a landscape level, but this disturbance would decrease patch size and may degrade habitat for migratory birds on a small scale. Indirectly, habitat effectiveness adjacent to well pads would be reduced as a result of noise and human activity during construction, drilling and completion activities. If the wells are successful, some of these impacts would continue during routine maintenance and operations of the wells. Ingelfinger and Anderson (2004) documented 40-60% declines in Brewer's sparrow abundance within 100 meters of well access roads in Wyoming, and it is likely that this effect is similar within the LSFO. Indirect habitat loss attributable to this behavioral response adds substantially to the effects of habitat loss due to long term facility occupation and sagebrush modification. Golden eagles would likely avoid the well sites during the drilling and completion phase, but

may begin to hunt in the general area after well completion. Since the closest golden eagle nest is 1.5 miles away, impacts to nesting and breeding activities are not expected.

If drilling activities occur during the nesting season, there could be negative impacts to migratory bird species through nest destruction or increased stress leading to nest abandonment. Timing limitations to protect greater sage-grouse and Columbian sharp-tailed grouse (see T&E Section) would cover most of the migratory bird nesting season, so the risk for these impacts would be low. Currently there are no other operating wells in the vicinity of the proposed well sites. Although the proposed action would have some impacts to migratory bird species, these impacts would be much localized and would not be expected to negatively affect migratory birds on a landscape level.

Environmental Consequences, No Action Alternative: There would be no impacts to migratory birds or their habitat from the No Action Alternative.

Environmental Consequences, Cumulative Effects: The Proposed Action is not anticipated to add substantially to existing or proposed disturbances. Currently, there are no other wells within a 3 mile radius of either of the proposed sites. The removal of ~24 acres of sagebrush would not have a measureable influence on local bird populations as there is considerable suitable habitat adjacent to the project area. Prompt and effective reclamation would promote a healthier, diverse plant community which would benefit local wildlife populations as a whole.

Mitigation: None.

3.3.3 Special Status Animals

Affected Environment: There are no ESA listed or proposed species that inhabit or derive important benefit from the project area. Critical habitat for the razorback sucker, Colorado pikeminnow, bonytail and humpback chub is located downstream of the project area. Any impact to Colorado River Fish from the Proposed Action would be in the form of water depletion.

Several BLM-sensitive animal species are known to inhabit or may be indirectly influenced by the Proposed Action, including greater sage-grouse, Columbian sharp-tailed grouse, bald eagle and Brewer's sparrow.

Greater sage-grouse

Sage-grouse are considered a sagebrush ecosystem obligate species. Sagebrush provides nesting, brooding, and fall and winter cover, as well as forage throughout the year. Each year, male sage-grouse congregate in late winter through spring on leks to display their breeding plumage and to attract hens for mating. Typically, leks are positioned within proximity of nesting and brood-rearing habitat; therefore, they are often considered an excellent reference point for monitoring and habitat protection measures.

Nesting habitat is primarily characterized by sagebrush communities that have 15 percent to 30 percent canopy cover, and a grass and forb understory. Residual cover of grasses is also important for nesting cover. Most nesting occurs within 4 miles of leks (Colorado Greater Sage-grouse Steering Committee 2008).

In March of 2010, the USFWS concluded that greater sage-grouse warranted protection under the ESA; however, the USFWS determined that proposing the species for protection is precluded by the need to take action on other species facing more immediate and severe extinction threats. As a result, greater sage-grouse are considered a candidate species for ESA protection. Habitat loss and fragmentation resulting from wildfire, energy development, urbanization, agricultural conversion, conversion of sagebrush to other vegetation types (such as pinyon-juniper woodlands) and infrastructure development are the primary threats to the species (USFWS 2010).

Greater sage-grouse utilize sagebrush ecosystems in the area for breeding, nesting and brood-rearing. The entire project area, including both well sites and access roads, is mapped as Preliminary Priority Habitat (PPH). There are two active leks and three inactive leks located within a four mile radius of the proposed well sites. The 1-23 well site is located 1.8 miles from an active lek and the 1-21 well site is just over a mile from an active lek. When the well sites were visited in 2011, the vegetative communities were found to be in good condition, providing suitable nesting and winter habitat for greater sage-grouse.

Columbian sharp-tailed grouse

Columbian sharp-tailed grouse habitat is comprised of mountain shrub-grassland communities and associated edges. Like greater sage-grouse, sharp-tailed grouse breed on leks in the spring and construct ground nests near or under shrubs. Sagebrush stands and mixed mountain shrublands in the Proposed Action area provide habitat for Columbian sharp-tailed grouse. Much of the area is classified as nesting and winter habitat by the CPW. There is one active lek and one inactive lek located within a 2 mile radius of the #1-21 and #1-23 well sites.

Bald eagle

The general area is mapped as winter habitat for bald eagles by CPW. There are no nests or roosting sites in the vicinity of the proposed well sites. Bald eagles use upland habitats as scavenging areas primarily for winter or vehicle killed mule deer and elk.

Brewer's sparrow

Brewer's sparrows are a summer resident in Colorado and nest in sagebrush stands. Nests are constructed in sagebrush and other shrubs in denser patches of shrubs. This species would likely be nesting in the project area from mid-May through mid-July.

Environmental Consequences, Proposed Action:

Colorado River fish

In May 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addresses water depleting activities associated with BLM's fluid minerals program in the Colorado River Basin in Colorado. In response to BLM's PBA, the FWS issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0006) on December 19, 2008, which determined that BLM water depletions from the Colorado River Basin are not likely to jeopardize the continued existence of the Colorado pike minnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated in January 1988. The Recovery Program serves as the reasonable and prudent alternative to avoid jeopardy and provide recovery to the endangered fishes by depletions from the Colorado River Basin. The PBO addresses water depletions associated with fluid minerals development on BLM lands, including water used for well drilling, hydrostatic testing of pipelines, and dust abatement on roads. The PBO includes reasonable and prudent alternatives developed by the FWS which allow BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. As a reasonable and prudent alternative in the PBO, FWS authorized BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by fluid minerals activities on BLM lands.

The two proposed wells will be entered into the Little Snake Field Office fluid minerals water depletion log and will be submitted to the Colorado State Office at the end of the Fiscal Year.

Greater sage-grouse

Impacts to greater sage-grouse from oil and gas development are discussed in the LSFO RMP EIS. Impacts include, but are not limited to, displacement into less suitable habitat, nest abandonment, destruction of nests and loss of habitat. Other impacts, such as habitat fragmentation and the spread of weedy plants can also degrade habitat. Noise and increased human activity related to drilling can disrupt breeding and nesting activities. Recent research on sage-grouse suggest that reduced lek attendance, avoidance and displacement from areas of energy development, lower survival of nesting hens and reduced nest success can occur even under moderate levels of fluid minerals development (Holloran 2005, Doherty et al. 2008, Walker et al. 2007). These impacts do not only occur during the drilling phase, but continue during normal operations and maintenance of sites. Sage grouse may avoid otherwise suitable habitat as density of roads, powerlines or energy development increases (Lyon and Anderson 2003; Holloran 2005; Kaiser 2006; Doherty et al. 2008).

The Proposed Action would result in the direct removal of ~24 acres of greater sage-grouse habitat. Removal of sagebrush would be minimal on a landscape level, but this disturbance would decrease patch size and increase habitat fragmentation in the area. Indirectly, habitat effectiveness adjacent to well pads would be reduced as a result of noise and human activity during project construction. Construction, drilling and completion would not be permitted from

December 1 to June 30. This timing limitation would protect sage-grouse that utilize the area for wintering, breeding and nesting from noise and traffic impacts during the drilling phase. Grouse that are using habitat near the well sites during the late summer and fall would likely be displaced from drilling activities.

If the wells are successful, impacts would continue during routine maintenance and operations of the wells. Sage-grouse would likely avoid habitat in the vicinity of the producing well, due to human presence and infrastructure located at the well site. Indirect habitat loss attributable to this behavioral response adds substantially to the effects of habitat loss due to long term facility occupation. In addition, noise and an increase in traffic on access roads would disturb and likely displace grouse. To minimize impacts to the two leks near the wells, post development well site visits should not occur from 4pm to 9am during the breeding season (March 1 – May 15). In addition, mufflers would be required on any equipment that produces sound/noise. These two mitigation measures would reduce noise and disturbances to leks during the breeding season. Although this will not completely prevent impacts to the leks, it may potentially prevent some reduction in lek attendance due to operation activities. There are no other oil and gas developments in the vicinity of the two well sites, so current spacing is well below 1 pad per acre.

Columbian sharp-tailed grouse

Impacts to Columbian sharp-tailed grouse would be similar to impacts described in the greater sage-grouse section above.

Bald eagle

It is unlikely that the proposed action would be conducted during the winter months due to a big game crucial winter habitat timing limitation. Construction and drilling would have no impacts to bald eagles if conducted between April 30 and December 1. If the wells are successful, there may be increased carrion available to bald eagles because of an increase in traffic and possible big game/vehicle mortalities. An increase in carrion near highways may pose a risk to bald eagles because they may be struck and killed by vehicles.

Brewer's sparrow

Impacts to Brewer's sparrows are described in the Migratory Bird section of this EA.

Environmental Consequences, No Action Alternative: There would be no impacts to special status animal species from the No Action Alternative.

Environmental Consequences, Cumulative Impacts: Currently, there are no other wells within a 3 mile radius of either of the proposed sites. Limited fragmentation of habitat exists in the general area in the form of roads, agriculture and private residences. Although the disturbances created by the two wells would not be substantial on a landscape level, the Proposed Action would have impacts to special status species. These impacts would be cumulative to other disturbances in the area to sensitive species, such as sage-grouse.

Mitigation: To mitigate impacts to greater sage-grouse and Columbian sharp-tailed grouse during the lekking and nesting season, no construction, drilling or completion activities will occur between March 1 and June 30.

Conduct post-development well site visits between the hours of 9:00 a.m. and 4:00 p.m. to prevent disturbances during the lekking season (March 1 to May 15).

Install raptor perch deterrents on equipment, fences, cross arms and pole tops.

To prevent long term impacts associated with noise, sound producing equipment (such as compressors or pump jacks) must be equipped with a hospital grade muffler or similar device which limits sound emissions to 49 decibels or less measured 30 feet from the source. Mufflers will be pointed upward to dissipate potential vibration.

3.3.4 Wildlife (Terrestrial)

Affected Environment: Native plant communities at the two proposed well sites are comprised primarily of sagebrush stands with an understory of grasses and forbs. This plant community provides habitat for a variety of big game, small mammals, birds and reptiles. The proposed project area provides year round habitat for mule deer, elk and pronghorn antelope. The well sites are located in important mule deer critical winter habitat and within an elk winter concentration area.

Environmental Consequences, Proposed Action: Impacts to wildlife species from oil and gas development are discussed in the LSFO RMP EIS. Impacts include, but are not limited to, displacement into less suitable habitat, increased stress and loss of habitat. These impacts are more significant during critical seasons, such as winter or reproduction. Big game species are often restricted to smaller areas during the winter months and may expend high amounts of energy to move through snow, locate food and maintain body temperature. Disturbances during the winter can displace big game, depleting much needed energy reserves and may lead to decreased over winter survival. Mule deer, pronghorn and elk using winter range are likely to be disturbed by noise and human activity associated with well pad construction and drilling. These activities should not be permitted from December 1 to April 30 to prevent significant impacts to big game species during the winter months. If the wells are successful, long term occupancy of the well sites, coupled by an increase in human activity and traffic may continue to disturb big game species. An increase in traffic may also result in increased mortality to big game due to vehicle collisions. Since there are no other oil and gas developments in the area, the proposed action would meet disturbance recommendations from CPW to not exceed more than one pad per section.

Most small mammals, birds and reptiles using the project area would be capable of avoiding construction equipment and should not be directly harmed by these activities. Some burrowing animals may be killed by construction equipment. This should be considered a short-term negative impact that is not likely to harm populations of any species.

Environmental Consequences, No Action Alternative: There would be no impacts to terrestrial wildlife species or their habitat from the No Action Alternative.

Environmental Consequences, Cumulative Impacts: The Proposed Action is not anticipated to add substantially to existing or proposed disturbances. Currently, there are no other wells within a 3 mile radius of either of the proposed sites. The removal of ~24 acres of sagebrush would not have a measureable influence on local wildlife populations as there is considerable suitable habitat adjacent to the project area. Prompt and effective reclamation would promote a healthier, diverse plant community which would benefit local wildlife populations as a whole.

Mitigation: No surface disturbing activities between December 1 and April 30 in order to prevent disturbance of big game using critical winter range.

Conduct post-development well site visitations to between the hours of 9 a.m. and 4:00 p.m. and reduce well site visitations between December 1 and April 30.

3.4 HERITAGE RESOURCES AND HUMAN ENVIRONMENT

3.4.1 Cultural Resources

Affected Environment: The approval of the APDs, construction of the well pads, upgrading existing roads, constructing a new access roads, and installation of buried pipelines are considered undertakings under Section 106 of the National Historic Preservation Act (NHPA).

BLM has the legal responsibility to take into account the effects of its actions on cultural resources located on federal land. BLM Manual 8100 Series, the Colorado State Protocol (Protocol) and BLM Colorado Handbook of Guidelines and Procedures for Identification, Evaluation, and Mitigation of Cultural Resources provide guidance on how to accomplish Section 106 requirements with the appropriate cultural resource standards. Section 106 of NHPA requires federal agencies to: 1) inventory cultural resources to be affected by federal undertakings, 2) evaluate the importance of cultural resources by determining their eligibility to the National Register of Historic Places (National Register), and 3) consult with the federal and state preservation agencies regarding inventory results, National Register eligibility determinations, and proposed methods to avoid or mitigate impact to eligible sites (Historic Properties). Within the state of Colorado, BLM's NHPA obligations are carried out under a Programmatic Agreement between BLM, the Advisory Council on Historic Preservation, and the State Historic Preservation Officer (SHPO). If the undertaking is determined to have “no effect” or “no adverse effect” by the BLM Little Snake Field Office archaeologist then it may proceed under the terms of the Protocol. If the undertaking is determined to have “adverse effects” then consultation is initiated with the SHPO.

The prehistoric and historic cultural context for northwestern Colorado has been described in several recent regional contexts. Reed and Metcalf’s (1999) context for the Northern Colorado

River Basin is applicable for the prehistoric context and historical contexts include overviews compiled by Frederic J. Athearn (1982) and Michael B. Husband (1984). A historical archaeology context has also been prepared for the state of Colorado by Church and others (2007). In addition, significant cultural resources administered by the BLM-LSFO have been discussed in a Class 1 overview (McDonald and Metcalf 2006) and valuable contextual information is available in synthesis reports of archaeological investigations for a series of large pipelines in the area (Metcalf and Reed 2011; Rhode and others 2010; Reed and Metcalf 2009).

Environmental Consequences, Proposed Action: Cultural resources evaluated as eligible for the National Register can be directly or indirectly adversely impacted by surface disturbing activities and or the construction/modification of a building, structure, facility, or infrastructure. The proposed action also has the potential to detract from the integrity of any eligible cultural resources within the view-shed. Indirect adverse impacts to eligible cultural resources include but are not limited to collection of artifacts/cultural material, inadvertent trespass damaging integrity of cultural resources, and damage to the environmental setting.

The proposed undertakings have undergone several cultural resource studies:

Darlington, David

2011 *Class III Cultural Resource Inventory for the Yates Petroleum Corporation Dry Sage Unit 1-23 Well Pad and Access Road Moffat County, Colorado.* 11-WAS-394. BLM LSFO #12.163.2011. OAH# MF.LM.R933. Western Archaeological Services, Rock Springs, WY.

Werner, Heidi

2011 *Class III Cultural Resource Inventory Report for the Yates Petroleum Corporation Dry Sage Unit 1021 Well Pad and Access Road Moffat County, Colorado.* 11-WAS-395. OAH# MF.LN.NR1216. BLM LSFO# 12.164.11 Western Archaeological Services, Rock Springs, WY.

Werner, Heidi

2012a *Class III Cultural Resource Inventory Report for the Shell Western Exploration and Production Inc. LP Dry Sage Unit 1-21 Well Pad and Access Road Moffat County, Colorado.* BLM-LSFO #12.92.2012. OAH#MF.LM.R1002. Western Archaeological Services, Rock Springs, WY.

2012b *Class III Cultural Resource Inventory Report for the Shell Western Exploration and Production Inc. LP Dry Sage Unit 1-23 Well Pad and Access Road Moffat County, Colorado.* BLM-LSFO #12.93.2012. OAH#MF.LM.NR1249. Western Archaeological Services, Rock Springs, WY.

These studies identified an adverse effect to the Holmes Family Homestead at the Dry Sage Unit 1-21 well pad and access location. 5MF.527 has been recommended eligible for the National Register. Through consultation with SHPO it was determined that the proposed undertaking will detract from the homestead's integrity of setting and feeling as it is within the viewshed of 5MF.527. Consultations with SHPO resulted in mitigation described below. The proposed undertaking may proceed with the mitigation measures outlined below in place.

Environmental Consequences, No Action Alternative: While a No Action alternative alleviates potential damage from energy development, cultural resources are constantly being subjected to site formation processes or events after creation (Binford 1981, Schiffer 1987). These processes

can be both cultural and natural and take place in an instant or over thousands of years. Cultural processes include any activities directly or indirectly caused by humans. Natural processes include chemical, physical, and biological processes of the natural environment that impinge and or modify cultural materials. In addition, a cultural resource study would not be required which is detrimental to the documentation of cultural resources that may be in the area. There are cultural resources that might be obliterated by site formation processes before they are recorded.

Under the No Action alternative, the installation of a protective fence and interpretive sign at 5MF.527 would not occur. The homestead is actively being adversely impacted by livestock in the area. The installation of a fence and an interpretive sign would protect the site and provide an educational opportunity to the public.

Environmental Consequences, Cumulative Impacts: The cumulative impacts to cultural resources are broad and include impacts within the project area, adjacent to the project area, and within the viewshed of the project area. This area of the BLM-LSFO has not been subject to energy development in the past. Energy development has the potential to create vast amounts of surface disturbance from well pads, pipelined, facilities, and access roads. This infrastructure has the potential to detract from the integrity of cultural resources directly through physical disturbance or indirectly through the degradation of the historical environmental setting. An increased utilization of the area also increases the change of illegal collection of cultural material. Alternatively, the development of the area would result in the execution of cultural resource studies. The information and data gained from these potential studies are valuable to the overall knowledge of the area and have the potential to aid in the mitigation of unknown adverse effects.

Mitigation:

1. A protective fence and interpretative sign will be installed at the homestead by the project proponent. The manner in which this will be accomplished will be detailed in a Memorandum of Agreement. No ground disturbing activity will be authorized at the Dry Sage Unit 1-21 location prior to completion and agreement on the format and content of the MOA.
2. Any cultural and/or paleontological (fossil) resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and the authorized officer will make any decision as to proper mitigation measures after consulting with the holder.

3. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the authorized officer (AO) at (970) 826-5000. Within five working days, the AO will inform the operator as to:
 - Whether the materials appear eligible for the National Register of Historic Places;
 - The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again; and
 - Pursuant to 43 CFR 10.4(g) (Federal Register Notice, Monday, December 4, 1995, Vol. 60, No. 232) the holder of this authorization must notify the AO, by telephone at (970) 826-5000, and with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

4. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

References

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2007 *Colorado History: A Context for Historical Archaeology*. Colorado Council of Professional Archaeologists, Denver.

Husband, Michael B.

1984 *Plateau Country Historic Context*. Office of Archaeology and Historic Preservation, State Historic Preservation Office, Denver.

Metcalfe, Michael D and Aland D. Reed

2011 *Synthesis of Archaeological Data Compiled for The Piceance Basin Expansion, Rockies Express Pipeline, and Uinta Basin Lateral Projects Moffat and Rio Blanco Counties, Colorado and Sweetwater County, Wyoming*. Volume 2. Metcalf Archaeological Consultants, Eagle, CO.

McDonald Kae and Michael Metcalf

2006 Regional Class I Overview of Cultural Resources for the BLM Little Snake Field Office. Metcalf Archaeological Consultants, Inc. Eagle, Colorado.

Reed, Alan D. and Michael Metcalf

1999 *Colorado Prehistory: A Context for the Northern Colorado River Basin*. Colorado Council of Professional Archaeologists, Denver, Colorado.

2009 *Synthesis of Archaeological Data Compiled for The Piceance Basin Expansion, Rockies Express Pipeline, and Uinta Basin Lateral Projects Moffat and Rio Blanco Counties, Colorado and Sweetwater County, Wyoming*. Volume 1. Alpine Archaeological Consultants, Inc, Montrose, CO.

Rhode, David, Lisbeth A. Louderback, David Madsen, and Michael D. Metcalf

2010 *Synthesis of Archaeological Data Compiled for The Piceance Basin Expansion, Rockies Express Pipeline, and Uinta Basin Lateral Projects Moffat and Rio Blanco Counties, Colorado and Sweetwater County, Wyoming*. Volume 3. Metcalf Archaeological Consultants, Eagle, CO.

Schiffer, Michael B.

1987 *Formation Processes of the Archaeological Record*. Formation Processes of the Archaeological Record. Albuquerque: University of New Mexico Press.

3.4.2 Hazardous or Solid Wastes

Affected Environment: Air, water, soil, and biological resources may potentially be affected by an accidental release of hazardous materials during transportation to and from the project area, storage, and use in construction and operations. Sensitive areas for hazardous materials releases include areas adjacent to water bodies, above aquifers, and areas where humans or wildlife would be directly impacted.

The most pertinent of the federal laws dealing with hazardous materials are as follows:

- The Oil Pollution Act (Public Law 101-380, August 18, 1990) prohibits discharge of pollutants into waters of the US, which by definition would include any tributary, including any dry wash that eventually connects with the Colorado River.
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601–9673), provides for liability, risk assessment, compensation, emergency response, and cleanup (including the cleanup of inactive sites) for hazardous substances. The act requires federal agencies to report sites where hazardous wastes are or have been stored, treated, or disposed of, and requires responsible parties, including federal agencies, to clean up releases of hazardous substances.
- The Resource Conservation and Recovery Act (RCRA), as amended by the Federal Facility Compliance Act of 1992 (42 U.S.C. 6901–6992), authorizes the EPA to manage,

by regulation, hazardous wastes on active disposal operations. The act waives sovereign immunity for federal agencies with respect to all federal, state, and local solid and hazardous waste laws and regulations. Federal agencies are subject to civil and administrative penalties for violations and to cost assessments for the administration of the enforcement.

- The Emergency Planning and Community Right-To-Know Act of 1986 (42 U.S.C. 11001–11050) requires the private sector to inventory chemicals and chemical products, report those in excess of threshold planning quantities, inventory emergency response equipment, provide annual reports and support to local and state emergency response organizations, and maintain a liaison with the local and state emergency response organizations and the public.

Environmental Consequences, Proposed Action: The project would fall under environmental regulations that impact disposal practices and impose responsibility and liability for protection of human health and the environment from harmful waste management practices or discharges. The direct impact would be if a solid waste or hazardous material is discarded and contaminates land surface either by solid, semi-solid, liquid, or contained gaseous material. Hazardous, civil, and criminal penalties may be imposed if the waste is not managed in a safe manner, and according to EPA regulations.

Environmental Consequences, No Action Alternative: Under the No Action alternative, because no drilling or construction activities would be permitted there would be no effects.

Environmental Consequences, Cumulative Impacts: Historic and continued energy development in the area would not likely have an additive effect on the amount of solid or hazardous waste introduced in the environment if laws and regulations are followed and enforced.

Mitigation: These laws, regulations, standard lease stipulations, and contingency plans and emergency response resources are expected to adequately mitigate any potential hazardous or solid waste issues associated with the Proposed Action.

3.4.3 Native American Religious Concerns

Affected Environment: Four Native American tribes have cultural and historical ties to lands have administered by the BLM-LSFO. These tribes include the Eastern Shoshone Tribe, Ute Mountain Ute Tribe, Uinta and Ouray Agency Ute Indian Tribe, and the Southern Ute Indian Tribe.

American Indian religious concerns are legislatively considered under several acts and Executive Orders, namely the American Indian Religious Freedom Act, the Native American Graves Environmental Assessment Protection and Repatriation Act, and Executive Order 13007 (Indian Sacred Sites). In summary, these require, in concert with other provisions such as those found in the NHPA and Archaeological Resources Protection Act, that the federal government carefully and proactively take into consideration traditional and religious Native American culture and life

and ensure, to the degree possible, that access to sacred sites, the treatment of human remains, the possession of sacred items, the conduct of traditional religious practices, and the preservation of important cultural properties are considered and not unduly infringed upon. In some cases, these concerns are directly related to “historic properties” and “archaeological resources”. In some cases elements of the landscape without archaeological or other human material remains may be involved. Identification of these concerns is normally completed during the land use planning efforts, reference to existing studies, or via direct consultation.

Consultation for this type of proposed undertaking is consulted on annually with the tribes. Letters were sent to the tribes in the spring of 2012 describing general oil and gas development within the BLM-LSFO. No comments were received. The location of any specific APD, service pipelines, and access roads are generally not consulted with the tribes unless they rise to a level that warrants specific consultation.

Environmental Consequences, Proposed Action: Items, sites, or landscapes determined to be culturally significant to the tribes can be directly or indirectly adversely impacted by recreational activities. Direct impacts could include but are not limited to physical damage, removal of objects or items, and activities thought to be disrespectful (installation of port-a-potties near a sacred site). Indirect impacts include but are not limited to prevention of access (hindering the performance of traditional ceremonies and rituals), increased visitation of a previously little used area, and loss of integrity related to religious feelings and associations.

There are no known items, sites, or landscapes determined to be culturally significant to the tribes near the undertaking. The proposed action does not prevent access to any known sacred sites, prevent the possession of sacred objects, or interfere or otherwise hinder the performance of traditional ceremonies and rituals.

Environmental Consequences, No Action Alternative: None.

Environmental Consequences, Cumulative Impacts: Continued energy development in the area has an additive effect of changing the landscape from that ancestrally known by the tribes. There are no specific sites of concern identified in the project area, it is rather the broader continued change that modern culture brings to the landscape.

Mitigation: There are no known adverse impacts to any items, sites, or landscaped determined to be culturally significant to the tribes. If new information is provided by Native Americans, additional or edited terms and conditions for mitigation may have to be negotiated or enforced to protect resource values.

3.4.4 Paleontological Resources

Affected Environment: The geologic formation at the surface location of the Dry Sage Unit Well #1-21 (SW NE Sec. 21, T.12N, R.90W) is the Cretaceous Age Fort Union Formation (Tf). This

formation has been classified a PFYC 3 formation for the potential for occurrence of scientifically significant fossils. Scientifically significant fossils are occasionally found within this formation. The potential for discovery of significant fossils on this location is considered to be moderate.

The geologic formation at the surface location of the Dry Sage Unit Well #1-23 (NW SE Sec. 23, T.12N, R.90W) is the Tertiary age Browns Park Formation (Tbp). This formation has been classified a PFYC 4 formation for the potential for occurrence of scientifically significant fossils. Scientifically significant fossils are abundantly found within this formation. The potential for discovery of significant fossils within the Browns Park formation is considered to be high; however, potential for discovery of fossils through a surface survey on this location is considered low because of the specific facies of the formation. Potential for buried fossils is considered moderate to low.

Environmental Consequences, Proposed Action: If any such fossils are present, construction activities could damage the fossils and the information that could have been gained from them would be lost. The significance of this impact would depend upon the significance of the fossil.

Environmental Consequences, No Action Alternative: Under the No Action alternative, because no ground disturbance would occur, there would be no effects to paleontological resources.

Environmental Consequences, Cumulative Impacts: The cumulative impacts to the moderate potential for significant fossil discovery are broad within the project area and adjacent to the project area. This area has been the location of energy development for over 50 years. This activity has created a vast amount of surface disturbance including well pads, pipelined, facilities, and access roads. To date, there have been fossil discoveries recorded. Continued activity could prove additional discoveries.

Mitigation: If fossils are discovered during construction or other operations, all activity in the area will cease and the Field Office Manager will be notified immediately. An assessment of significance will be made within an agreed time frame. Operations will resume only upon written notification by the Authorized Officer.

References

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3.5 RESOURCE USES

3.5.1 Access and Transportation

Affected Environment: FLPMA provides for recreational use of public land as part of multiple use management. Dispersed, unstructured activities typify the recreational uses occurring on most public land. Recreational activities include motorized touring, big and small game hunting, backpacking, horseback riding, hiking, mountain bike use, sightseeing, pleasure driving, and OHV use. The Serviceberry SRMA is a high quality big game habitat and travel restrictions are in place to adequately protect natural resources on public land, minimize conflicts with other uses, prevent trespass problems and ensure public safety.

Environmental Consequences, Proposed Action: The construction of new roads within a travel restricted area could promote future unauthorized use and off-road travel and could contribute to impacts to environmental values, wildlife, cultural and paleontological resources.

Environmental Consequences, No Action Alternative: There would be no impacts from the No Action Alternative.

Environmental Consequences, Cumulative Impacts: Cumulative Impacts of the road construction to the well are minimal. There are many non-system roads in the area that are somewhat inaccessible to the public as there are locked gates and signs which designate the roads as for “administrative use” only.

Mitigation: While the goal of the travel management program is to provide appropriate access for BLM permittees and to provide for administrative access for management of public lands, travel restrictions help to ensure that unrestricted motorized vehicle use does not occur. To prevent unauthorized use of non-designated roads, the lessee will ensure that the gate(s) leading to the Dry Sage Unit Well #1-21 is locked at all times, and the road leading to the well will be posted by BLM as “Authorized Use Only.” The lessee will notify BLM if unauthorized use occurs.

3.5.2 Recreation

Affected Environment: FLPMA provides for recreational use of public land as part of multiple use management. Dispersed, unstructured activities typify the recreational uses occurring on most public land. Policy guidelines in BLM Manual 8320 direct the BLM to identify administrative units known as Special Recreation Management Areas (SRMAs) when there is a distinct, primary recreation-tourism market as well as a corresponding and distinguished recreation management strategy. Zone 2 of the Serviceberry SRMA will be managed as backcountry, where national and/or local recreation-tourism visitors and communities would value the area for its dispersed, open, and undeveloped character.

Environmental Consequences, Proposed Action: Dry Well #1-21 is located in Zone 2 of the SRMA near a highly used dispersed camping area. Construction activities during the fall hunting season would disrupt the solitude of the area.

Environmental Consequences, No Action Alternative: None.

Environmental Consequences, Cumulative Impacts: Cumulative impacts due to the placement of wells within the SRMA are high. If additional wells are allowed to be placed within the SRMA, it would eventually destroy the solitude and backcountry setting of the area.

Mitigation: None.

CHAPTER 4– PUBLIC LAND HEALTH STANDARDS DETERMINATION

4.1 INTRODUCTION

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands. The Project Area assessed for compliance with the Colorado Standards of Public Land Health by an interdisciplinary team.

4.2 COLORADO PUBLIC LAND HEALTH STANDARDS

4.2.1 Standard 1 Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate, land form, and geologic processes.

Finding of most recent assessment: A formal Land Health Assessment (LHA) for the North Serviceberry Mountain allotment was completed in 2009, where Dry Sage Unit Well #1-21 is proposed. Standard 1 for Upland Soils is currently being met at all sites. With successful road and pad design, topsoil handling procedures, erosion control methods, and restoration measures during construction and restoration activities, the Proposed Action would not prevent the area from meeting Standard 1. Dry Sage Unit Well #1-23 is proposed on private surface where data on general soil conditions is not available.

Proposed Action: Two of the proposed well sites and access roads are located on private surface and therefore this standard does not apply. The #1-21 well site and access road are located on BLM surface and this standard does apply to this portion of the project. The proposed action would not meet the upland soil standard for land health, but it is not expected to while the well location and access road are used for operations. The well pad site and access road would not exhibit the characteristics of a healthy soil. Without site-specific mitigation and design features, soils present in the proposed project area may be unsuited for the type of standard construction proposed here. Upland soil health would return to the well pad and access road disturbance after reclamation practices and well abandonments have been successfully achieved.

No Action Alternative: Because there would be no additional surface disturbance associated with the construction, drilling, or completions, there would be no additional impacts to overall soil health and function.

4.2.2 Standard 2 Riparian systems associated with both running and standing water function properly and have the ability to recover from major disturbance such as fire, severe grazing, or 100-year floods.

Finding of most recent assessment: There are no known perennial streams, wetlands, seeps, or springs on federal lands within or immediately adjacent to the proposed project site. This standard does not apply.

4.2.3 Standard 3 Healthy, productive plant and animal communities of native and other desirable species are maintained at viable population levels commensurate with the species and habitat's potential.

Finding of most recent assessment: A formal Land Health Assessment (LHA) for the North Serviceberry Mountain allotment was completed in 2009. This standard is currently being met.

Proposed Action: One of the proposed well sites and access roads is located on private surface and therefore this standard does not apply. The 1-21 well site and access road are located on BLM surface and this standard does apply to this portion of the project. The Proposed Action would completely remove native vegetation within the area the well pad and road are constructed. As long as the weeds are controlled, and reclamation completed the native plant community would remain intact beyond the disturbance area and this standard would continue to be met.

The proposed 1-21 well site provides habitat for several wildlife species. The Proposed Action would alter a small amount of wildlife habitat. Although this disturbance would be minimal on a landscape level, it would decrease patch size and may degrade habitat on a small scale. Since there are no other oil and gas developments in the area, one well on BLM lands would not be expected to preclude this standard from being met.

No Action Alternative: Current conditions would continue standard is currently met.

4.2.4 Standard 4 Special status, threatened and endangered species (federal and state), and other plants and animals officially designated by the BLM, and their habitats are maintained or enhanced by sustaining healthy, native plant and animal communities.

Finding of most recent assessment: A formal Land Health Assessment (LHA) for the North Serviceberry Mountain allotment was completed in 2009. This standard is currently being met. There are no federally listed threatened or endangered plant species present within or in the vicinity of the proposed wells. For plants, this standard does not apply.

Proposed Action: One of the proposed well sites and access roads is located on private surface and therefore this standard does not apply. The 1-21 well site and access road are located on BLM surface and this standard does apply to this portion of the project. The proposed 1-21 well site provides habitat for several special status species, including greater sage-grouse, Columbian sharp-tailed grouse, Brewer's sparrow and bald eagle. The Proposed Action would alter a small amount of special status species habitat. Although this disturbance would be minimal on a landscape level, it would decrease patch size and may degrade habitat on a small scale. Since there are no other oil and gas developments in the area, one well on BLM lands would not be expected to preclude this standard from being met.

No Action Alternative: Current conditions would continue and this standard would be met under the No Action Alternative.

4.2.5 Standard 5 The water quality of all water bodies, including ground water where applicable, located on or influenced by BLM lands will achieve or exceed the Water Quality Standards established by the State of Colorado.

Finding of most recent assessment: Water quality for perennial waters influenced by the project area considered in the proposed action is currently meeting standards - there are no known water quality impairments or suspected water quality issues.

Proposed Action: One of the proposed well sites and access roads are located on private surface and therefore this standard does not apply. The 1-21 well site and access road are located on BLM surface and this standard does apply to this portion of the project. The proposed action would meet the public land health standard for water quality. Interim reclamation of the unused area on the well pads would be completed to minimize sheet and rill erosion from the well site. When the well pad is no longer needed for production operations, the disturbed well pad and access roads would be reclaimed to approximate original contours, topsoil would be redistributed, and adapted plant species would be reseeded. These Best Management Practices would help to reduce accelerated erosion of the sites. There are no water quality impairments or suspected water quality issues for waters influenced by the project area.

No Action Alternative: Under this alternative, the Federal APDs would not be approved, and new/upgraded roads servicing the proposed pads would not be constructed. Therefore, any negative impacts to surface water quality related to construction, drilling, or completions would be eliminated.

CHAPTER 5– COORDINATION AND CONSULTATION

PERSONS/AGENCIES CONSULTED: Uintah and Ouray Tribal Council, Colorado Native American Commission, Colorado State Historic Preservation Office, Colorado Parks and Wildlife.

SIGNATURE OF PREPARER: /s/ Shawn Wisner

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

Attachments:

Attachment 1: Proponent Provided Map

Attachment 2: COAs

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

DOI-BLM-CO-N010-2011-0112-EA

Based on the analysis of potential environmental impacts contained in the EA and all other available information, I have determined that the proposal and the alternatives analyzed do not constitute a major Federal action that would adversely impact the quality of the human environment. Therefore, an EIS is unnecessary and will not be prepared. This determination is based on the following factors:

1. Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality. The physical and biological effects are limited to the Little Snake Resource Area and adjacent land.
2. Public health and safety would not be adversely impacted. There are no known or anticipated concerns with project waste or hazardous materials.
3. There would be no adverse impacts to regional or local air quality, prime or unique farmlands, known paleontological resources on public land within the area, wetlands, floodplain, areas with unique characteristics, ecologically critical areas, or designated Areas of Critical Environmental Concern.
4. There are no highly controversial effects on the environment.
5. There are no effects that are highly uncertain or involve unique or unknown risk. Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.
6. This alternative does not set a precedent for other actions that may be implemented in the future to meet the goals and objectives of adopted Federal, State, or local natural resource related plans, policies, or programs.
7. No cumulative impacts related to other actions that would have a significant adverse impact were identified or are anticipated.
8. Based on previous and ongoing cultural surveys, and through mitigation by avoidance, no adverse impacts to cultural resources were identified or anticipated. There are no known American Indian religious concerns or persons or groups who might be disproportionately and adversely affected as anticipated by the Environmental Justice Policy.
9. No adverse impacts to any threatened or endangered species or their habitat that was determined to be critical under the Endangered Species Act were identified. If, at a future time, there could be the potential for adverse impacts, treatments would be modified or mitigated not to have an adverse effect or new analysis would be conducted.
10. This alternative is in compliance with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

DECISION AND RATIONALE:

I have determined that drilling this well is in conformance with the approved land use plan. It is my decision to implement the project with the mitigation measures provided in the Application for Permit to Drill, Right-of-Way Grant and attached Conditions of Approval.

MITIGATION MEASURES: The mitigation measures for this project are found in the file room of the Little Snake Field Office. The APD surface use plan, well location maps, and the Conditions of Approval are found

in the well case file labeled COC65171, Dry Sage Unit Well #1-21 and COC65170, Dry Sage Unit Well #1-23

COMPLIANCE PLAN(S):

Compliance Schedule

Compliance will be conducted during the construction phase and drilling phase to insure that all terms and conditions specified in the lease and the approved APD are followed. In the event a producing well is established, periodic inspections as identified through the Inspection and Enforcement Strategy and independent well observations will be conducted. File inspections will include a review of all required reports and the Monthly Report of Operations will be evaluated for accuracy.

Monitoring Plan

The well location and access road will be monitored during the term of the lease for compliance with pertinent Regulations, Onshore Orders, Notices to Lessees, or subsequent COAs until final abandonment is granted; monitoring will help determine the effectiveness of mitigation and document the need for additional mitigative measures.

Assignment of Responsibility

Responsibility for implementation of the compliance schedule and monitoring plan will be assigned to the Fluid Mineral staff in the Little Snake Field Office. Primary inspectors will be the Petroleum Engineering Technician, but the Petroleum Engineer, Natural Resource Specialist, Realty Specialist, and Legal Instruments Examiner will also be involved.

SIGNATURE OF PREPARER: /s/ Shawn Wisner

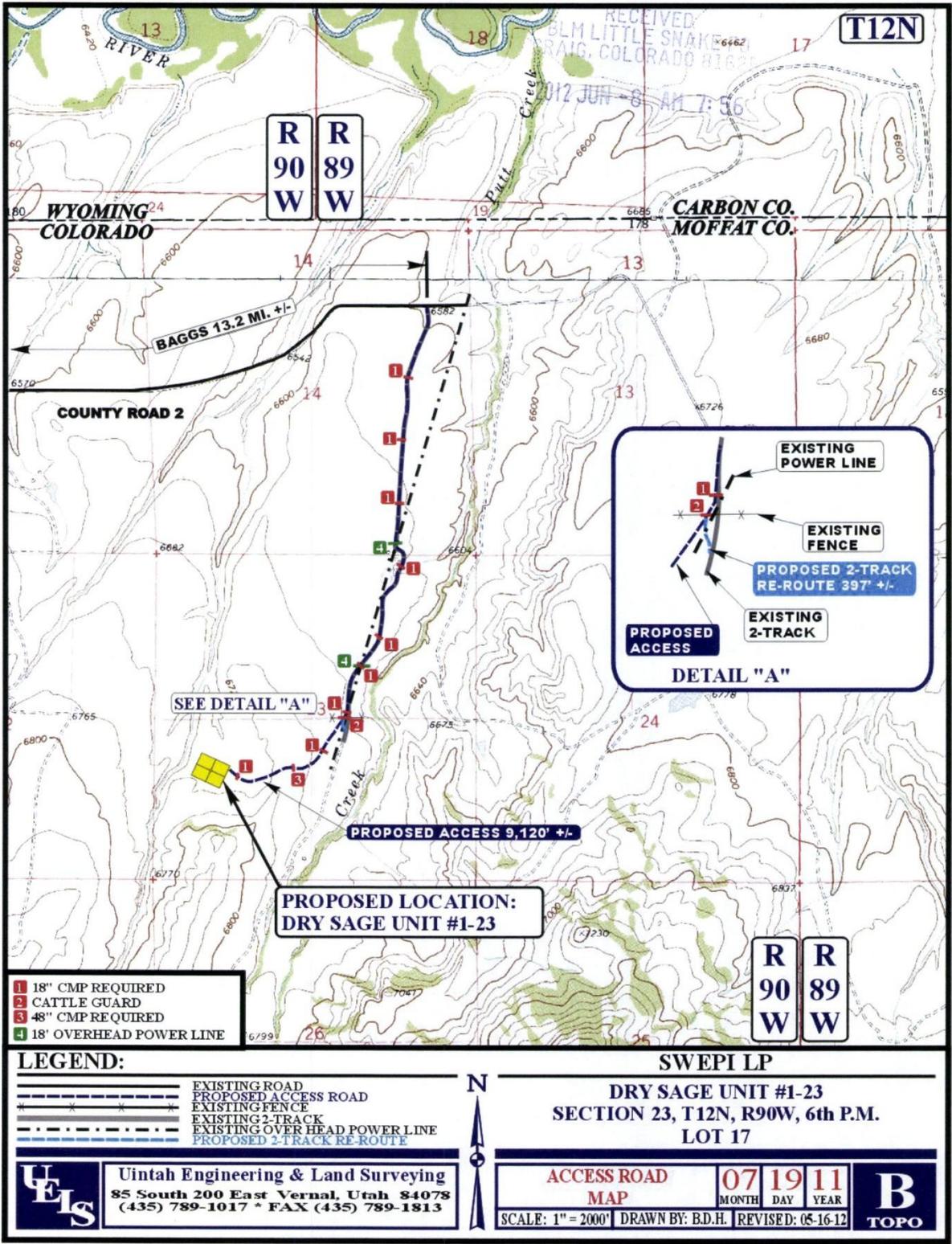
DATE SIGNED:

SIGNATURE OF ENVIRONMENTAL REVIEWER:

DATE SIGNED:

SIGNATURE OF AUTHORIZED OFFICIAL:

DATE SIGNED:



**ADVISORY NARRATIVES AND CONDITIONS OF APPROVAL
APPLICATION FOR PERMIT TO DRILL**

Well No.	<u>DRY SAGE #1-21</u>	Lease No.	<u>COC65171</u>	Legal Description	<u>SHL: SWNE Sec. 21, T12N, R90W</u> <u>BHL: NESW Sec. 21, T12N, R90W</u>
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SITE SPECIFIC CONDITIONS

1. Retaining as much vegetative cover as possible during the project and/or reclaiming and covering disturbed areas shortly following excavation should help keep localized dust down during dry periods.
2. To mitigate impacts to greater sage-grouse and Columbian sharp-tailed grouse during the lekking and nesting season, no construction, drilling or completion activities will occur between March 1 and June 30.
3. Conduct post-development well site visits between the hours of 9:00 a.m. and 4:00 p.m. to prevent disturbances during the lekking season (March 1 to May 15).
4. Install raptor perch deterrents on equipment, fences, cross arms and pole tops.
5. To prevent long term impacts associated with noise, sound producing equipment (such as compressors or pump jacks) must be equipped with a hospital grade muffler or similar device which limits sound emissions to 49 decibels or less measured 30 feet from the source. Mufflers will be pointed upward to dissipate potential vibration.
6. No surface disturbing activities between December 1 and April 30 in order to prevent disturbance of big game using critical winter range.
7. A protective fence and interpretative sign will be installed at the homestead by the project proponent. The manner in which this will be accomplished will be detailed in a Memorandum of Agreement. No ground disturbing activity will be authorized at the Dry Sage Unit #1-21 location prior to completion and agreement on the format and content of the MOA.
8. Any cultural and/or paleontological (fossil) resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and the authorized officer will make any decision as to proper mitigation measures after consulting with the holder.
9. To prevent unauthorized use of non-designated roads, the lessee will ensure that the gate(s) leading to the Dry Sage Unit Well #1-21 is locked at all times, and the road leading to the well will be posted by BLM as "Authorized Use Only." The lessee will notify BLM if unauthorized use occurs.

Well No.	<u>DRY SAGE #1-23</u>	Lease No.	<u>COC65169</u>	Legal Description	<u>SHL: LOT 17 Sec. 23, T12N, R90W</u> <u>BHL: LOT 8 Sec. 27, T12N, R90W</u>
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SITE SPECIFIC CONDITIONS

1. Retaining as much vegetative cover as possible during the project and/or reclaiming and covering disturbed areas shortly following excavation should help keep localized dust down during dry periods.
2. To mitigate impacts to greater sage-grouse and Columbian sharp-tailed grouse during the lekking and nesting season, no construction, drilling or completion activities will occur between March 1 and June 30.
3. Conduct post-development well site visits between the hours of 9:00 a.m. and 4:00 p.m. to prevent disturbances during the lekking season (March 1 to May 15).

4. Install raptor perch deterrents on equipment, fences, cross arms and pole tops.
5. To prevent long term impacts associated with noise, sound producing equipment (such as compressors or pump jacks) must be equipped with a hospital grade muffler or similar device which limits sound emissions to 49 decibels or less measured 30 feet from the source. Mufflers will be pointed upward to dissipate potential vibration.
6. No surface disturbing activities between December 1 and April 30 in order to prevent disturbance of big game using critical winter range.
7. Any cultural and/or paleontological (fossil) resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and the authorized officer will make any decision as to proper mitigation measures after consulting with the holder.

STANDARD CONDITIONS

1. The Little Snake Field Office will be given 24-hour notification prior to commencing construction and/or reclamation work. Contact the Little Snake Field Office (970) 826-5000 to report work, which will commence.
2. Notify Little Snake Field Office at (970) 826-5000 12 to 24-hours in advance to witness running and cementing of surface casing and testing of the BOPE. Also notify the Little Snake Field Office 24-hours in advance of beginning well completion operations.
3. The notice of spud will be reported orally to the Little Snake Field Office (970) 826-5000 at least **24** hours after spudding. This notice shall include spud date, time, details of spud (hole, casing, cement, etc.), API well number, and date the rotary rig was moved on location. If the spudding occurs on a weekend or holiday, wait until the following regular workday to make this report. The oral notice shall be followed by written notification within 5 working days.
4. Two copies of all electric and other logs for the well as per 43 CFR 3162.4-1(b) shall be submitted on DVD/CD rather than hard copy, *except* for the Cement Bond Log which shall be provided *both* electronically and a hard copy.
5. This permit does not relieve the proponent from the requirement to obtain other required local, state, and federal permits.
6. No hazardous materials, hazardous wastes, or trash will be disposed of on public lands or on private surface overlying the oil and gas lease. If a release does occur, it will be reported to the Little Snake Field Office immediately at (970) 826-5000.
7. All survey stakes representing the leveled drill pad, the crest of excavations, the toe of embankments, the reserve pit, and the access road will be in place prior to construction. Staking shall include the well location, two 200-foot directional reference stakes, the exterior dimensions of the drill pad, reserve pit and other areas of surface disturbance, cuts and fills, and centerline flagging of new roads with road flagging being visible from one to the next.
8. Surface disturbance and vehicular travel will be limited to the approved location and approved access route. Any additional area needed will be approved in advance.
9. If fossils are discovered during construction or other operations, all activity in the area will cease and the Field Office Manager will be notified immediately. An assessment of significance will be made within an agreed timeframe. Operations will resume only upon written notification by the Authorized Officer.

10. STANDARD CULTURAL STIPULATION: If cultural or paleontological resources are discovered during exploration operations under this license, the licensee shall immediately notify the Field Officer Manager and shall not disturb such discovered resources until the Field Officer Manager issues specific instructions.
- a. Within 5 working days after notification, the Field Office Manager shall evaluate any cultural resources discovered and shall determine whether any action may be required to protect or to preserve such discoveries.
 - b. The cost of data recovery for cultural resources discovered during exploration operations shall be borne by the licensee, if the licensee is ordered to take any protective measures. Ownership of cultural resources discovered shall be determined in accordance with applicable law.
 - c. The operator is responsible for informing all persons who are associated with the operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are encountered or uncovered during any project activities, the operator is to immediately stop activities in the immediate vicinity of the find and immediately contact the Authorized Officer (970) 826-5087. Within five working days the Authorized Officer will inform the operator as to:
 1. Whether the materials appear eligible for the National Register of Historic Places;
 2. The mitigation measures the operator will likely have to undertake before the identified area can be used for project activities again and,
 - d. If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the Authorized Officer will assume responsibility for whatever recordation, and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation costs. The Authorized Officer will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the Authorized Officer that the required mitigation has been completed, the operator will then be allowed to resume construction.
 - e. Pursuant to 43 CFR 10.4(g) (Federal Register Notice: Monday December 4, 1995, Vol 60, No. 232) the holder of this authorization must notify the Authorized Officer, by telephone (970) 826- 5087, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the Authorized Officer.
11. VEGETATION CLEARING: Vegetation removal and the degree of surface disturbance will be minimized wherever possible.
[Example of site-specific requirement: During vegetation clearing activities, trees and woody vegetation removed from the well pad and access road will be moved aside prior to any soil disturbing activities. Care will be taken to avoid mixing soil with the trees and woody vegetation. Trees left for wood gathering will be cut (twelve inches or less from the ground), delimbed, and the trunks, six (6) inches or more in diameter will be removed and placed either by the uphill side of the access road, or moved to the end of the road, or to a road junction for easy access for wood gatherers and to reduce vehicle traffic on the well pad. Trees with a trunk diameter less than six (6) inches and woody vegetation will be used to trap sediment, slow runoff, or scattered on reclaimed areas to stabilize slopes, control erosion, and improve visual resources.]
12. TOPSOIL MANAGEMENT:
 The top eight (8) inches of soil material will be stripped and stockpiled around the perimeter of the well location to control run-on and run-off, and to make redistribution of topsoil more efficient during interim reclamation. The stockpiled soil will be reasonably free of brush and tree parts. Topsoil will be clearly segregated from excess spoil material.
- Earthwork for interim and final reclamation must be completed within 6 months of well completion or plugging (weather permitting).
 - Salvaging and spreading topsoil will not be performed when the ground or topsoil is frozen or too wet to adequately support construction equipment. If such equipment creates ruts in excess of four (4) inches deep, the soil will be deemed too wet.
 - No major depressions will be left that would trap water and cause ponding.

13. SEEDING: Seedbed Preparation. Initial seedbed preparation will consist of backfilling, leveling, and ripping all compacted areas to be seeded to a minimum depth of 18 inches with a minimum furrow spacing of 2 feet, followed by recontouring the surface and then evenly spreading the stockpiled topsoil. Prior to seeding, the seedbed will be scarified and left with a rough surface.
 - Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24-hours prior to seeding.
 - Seed Application. Seeding will be conducted no more than 24 hours following completion of final seedbed preparation.
 - The application rate shown in the table is based on 45 pure live seeds (PLS) per square foot, drillseeded to a depth of 0.25 to 0.5 inch. (However, brush species will be seeded during the winter on the ground surface or preferably on top of snow.) In areas that will not be drill-seeded, the seed mix will be broadcast-seeded at twice the application rate shown in the table and covered 0.25 to 0.5 inch deep with a harrow or drag bar or will be broadcast-seeded into imprints, such as fresh dozer cleat marks.
 - No seeding will occur from May 15 to September 15. Fall seeding is preferred and will be conducted after September 15 and prior to ground freezing. Spring seeding will be conducted after the frost leaves the ground and no later than May 15.
14. EROSION CONTROL & MULCHING: Mulch, silt fencing, wattles, hay bales, and other erosion control devices will be used on areas at risk of soil movement from wind and water erosion.
 - Mulch will be used if necessary to control erosion, create vegetation micro-sites, and retain soil moisture and may include hay, small-grain straw, wood fiber, live mulch, cotton, jute, or synthetic netting. Mulch will be free from mold, fungi, and certified free of noxious or invasive weed seeds.
 - Straw mulch will contain fibers long enough to facilitate crimping and provide the greatest cover.
15. MANAGEMENT OF INVASIVE, NOXIOUS, AND NON-NATIVE SPECIES: All reclamation equipment will be cleaned prior to use to reduce the potential for introduction of noxious weeds or other undesirable non-native species.
 - An intensive weed monitoring and control program will be implemented beginning the first growing season after interim and final reclamation.
 - Monitoring will be conducted at least annually during the growing season to determine the presence of any State-listed noxious weeds. Noxious weeds that have been identified during monitoring will be promptly treated and controlled. A Pesticide Use Proposal (PUP) will be submitted to BLM for approval prior to the use of herbicides.
16. The cuttings pit will be designed to exclude runoff water and maintain a 2-foot freeboard between the maximum fluid level and the lowest point of containment. The cuttings pit will not be used for disposal of any materials or fluids, except for materials or fluids specifically addressed in the drilling program or having a subsurface origin. If oil or oily substance is in the cuttings pit, it must be removed within 30 days after the drilling rig is removed. Netting will be installed if oily substance is present in the cuttings pit.
17. Drainage for runoff water will be provided to divert runoff water away from the cuttings pit, cut portions of the well location and the topsoil stockpile. Runoff water that concentrates and forms channels on the well location will be diverted and/or dispersed to prevent erosion of the fill slopes. Any ditches designed to provide runoff drainage will be constructed on a minimal grade and will release water onto undisturbed ground without causing accelerated erosion. The operator will take additional measures if erosion is occurring within the runoff water drainage system.
18. The perimeter of the reserve pit and production pits, if any, will be fenced with woven wire with 2 strands of barbed wire, properly spaced, on the top and all held in place by side posts and corner H-braces to inhibit entry by livestock and wildlife. The fence will be maintained until backfilling or removal of facilities occurs.
19. In the event downhole operations threaten to exceed the required 2-foot freeboard, regarding reserve pit fluids, immediate notification will be provided to the Authorized Officer with concurrent steps taken to minimize the introduction of additional fluids, until alternative containment methods can be approved.
20. Cuttings pits must be free of fluids and backfilled within 6 months of well completion. Pits remaining open

after 6 months will require written authorization of the Authorized Officer. Immediately upon well completion, any hydrocarbons or trash in the pit will be removed. On multi well pads cuttings pits must be free of fluids and backfilled within 6 months of the last well completed on the pad. The method of disposal for cuttings pit fluids must be approved by the BLM AO. Pits will be allowed to dry, be pumped dry, or solidified in-situ prior to backfilling. The backfilling of the cuttings pit will be completed within 30 days after dry conditions exist and will meet the following minimum requirements:

- a. Following completion activities, pit liners will be removed and disposed of at an approved landfill.
 - b. Backfilling will be done in such a manner that the mud and associated solids will be confined to the pit and not squeezed out and incorporated in the surface materials.
 - c. There will be a minimum of 5 feet of cover (overburden) on the pit. In relatively flat areas the pit area will be slightly mounded to allow for settling and to promote surface drainage away from the backfilled pit.
 - d. When the work is completed, the pit areas will support the weight of heavy equipment without sinking and over time shall not subside over 6-inch depth.
21. In the event production is established, all land surfaces that are to remain free of vegetation (roads and well location) will be monitored for and protected from wind erosion; dry powdery soil will be treated to minimize wind erosion. The unused disturbed areas surrounding the well location will be re-contoured to appropriate confirmation as soon as possible. Some or all of the stockpiled topsoil will be evenly distributed over these re-contoured areas. Brush cleared prior to construction of the well site shall be scattered back over the re-contoured area.
 22. Prior approval is required to remove reserve pit fluids from the reserve pit; a request of this type will need to include the destination of the fluids and if the destination is not a State approved facility, the request will include State approval of the destination.
 23. All pits, cellars, rat holes and other bore holes unnecessary for further lease operations, excluding the reserve pit, will be backfilled immediately after the drilling rig is released. Pits, cellars and/or bore holes that remain on location must be fenced as specified for the reserve pit in the applicant's Surface Use Plan.
 24. If installed, production facilities will be located on cut portions of the existing drill pad.
 25. In the event a producing well is established, all new production equipment which has open-vent exhaust systems, such as heater treaters, separators, dehydration units, and flare stacks, shall be designed and constructed to prevent birds and bats from entering or nesting in or on such units, and to the extent practical, to discourage birds from perching on the exhaust stacks.
 26. A containment berm must be installed around all storage tanks, including temporary tanks. Compaction and construction of the berm surrounding the tank or tank battery will be designed to prevent lateral movement of fluids through the utilized materials, prior to storage of fluids. The berm must be constructed to contain at minimum 110 percent of the storage capacity of the largest tank within the berm. All loading lines will be placed inside the berm.
 27. All production facilities installed on location that have the potential to leak or spill oil, glycol, produced water, or other fluid, which may constitute a hazard to public health or safety, shall be placed within an appropriate secondary containment or diversionary structure. The structure shall hold 110% of the capacity the largest single tank in use and be impervious to any oil, glycol, produced water, or other toxic fluid for 72 hours. It shall be installed so that any spill or leakage would not drain, infiltrate, or otherwise escape to ground water, surface water, or navigable waters before cleanup is completed.
 28. INTERIM RECLAMATION PRODEDURES:

Recontouring:

- The portions of the cleared well site not needed for operational and safety purposes will be recontoured to the original contour or to an interim contour that blends with the surrounding topography as much as possible. Sufficient level area will remain for setup of a workover rig and to park equipment. In some cases, rig anchors may need to be pulled and reset after recontouring to allow for maximum interim reclamation.

- If the well is a producer, the final cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Construction slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
- Roads and well production equipment, such as tanks, treaters, separators, vents, electrical boxes, and equipment associated with pipeline operation, will be placed on location so as to permit maximum interim reclamation of disturbed areas. If equipment is found to interfere with the proper interim reclamation of disturbed areas, the equipment will be moved so proper recontouring and revegetation can occur.

Application of Topsoil and Revegetation:

- Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including road cuts and fills and to within a few feet of the production facilities, unless an all-weather, surfaced, access route or small “teardrop” turnaround is needed on the well pad.
- In order to inspect and operate the well or complete workover operations, it may be necessary to drive, park, and operate equipment on restored, interim vegetation within the previously disturbed area. Damage to soils and interim vegetation will be repaired and reclaimed following use. To prevent soil compaction, under some situations, such as the presence of moist, clay soils, the vegetation and topsoil will be removed prior to workover operations and restored and reclaimed following workover operations.

Visual Resources Mitigation:

- Oil and gas operations will be subject to the range of mitigation practices noted on the BLM visual resource management (VRM) website: <http://www.blm.gov/nstc/VRM/>.
- Trees and vegetation will be left along the edges of the pads to provide screening.
- To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, debris, and rock over recontoured cut and fill slopes.
- To reduce the view of production facilities from visibility corridors and private residences, facilities will not be placed in visually exposed locations (such as ridgelines and hilltops).
- Production facilities will be clustered and placed away from cut slopes and fill slopes to allow the maximum recontouring of cut and fill slopes.
- All long-term above ground structures will be painted an appropriate color from the BLM “Supplemental Environmental Colors” chart to blend with the natural color of the landscape background.
- Visually mitigate all surface disturbance activity back to the integrity of the VRI scenic quality rating.

29. FINAL RECLAMATION PRODEDURES:

- Final reclamation actions will be completed within 6 months of well plugging.
- All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Resalvaged topsoil will be respread evenly over the entire disturbed site to ensure successful revegetation. To help mitigate the contrast of recontoured slopes, reclamation will include measures to feather cleared lines of vegetation and to save and redistribute cleared trees, woody debris, and large rocks over recontoured cut and fill slopes.
- Water breaks and terracing of the site will only be installed when absolutely necessary to prevent erosion of fill material. Water breaks and terracing are not permanent features and will be removed and reseeded when the rest of the site is successfully revegetated and stabilized.
- If necessary to ensure timely revegetation, the pad will be fenced to BLM standards to exclude livestock grazing for the first two growing seasons or until seeded species become firmly established, whichever comes later. Fencing will meet standards found on page 18 of the Gold Book, 4th Edition, or will be fenced with operational electric fencing.
- Final abandonment of pipelines and flow lines will involve flushing and properly disposing of any fluids in the lines. All surface lines and any lines that are buried close to the surface that may become exposed in the foreseeable future due to water or wind erosion, soil movement, or anticipated subsequent use, must be removed. Deeply buried lines may remain in place unless otherwise directed by the authorized officer.

Monitoring and Final Abandonment Approval

- Reclaimed areas will be monitored annually. Actions will be taken to ensure that reclamation standards are met as quickly as reasonably practical.
- Reclamation monitoring will be documented in an annual reclamation report submitted to the Authorized Officer by December 31. The report will document compliance with all aspects of the reclamation objectives and standards, identify whether the reclamation objectives and standards are likely to be achieved in the near future without additional actions, and identify actions that have been or will be taken to meet the objectives and standards. The report will also include acreage figures for Initial Disturbed Acres, Successful Interim Reclaimed Acres, and Successful Final Reclaimed Acres. Annual reports will not be submitted for sites approved by the Authorized Officer in writing as having met interim or final reclamation standards. Any time 30 percent or more of a reclaimed area is redisturbed, monitoring will be reinitiated. The Authorized Officer will be informed when reclamation has been completed, is successful, and the site is ready for final inspection.

30. RECLAMATION PERFORMANCE STANDARDS:

Interim Reclamation Standard:

Disturbed areas not needed for long-term production operations or vehicle travel have been recontoured, protected from erosion, and revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community sufficient to minimize visual impacts, provide forage, stabilize soils, and impede the invasion of noxious weeds.

Final Reclamation Standard:

The original landform has been restored for all disturbed areas including well pads, production facilities, roads, pipelines, and utility corridors.

- A self-sustaining, vigorous, diverse, native (or otherwise approved) plant community is established on the site, with a density sufficient to control erosion and non-native plant invasion and can reestablish wildlife habitat or forage production. At a minimum, the established plant community will consist of species included in the seed mix and/or desirable species occurring in the surrounding natural vegetation. No single species will account for more than 30 percent total vegetative composition unless it is evident at higher levels in the adjacent landscape. Permanent vegetative cover will be determined successful when the basal cover of desirable perennial species is at least 80 percent of the basal cover *of the adjacent undisturbed area*. Plants must be resilient as evidenced by well-developed root systems and flowers. Shrubs must be well established and in a “young” age class at a minimum (therefore, not comprised mainly of seedlings that may not survive until the following year).
- In agricultural areas, irrigation systems and soil conditions are reestablished in such a way as to ensure successful cultivation and harvesting of crops.
- Erosion features are equal to or less than surrounding area and erosion control is sufficient so that water naturally infiltrates into the soil and gulying, headcutting, slumping, and deep or excessive rilling (greater than 3 inches) is not observed.
- The site is free of State- or county-listed noxious weeds, oil field debris and equipment, and contaminated soil. [*Example of site-specific requirement:* Given that cheatgrass is common in portions of the Project Area, it may not be possible to totally eliminate this invasive species from the reclaimed area. In the case of cheatgrass, interim reclamation will be considered acceptable if cheatgrass and other undesirable vegetation are less than five percent cover, if the adjacent vegetation is less than 50 percent undesirables. Cheatgrass will be less than 50 percent cover if the adjacent vegetation is more than 50 percent undesirable species.]
- The final inspection for final reclamation success and approval for final abandonment will be subject to an interdisciplinary review. An interdisciplinary team consisting of, at a minimum, a wildlife biologist, a rangeland management specialist, and a natural resources specialist will evaluate the reclamation against the performance standards and provide the authorized officer with a recommendation as to whether or not objectives have been met.

REGULATORY REMINDERS

- A. This permit is valid for a period of two years from the date of approval. Any requests for extensions must be submitted prior to the end of the two-year period. If the permit terminates, any surface disturbance created under the permit must be rehabilitated in accordance with the approved plan within 90 days of termination, unless otherwise approved by the Authorized Officer. An expired permit may be reinstated at the Authorized Officer's discretion; however, future operations may require a new application be filed for approval.
- B. All drilling operations, unless otherwise specifically approved in the APD, must be conducted in accordance with Onshore Oil and Gas Order No. 2; Drilling Operations.
- C. All 10-Day Requirement responses are made part of this APD.
- D. There shall be no deviation from the proposed drilling and/or workover program as approved, without prior approval from the Little Snake Field Office. Safe drilling and operating practices must be observed.
- E. Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease, which would entitle the applicant to conduct operations thereon.
- F. No location will be constructed or moved, no well will be plugged, and no drilling or workover equipment will be removed from a well to be placed in a suspended status without prior approval of the Little Snake Field Office. If operations are to be suspended for more than 30 days, prior approval for certain well operations must be obtained and notification given before resumption of operations in accordance with 43 CFR 3162.3-2 and 3162.3-4.
- G. In the case of newly drilled dry holes or failures, and in emergency situations, oral approval for subsurface abandonment operations may be granted by the Little Snake Field Office. Oral approvals must be confirmed in writing (Notice of Intention to Abandon (Form 3160-5)) within 15 days. Unless the plugging is to take place immediately upon receipt of oral approval, the appropriate resource area must be notified at least 48 hours in advance of the plugging of the well, in order to provide a representative the opportunity to witness plugging operations.
- H. Whether the well is completed as a dry hole or as a producer, "Well Completion and Recompletion Report and Log" (Form 3160-4) must be submitted not later than 30 days after completion of the well or after completion of operations being performed, in accordance with Onshore Oil and Gas Order No. 1. Daily drilling reports, a copy of all logs, core descriptions, core analyses, well-test data, geologic summaries, sample descriptions, and all other surveys or data obtained and compiled during the drilling, workover, and/or completion operations (with Form 3160-4) will be filed and sent to the Little Snake Field Office, 455 Emerson Street, Craig, Colorado 81625. Samples (cuttings, fluid, and/or gas) will be submitted only when requested by the Authorized Officer.
- I. Section 102 (b) (3) of the Federal Oil and Gas Royalty Management Act of 1982, as implemented by the applicable provisions of the operating regulations at Title 43 CFR 3162.4-1 (c), requires that "not later than the fifth business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, the operator shall notify the authorized officer by letter or sundry notice, Form 3160-5, or orally to be followed by a letter or sundry notice, or the date on which such production has begun or resumed."

The date on which a well commences production, or resumes production after having been off production for more than 90 days is to be construed as follows:

1. For an oil well, the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility, such as a test tank or the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever occurs first;
2. For a gas well, that date on which gas is first measured through sales metering facilities or the date on which associated liquid hydrocarbons are first sold or shipped from a temporary storage facility, whichever occurs first. For purposes of this provision, a gas well shall not be considered to have been off production unless it is incapable of production.

If you fail to comply with this requirement in the manner and time allowed, you shall be liable for a civil penalty of up to \$10,000 per violation for each day such violation continues, not to exceed a maximum of 20 days. See Section 109(c) (3) of the Federal Oil and Gas Royalty Management Act of 1982 and the

implementing regulations at Title 43 CFR 3163.2(e) (2).

- J. This APD is approved subject to the requirement that, should the well be successful (completed for production or recompleted for production in a new interval), the Little Snake Field Office must be notified when it is placed in a producing status. Such notification may be provided orally if confirmed in writing, and must be received in the Little Snake Field Office by not later than the 5th business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1. Operator name
 - 2. Well name, number, and location
 - 3. Date well was placed on production
 - 4. The lease, or communitized tract, or unit participating area to which the well's production is attributable.
- K. A separate Monthly Report of Operations, Form 3160-6, shall be submitted for each lease, unit participating area, or communitization agreement, beginning with the month in which drilling operation commence, in accordance with 43 CFR 3162.4-3. This report shall be sent to Minerals Management Service, Production Accounting Division, P.O. Box 17110, Denver, Colorado 80217.
- L. If at any time the facilities located on public lands authorized by the terms of the lease are no longer included in the lease (due to contraction in the unit or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statute. The authorization will be subject to appropriate rental, or other financial obligation determined by the Authorized Officer.
- M. All produced liquids must be contained, including the dehydrator vent/condensate line effluent. All production pits must be bermed and fenced.
- N. Gas produced from this well may not be vented or flared beyond an initial, authorized test period of 30 days or 50 MMCF following completion, whichever comes first, without the prior written approval of the authorized officer. Should gas be vented or flared without approval beyond the authorized test period, you may be directed to shut the well in until the gas can be captured or approval to continue venting or flaring is granted and you may be required to compensated the lessor for that portion of the gas that was vented or flared without approval which is determined to have been avoidably lost.
- O. Produced water from newly completed wells may be temporarily disposed of into the reserve pit for a period of up to 90 days. During the 90-day periods, an application for approval of a permanent disposal method and location will be submitted according to Onshore Order No. 7 for approval.
- P. If an Electronic Flow Computer (EFC) on a differential-type flow meter for gas measurement is used, the operator will follow the standards and requirements of Notice to Lessees (LTL-2007-1). This NTL does not alter the standards and requirements of Onshore Order No. 5, applicable variances, or NTLs which address the primary device.
- Q. All occurrences of useable water at depths encountered, shall be reported to the Little Snake Field Office with the Well Completion Report.
- R. A schematic facilities diagram as required by CFR 43, Part 3162.7-5, shall be submitted to the Little Snake Field Office within 60 days of installation or first production, whichever occurs first. All site security regulations as specified in Onshore Order No. 3 shall be adhered to. All product lines entering and leaving hydrocarbon storage tanks will be effectively sealed in accordance with 3162.7-5(b).

The permit holder is required to use certified weed free hay, straw and mulch on BLM lands in Colorado should the use or storage of hay, straw or mulch be necessary. Any person who knowingly and willfully violates this regulation may be subject to a fine of not more than \$1,000 or imprisonment of not more than 12 months, or both as defined in 43 USC 1733 (a).