

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

**Environmental Assessment
for the
May 2013 Oil and Gas Lease Sale**

**Kremmling Field Office
P O Box 68
Kremmling, CO 80459**

DOI-BLM-LLCON02000-2012-0054-EA

November, 2012



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ENVIRONMENTAL ASSESSMENT

1.0 INTRODUCTION

NUMBER: DOI-BLM-LLCON02000-2012-054-EA

PROJECT NAME: May 2013 Competitive O&G Lease Sale

LEGAL DESCRIPTION: T. 11 N., R. 76 W., Sec. 2, 3, 4, 9, 10, 11
Larimer County, Colorado

T. 9. N., R. 77 W., Sec. 7
Jackson County, Colorado

(See Attachment F for maps of Parcel Locations and
Attachments A, B, and C for Parcel Descriptions)

1.1 BACKGROUND:

It is the policy of the Bureau of Land Management (BLM) as derived from various laws, including the Mineral Leasing Act of 1920 and the Federal Land Policy and Management Act of 1976, to make mineral resources available for disposal and to encourage development of mineral resources to meet national, regional, and local needs.

The BLM Colorado State Office conducts a quarterly competitive lease sale to sell available oil and gas lease parcels. A Notice of Competitive Lease Sale (NCLS), which lists lease parcels to be offered at the auction, is published by the BLM State Office at least 90 days before the auction is held. It gives the particulars regarding the conduct of the sale. Lease stipulations applicable to each parcel are specified in the Sale Notice. The decision as to which public lands and minerals are open for leasing and what leasing stipulations may be necessary, based on information available at the time, is made during the land use planning process. Constraints on leasing and any future development of split estate parcels are determined by the BLM in consultation with the appropriate surface management agency or the private surface owner.

In the process of preparing a lease sale, the BLM State Office sends a draft parcel list to each field office where the parcels are located. Field Office staff then review the legal descriptions of the parcels to determine if they are in areas open to leasing, if appropriate stipulations have been included, if new information has become available which might change any analysis conducted during the planning process, if appropriate consultations have been conducted, and if there are any special resource conditions of which potential bidders should be made aware. The nominated parcels are posted online for a two week public scoping period. This posting also includes the appropriate stipulations as identified in the relevant RMP. Comments received are reviewed and incorporated into the Environmental Assessment, as applicable.

Once the draft parcel review is completed and returned to the State Office, a list of available parcels and stipulations is made available to the public through a NCLS.

Lease stipulations are posted on the Colorado BLM website
http://www.blm.gov/co/st/en/BLM_Programs/oilandgas/leasing.html

On rare occasions, additional information obtained after the publication of the NCLS may result in withdrawal of certain parcels prior to the day of the sale.

Four parcels comprising 3611.42 acres within the Kremmling Field Office (KFO) were nominated for the May 2013 Competitive Oil and Gas Lease Sale. This figure is comprised of 3,368.80 acres of federal land and 2,442.62 acres of split-estate land. The legal descriptions of the nominated parcels are in Attachment A.

The following Environmental Assessment (EA) documents the review of the parcels offered in the May 2013 Competitive Oil and Gas Lease Sale that are under the administration of the Kremmling Field Office (KFO). It verifies conformance with the approved land use plan, provides rationale for deferring or dropping parcels from a lease, provides rationale for attaching additional lease stipulations to specific parcels, and analyzes the environmental effects of potential leasing decisions.

1.2 PURPOSE & NEED FOR THE ACTION:

The purpose is to consider and respond to the nomination of parcels of public land by members of the public for competitive leasing and potential exploration and development of oil and gas resources.

The need for the action is to fulfill the BLM's responsibilities under the Mineral Leasing Act of 1920 (MLA), as amended, which establishes that deposits of oil and gas owned by the United States are subject to disposition in the form and manner provided by the MLA under the rules and regulations prescribed by the Secretary of the Interior, where consistent with the FLPMA, the National Environmental Policy Act (NEPA) of 1969, as amended (Public Law 91-90, 42 USC 4321 et seq.), and other applicable laws, regulations, and policies.

1.3 DECISION TO BE MADE:

The BLM will determine whether or not to offer parcels for competitive oil and gas leasing, and if so, under what terms and conditions.

1.4 PLAN CONFORMANCE REVIEW:

The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: Kremmling Resource Area, Resource Management Plan (RMP)/EIS and Record of Decision (ROD)

Date Approved: December 19, 1984

LUP Amendment: Colorado Oil and Gas Leasing & Development Final EIS/Plan Amendment to the Kremmling RMP/ROD, 1991

Decision Number/Page: II. B. 1. b. 5

Decision Language: “Federal mineral estates will remain open to oil & gas leasing under the Mineral Leasing Act of 1920 except for approximately 10,120 acres which designated as No Leasing. Some lands are specifically encumbered with surface use restrictions.”

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.

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

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.

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.

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.

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.

Because standards exist for each of these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in subsequent sections of this document.

1.5 SCOPING, PUBLIC INVOLVEMENT, AND ISSUES:

Scoping: Internal and external scoping were the primary mechanisms used by the BLM to initially identify issues associated with the parcels analyzed in this document.

Internal scoping was initiated when the project was presented to the Kremmling Field Office interdisciplinary team on 07/27/2012.

External scoping was conducted by posting this project on the KFO's on-line National Environmental Policy Act (NEPA) register on 09/05/2012. The Kremmling Field Office sent letters to the following agencies regarding the proposed action: Colorado Parks & Wildlife (CPW), Colorado State Land Board, Larimer County and Jackson County, five Native American Tribes (Northern Ute, Ute Mountain Ute, Southern Ute, Eastern Shoshone, and Northern Arapaho), Laramie River Guest Ranch (Special Recreation permittee), Krista Kaplan and Bill Burleigh (Special Recreation permittee), and Diamond Tail Ranch, (Grazing permittee).

Comments were received from CPW, Barbara Vasquez on behalf of other North Park property owners, The Wilderness Society, National Wildlife Federation, Westslope Colorado Environmental Coalition, Rocky Mountain National Audubon Society, Rocky Mountain and Wyoming Chapters Sierra Club, and Rocky Mountain Wild. See Table 1 for responses to comments.

Issues: Internal scoping initially identified issues related to sage grouse priority habitat in Jackson County and areas with important cultural and historical features in Larimer County.

Comments received during public scoping included.

- Risks to the North Platte River watershed;
- Impacts to big game and sage grouse habitat;
- Impacts of using hydraulic-fracturing during development;
- That the Kremmling Field Office does not have a Master Leasing Plan;
- Colorado State Wildlife Areas would be impacted;
- Potential Conservation Areas would be impacted;
- Bald Eagle Winter Range would be impacted; and
- Impacts to winter range and birthing areas for big game.

The EA will carry forward these issues for analysis. No issues that were raised during scoping were dismissed from detailed analysis. See Attachment E for Responses to Comments received during scoping.

While posted for a 30 day comment period, there were two newspaper articles about the proposed lease sale published in the Fort Collins Coloradoan. BLM received seventeen comments from the public. See Attachment E for Responses to Comments received during the 30 day comment period.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION:

The Proposed Action is to lease Federal mineral estate from lands reviewed and found suitable for leasing in the resource area through the Kremmling Resource Area ROD/RMP (December 1984). The current lease sale includes parcels in Larimer County and Jackson County. Those lands proposed for lease total 3,611.42 acres of federal mineral estate and are described in Attachment A and are a mix of federal and private surface. The lands have been grouped into appropriate lease parcels for purposes of offering lands via competitive lease sale as oil and gas leases. Offered lease parcels are grouped according to regulatory requirements as prescribed in the 43 CFR 3100 regulations, setting parameters for acreage limitations, public lands, acquired lands, and excepted acreage. Regulations also set certain lease terms and conditions under which development of the surface of oil and gas leases may occur. Stipulations for other surface protection will be applied where regulatory lease terms and conditions are not adequate to protect those resources. These stipulations are described in Attachment D and will be attached as stipulations to any parcels leased in areas where the stipulations apply.

Each lease would be issued subject to stipulations identified in the attached parcel listing (Attachment A).

Following the auction, any unsold parcels will remain available for up to two years to be leased non-competitively to any qualified lessee at the minimum bid cost. Parcels obtained in this way may be re-parceled by combining or deleting other previously offered lands.

Mineral estate that does not get leased after an initial offering, and is not leased within a two year period, must go through a competitive lease sale process again prior to being leased.

The act of leasing does not authorize any development or use of the lease lands, without further application and BLM approval.

The BLM may receive future Applications for Permit to Drill (APDs) for those parcels that are leased. When an APD is received, BLM will conduct additional site-specific NEPA analysis before deciding whether to approve the permit.

2.2 PREFERRED ALTERNATIVE:

The Kremmling Field Office proposes to offer for lease three parcels totaling 2,244.87 acres in the May 2013 Colorado Competitive Oil and Gas Lease Sale. Parcel 6563 has been deferred due to sage grouse and cultural concerns. Half of parcel 6596 has been deferred due to high priority sage-grouse habitat. The deferral process does not necessarily withdraw a parcel from the leasing arena, but merely indicates that further analysis is needed before possibly being reintroduced in a future lease sale. Parcels 6561, 6562, which total 2,164.87 acres are federal lands administered by the BLM located in Larimer County, Colorado (See Attachment F). Parcel 6596 is 80 acres of split-estate land, located in Jackson County, Colorado; and the surface is administered by the State Land Board (See Attachment F). The three parcels would be offered at public auction. Each lease would be issued subject to stipulations identified in the attached parcel listing (Attachment C). Following the auction, any unsold parcels could be sold non-competitively.

2.3 NO ACTION ALTERNATIVE:

The BLM NEPA Handbook (H-1790-1) states that for Environmental Assessments (EAs) on externally initiated Proposed Actions, the No Action Alternative generally means that the Proposed Action would not take place. In the case of a lease sale, this would mean that an expression of interest to lease (parcel nomination) would be denied or rejected.

The No Action Alternative would withdraw these four new lease parcels from the May 2013 lease sale. The parcels would remain available for inclusion in future lease sales. Surface management would remain the same and ongoing oil and gas development would continue on surrounding private, State, and Federal leases.

No mitigation measures would be required as no new oil and gas development would occur on the unleased lands. No rental or royalty payments would be made to the Federal government. It is not expected that demand would decrease. It is likely that continuing demand would be addressed through production elsewhere.

It is an assumption that the No Action Alternative (no lease option) may result in a slight reduction in domestic production of oil and gas. This would likely result in reduced federal and state royalty income. Oil and gas consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demographics, and weather or climate. If the BLM were to forego its leasing decisions and potential development of those minerals, the assumption is that the public's demand for the resource would not be expected to change. Instead, the resource foregone would be replaced by other sources that may include a combination of imports, fuel switching, alternative fuels, and other domestic production.

2.4 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:

None

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 CUMULATIVE EFFECTS ANALYSIS ASSUMPTIONS:

Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as “...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Table 1 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action.

The CEQ states that the “cumulative effects analyses should be conducted on the scale of human communities, landscapes, watersheds, or airsheds” using the concept of “project impact zone” or more simply put, the area that might be affected by the proposed action. For this project, the area considered was the Natural Resources Conservation Service (NRCS) 6th Level Watershed. However, the geographic scope used for analysis may vary for each cumulative effects issue and is described in the Affected Environment section for each resource.

Offering the subject parcels for lease, and the subsequent issuance of leases, in and of itself, would not result in any cumulative impacts. The Kremmling Resource Area ROD/RMP (1984) and the Colorado Oil and Gas Leasing & Development Final EIS/Plan Amendment (1991) provide cumulative effects analysis for oil and gas development based on the reasonable, foreseeable oil and gas development scenario. This analysis is here by incorporated by reference. The offering of the proposed lease parcels is consistent with that analysis.

Past Actions

The primary past actions for the Larimer County parcels are recreational use and the development of communication sites and their infrastructure (powerlines). The recreational use includes guided horseback riding, camping and hunting. Grazing has occurred on both parcels for multiple years. There was a fire on Bull Mountain in Larimer County in the past. Water developments for wildlife and cattle have been constructed on the Jackson County parcel. In the past in Larimer County, there were active oil and gas leases within T. 11 N., R. 76 W. that were subsequently developed; five oil and gas wells were drilled, all five were abandoned. The situation is similar in the proposed Jackson County Parcel. There was no production at either of these locations. Currently there are no active oil and gas leases in T. 9 N., R. 77 W. Sec 7, however there were four wells drilled in the past, all have since been abandoned.

Present Actions

Currently there are no active oil and gas leases or producing wells in the immediate proximity of the proposed parcels in Larimer County or in Jackson County. Cattle grazing and recreation continue to occur. Weed infestations are being treated. The area to the east and south of the Larimer County parcels are beginning to see some dispersed residential development.

Reasonably Foreseeable Future Actions

Grazing and recreation are expected to continue and the communication site will continue to be used. Oil and gas exploration continues sporadically in both counties. According to the Reasonable Foreseeable Development report (RFD), there is low potential in Larimer County and low potential in the location of the Jackson County parcel. With new technology, however, development may occur where it would not have in the past. Speculative development is also possible as little oil and gas data from Larimer County exists.

Table 1. Past, Present, and Reasonably Foreseeable Actions

Action Description	STATUS		
	Past	Present	Future
Livestock Grazing	X	X	X
Recreation	X	X	X
Invasive Weed Inventory and Treatments		X	X
Spring or Water Developments	X	X	X
Oil and Gas Development: Well Pads Access Roads Pipelines Gas Plants Facilities	X		X
Power Lines	X	X	X
Vegetation Treatments	X	X	X

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 environmental assessment (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 2 lists the resources considered and the determination as to whether they require additional analysis.

Table 2. Resources and Determination of Need for Further Analysis

Determination ¹	Resource	Rationale for Determination
Physical Resources		
PI	Air Quality	See the Air Quality Section.
PI	Geology and Minerals	See Geology Section.
PI	Soil Resources*	See the Soils Section.

Determination¹	Resource	Rationale for Determination
PI	Surface and Ground Water Quality*	See the Water Quality Section.
Biological Resources		
PI	Wetlands and Riparian Zones*	See the Water Quality Section.
PI	Vegetation*	See the Vegetation Section
PI	Invasive, Non-native Species	See the Invasive, Non-native species section
PI	Special Status Plant and Animal Species*	See the Special Status Plant and Animal Species Section.
PI	Migratory Birds	See the Migratory Birds Section.
PI	Aquatic Wildlife*	See the Aquatic Wildlife Section.
PI	Terrestrial Wildlife*	See the Terrestrial Wildlife Section.
Heritage Resources and the Human Environment		
PI	Cultural Resources	See the Cultural Resources Section.
PI	Paleontological Resources	See the Paleontological Resources Section.
NI	Native American Religious Concerns	Tribal consultation was initiated on August 21, 2012. Tribal consultation with the five affiliated tribes has identified areas adjacent to the Bull Mountain lease area that contains traditional cultural properties (TCP's) that would be affected by leasing the nominated parcels. Under the preferred alternative, those areas would be deferred from leasing and thus not affected. No known TCP's are located within the parcel in Jackson County.
PI	Visual Resources	See the Visual Resources Section.
NI	Hazardous or Solid Wastes	There are no known quantities of wastes, hazardous or solid, located on BLM-administered lands in the proposed lease sale parcels, and there would be no wastes generated as a result of the Proposed Action or No Action alternative. A determination will be made as to whether solid or hazardous wastes have been previously used, stored, or disposed of at proposed oil and gas construction sites at the time individual APDs are submitted.
NP	Fire Management	The proposed action and the no action alternative do not affect fire management.
PI	Social and Economic Conditions	See the Social and Economic Conditions Section.
NI	Environmental Justice	According to the most recent Economic Census Bureau statistics (2009), there are minority and low income communities within the Kremmling Planning Area. There would be no direct impacts to these populations.
Resource Uses		
NI	Forest Management	Although trees may be cut if development of leases occurs in forested areas of the Larimer County parcels, management of forest

Determination ¹	Resource	Rationale for Determination
		and woodland resources, overall, would likely be only marginally affected. If it is necessary to cut trees in order to develop leases, lessees would be required to obtain a contract, and pay for trees to be cut, prior to cutting trees.
PI	Livestock Grazing Management	See the Livestock Grazing Management section.
NI	Floodplains, Hydrology, and Water Rights	Water Resource concerns are addressed in the Water Quality, Soils, and Wetland Sections of this document. Floodplains and flood hazards would not be impacted by the proposed leases. Water rights are administered by the state of Colorado. It is the lessee's responsibility to obtain legal water sources necessary for lease development and to adhere to state laws that protect existing water rights.
NP	Realty Authorizations	There is a right-of-way for a BLM road (COC-60651) and an electric line granted to Mountain Parks Electric (COC-53877) in the location of the proposed leases in Larimer County. Neither would be affected by the proposed action or the no action alternatives.
PI	Recreation	See the Recreation section.
PI	Access and Transportation	See the Access and Transportation section.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.
NP	Lands with Wilderness Characteristics	The Proposed Action area was inventoried for Wilderness Characteristics in 1979 and reviewed in 2009. The area does not possess Wilderness Characteristics.
Special Designations		
NP	Areas of Critical Environmental Concern	There are no Areas of Critical Environmental Concern within the proposed lease areas.
NP	Wilderness	There is no Wilderness or Wilderness Study Areas within the area of the Proposed Action.
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers in the KFO.
NP	Scenic Byways	There are no Scenic Byways within the 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.

* Public Land Health Standard

3.2 AIR QUALITY AND CLIMATE CHANGE

Air pollution control programs are based on a combination of federal and state legislation. The Clean Air Act (CAA) is the primary federal legislation; additional state air quality management authority is based upon state legislation. The U.S. Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for several different pollutants, which are often referred to as criteria pollutants, including ozone, nitrogen dioxide, carbon monoxide, sulfur dioxide, suspended particulate matter, and lead. Standards for suspended particulate matter have been set for 2 size fractions: inhalable particulate matter (PM₁₀), and fine

particulate matter (PM_{2.5}). Additionally, Hazardous Air Pollutants (HAPs), which are suspected to cause cancer or other serious health effects, are regulated under the Clean Air Act (CAA); however, ambient air quality standards have not been set by the EPA.

The Colorado Air Quality Control Commission (CAQCC) has adopted state ambient air quality standards that, generally, are equal to current or former federal standards. The Air Pollution Control Division (APCD) of the Colorado Department of Public Health and Environment (CDPHE) implements regulatory and planning programs based upon state and federal regulations. The CDPHE issues air quality permits for many stationary sources. For stationary sources in attainment/maintenance areas, the pollutant specific uncontrolled actual emissions permitting thresholds are 200 pounds per year (Pb), 5 tons per year (PM_{2.5}, PM₁₀, VOC) and 10 tons per year (CO, SO_x, NO_x). In nonattainment areas, the thresholds are 200 pounds per year (Pb), 1 ton per year (PM_{2.5}, PM₁₀), 2 tons per year (VOC), and 5 tons per year (CO, SO_x, NO_x). However, CDPHE does not issue permits for mobile sources or for portable and stationary sources that emit less than the threshold quantities of regulated pollutant. The CAA, as well as FLPMA, requires the BLM and other federal agencies to comply with local, state, Native American tribal, and other federal agencies air quality standards and regulations. FLPMA further directs the Secretary of the Interior to take any action necessary in order to prevent unnecessary or undue degradation of the lands [Section 302 (b)], and to manage the public lands “in a manner that will protect the quality of scientific, scenic, historical, ecological, environmental, air and atmospheric, water resource, and archeological values” [Section 102 (a)(8)].

The Intergovernmental Panel on Climate Change (IPCC) has stated, “Most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic [man-made] GHG concentrations” (IPCC 2007). The general consensus is that as atmospheric concentrations of greenhouse gases (GHGs) continue to rise, average global temperatures and sea levels will rise, precipitation patterns will change, and climatic trends will change and influence the Earth’s natural resources in a variety of ways. Secretarial Order 3289 directs the BLM to address the impacts of climate change on America’s water, land, and other resources.

Affected Environment: The proposed lease parcels are located in two distinct areas- the North Park Basin (lease 6596) and in the Bull Mountain area of Larimer County. Currently, the Bull Mountain area and the North Park area have no identified air quality concerns, and based on known general emission levels and information on the areas, are considered likely to be meeting air quality standards. Bull Mountain is within a small isolated geographic area known as the Laramie River Valley, with no developed industry and a few private hay ranches and small communities near the mouth of the valley. North Park is bordered by three designated air quality management areas which are Prevention of Significant Deterioration (PSD) Class I areas. Prevalent winds are to the northeast for both areas. Air quality and/or visibility monitoring stations are located west or south of the leases, with no specific data in the areas surrounding the leases. Based upon the general existing data, PM (primarily in the form of fugitive dust during wind events) and regional ozone are the pollutants of concern for the leases, especially in the North Park area. Emission of NO_x and VOCs, while unlikely to create localized air quality problems within the general area, are also of concern due to their role in regional ozone formation as precursor gases. The Rawah Wilderness Area (a Class I Area) is located three

miles to the northeast of lease 6596 and five miles from the southwestern boundary of the Bull Mountain parcels. Due to the prevailing winds, there is less of a chance of the Bull Mountain leases impacting the Wilderness Area's air quality.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The actual sale of the lease would have no direct impact on air quality or climate change. Future lease exploration and development activities could produce PM₁₀, PM_{2.5}, nitrogen oxides, volatile organic compounds (VOCs), carbon monoxide, sulfur oxides, and greenhouse gas (GHG) pollutants due to vegetation removal, vehicle travel on paved and unpaved roads, and energy development. Fuel combustion in vehicle engines and equipment produce reactive organic compounds, nitrogen oxides, carbon monoxide, PM₁₀, PM_{2.5}, and GHG emissions. Vehicle travel on unpaved roads generates fugitive dust that contains PM₁₀ and PM_{2.5}. The clearing of vegetation from roads and pads results in increased wind erosion from un-reclaimed surfaces, producing PM₁₀ and PM_{2.5}. If the area is for natural gas development, gas may be flared and/or vented to evaluate the characteristics and potential of the resource available. Volatile organic compounds (VOCs) would also be released from the reserve pit or tanks during drilling and completion activities.

The potential air quality impacts are very dependent on which lease parcels are developed, if any, and to what extent and where that development occurs. Even with these increased pollutants, development of only the offered lease parcels is unlikely to contribute to a violation of the ozone NAAQ. This conclusion is based on the cumulative CAMx modeling done for the CRVFO DRMP analysis, and it included the cumulative maximum emissions from the KFO and provided a domain large enough to assess potential impacts within the KFO boundaries. If any one or all of the parcels were to be developed, it is unlikely that any measurable impact to climate change would occur. If lease 6596 is proposed for development, the distance to the Rawah Wilderness Area and the high wind erodibility index for the mapped soil indicates that more specific air quality analysis and modeling may be appropriate at the APD level. The APD stage of the leasing life cycle is the appropriate time to perform such analysis when specific locations and designs could be used in predictive near field and far field models. The Bull Mountain leases are more remote, but BLM would conduct more site specific air analysis for any proposed lease development to determine possible air quality impacts. Any proposed lease development would be subject to applicable local, State, and Federal air quality laws and regulations. Additional conditions of approval (COA) could be applied at the development stage to help reduce emissions and to protect air quality. Any operator commitments for utilizing better controlled equipment, BMPs, other process technologies as analyzed in any subsequent future development scenario would become a COA for authorizing such actions.

Cumulative Effects: At present time, there are widely dispersed emissions in the Laramie River Valley due to a few wood burning stoves, vehicle emissions, dust from off road and unpaved road travel, and livestock. Future emissions could include wildfire emissions, similar to the two fires that occurred during the summer of 2012 in the area. Wildfires can contribute large amounts of reactive organic compounds, nitrogen oxides, carbon monoxide, PM₁₀, PM_{2.5}, and GHG emissions but are generally a shorter duration emission with few long-term impacts to air quality. The additional development of the proposed leases would be unlikely to result in air quality concerns for the immediate area or for a wider area. This conclusion is based on the cumulative CAMx modeling done for the CRVFO DRMP analysis, and it included the

cumulative maximum emissions from the KFO and provided a domain large enough to assess potential impacts within the KFO boundaries. The North Park lease is located near other oil and gas activity, and has a greater potential to have future increases in energy development on existing leases or future leases.

Due to the potential to impact the Rawah Class I area, additional monitoring would be required in conjunction with environmental analysis (in accordance with NEPA) prior to authorization for any development on lease 6596. Monitoring may be required once specific leased parcels are proposed for development in the Bull Mountain area. COAs may need to be required for specific projects based upon the site specific analysis, as well as on analysis from other modeling that may be completed in the future.

Research has identified the general potential impacts of anthropogenic greenhouse gas emissions and their effects on global climatic conditions. These anthropogenic GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and several trace gases which differentially absorb and emit thermal radiation in the atmosphere and therefore may contribute to climate change. Current research on climate change impacts is an emerging and rapidly evolving area of science, and given the lack of adequate analysis methods, it is not possible to identify reasonably foreseeable local, regional, or global climate change impacts based on assumed potential GHG emissions. Changes in global temperatures and climate vary significantly with time, and are subject to a wide range of driving factors and complex interrelationships, the level of GHG emissions can generally be quantified and compared to overall estimates to provide some measures of the level and significance of any potential impacts. Oil and/ or gas may be developed and produced as part of the proposed lease sale and subsequently utilized to produce energy. The specific GHG impacts associated with the development of the oil and gas resources would be addressed in a subsequent environmental analysis.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on air quality and climate would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to air quality and/or climate change due to these parcels not being leased for energy development.

Mitigation: None

3.3 GEOLOGY AND MINERALS

Affected Environment: The nominated Laramie County parcels are within an area classified as having oil and gas potential rating 1, meaning that there is no potential for oil and gas development; based on: absence of source rock, thermal maturation, or reservoir rock prohibiting oil and/or gas occurrence. The nominated Jackson County parcel is within an area classified as having oil and gas potential rating 2, meaning that there is low potential for oil and gas

development based on: specific indications that one or more of the following are not present: source rock, thermal maturation, or reservoir strata possessing permeability and/or porosity, and traps. The vast area of the North Park Basin is covered with the early Tertiary sediments of the Coalmont and North Park Formations.

The Dakota Sandstone will probably be a fresh water aquifer. Other formations such as the Morrison, Sundance, Jelm and Chugwater Formations may also contain fresh water. Hydrocarbons should be encountered in the Casper sands. Other formations may also contain hydrocarbons in uneconomic quantities.

Geologic formations and site specific geology would be identified during the Application for Permit to Drill (APD) NEPA process. At that time, fresh water and hydrocarbon zones that may be penetrated by the well bore would be protected by the best management practices identified in the 8 point drilling plan (in the APD) and as applied in the field during the drilling, production and abandonment phases of the well.

Approximately 200 mining claims were staked in T. 11 N., R. 76 W. of Laramie County, between 1977 and 1978, all have since been closed, none were within the sections of the proposed parcels. There are no historic or current mining claims in T. 9. N., R. 77 W., Sec. 7 of Jackson County.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Sale of the parcels would allow development and recovery of oil and natural gas resources in the underlying oil and gas bearing formations. During drilling operations on the parcels, loss of circulation or problems cementing the surface casing may affect freshwater aquifer zones encountered. The KFO ensures the submitted APD would contain a casing and cementing program adequate to protect all of the resources, minerals, and fresh water zones, 43 CFR §3162.5-2(d).

Cumulative Effects: There would be no change to cumulative effects on mineral resources. If the proposed lease parcels are sold and developed, the development and drilling of lease wells would likely further deplete the hydrocarbon resources of the targeted formations.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: Fewer parcels would be available for sale than under the Proposed Alternative. However, parcels sold under the Preferred Alternative would allow development and recovery of oil and natural gas resources in the underlying oil and gas bearing formations. During drilling operations on the parcels, loss of circulation or problems cementing the surface casing may affect freshwater aquifer zones encountered. The KFO ensures the submitted APD would contain a casing and cementing program adequate to protect all of the resources, minerals, and fresh water zones, 43 CFR §3162.5-2(d).

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: If the lease parcels were withdrawn from the current lease sale, recoverable natural gas and oil resources in the oil and gas bearing formations would not be developed at this time. Oil and gas would not be available to the national economy.

Cumulative Effects: There would be no cumulative effects on mineral resources. If the proposed lease parcels are sold in the future, the development and drilling of lease wells would likely further deplete the hydrocarbon resources of the targeted formations.

Mitigation: None.

3.4 SOIL RESOURCES

Affected Environment: The following soil information is from the Natural Resource Conservation Service's (NRCS) Larimer and Jackson County Soil Surveys. Reviewing what the potential soil types are within the proposed leases and how surface disturbances similar to lease development affect these soils help identify the potential soil impacts and needed conditions of approval to protect long-term soil health under the Proposed Action, Preferred Alternative, and No Action Alternative.

The proposed leases in Larimer County are mapped as primarily Redfeather sandy loams, 5-50% slopes. These soils are formed in weathered granite. The forested soils generally have a duff layer protecting the soil surface from wind and water erosion. The hazard of soil loss from unsurfaced roads in this soil is rated "severe", due to the slope and erodibility of the soil. The NRCS rates the soil being very limited for shallow excavations (less than five feet deep), due to the shallow depth to hard bedrock and steep slopes. The "very limited" rating indicates the soil would perform poorly and require high maintenance levels if excavated. This shallow depth to bedrock results in a high runoff potential, placing the soil in hydrologic soil group D. The soil has a low tolerance to erosion without compromising its long-term productivity.

Another soil mapping unit that covers several acres within the proposed leases is the Sunshine stony sandy loam, 5-15% slopes. The soil is formed in material from weathered sandstone. The mapping unit is also rated as being very limited in constructing shallow excavations due to the large stones. It has a moderate erosion rating from unsurfaced roads, with moderate slope and erodibility concerns. Sunshine soils have a moderate tolerance to erosion without affecting its productivity. The other large soil mapping unit occurs in lease parcel 6561, where shale outcrops occur. The Kildor clay loam, 0-6% slopes, and Kildor-shale outcrop, 5-30% slopes are mapped in the center of Section two. Although the shale outcrop (40% of the complex) is not evaluated for shallow excavations, the clay loam has some limitations primarily due to the shallow depth to soft bedrock. The clay loams have only slight erosion hazards for natural surfaced roads, but the steeper complex mapping unit has severe ratings due to the slope and erodibility. The soils have a slow infiltration rate when thoroughly wet, and are in hydrologic soil group C. The clay loams have a moderate tolerance to soil erosion, while the complex is not rated. All three soil mapping units have high wind erosion hazards, with a wind erodibility index of 86 tons/acre/year.

The western portion of lease parcel 6563 has over 300 acres that are mapped as Haploborolls-Rock Outcrops. The mapping unit is only included in the Proposed Alternative and is deferred from leasing in the Preferred Alternative. The mapping unit is steep and is rated "very limited"

for shallow excavations due to the slope, depth to soft bedrock, and large stones. It is poorly suited for natural surface roads also due to the slope, and has a “severe” rating for erodibility for roads and trails due to the slope and soil erodibility. It has a moderately high runoff potential, placing the soil portion of the mapping unit into hydrologic soil group C. The soil has a fairly high tolerance to erosion without compromising its long-term productivity. The deferred leases also include soil mapping unit Miracle sandy loams, 5-25% slopes. This soil unit has similar limitations for use as the Haploborolls, although it has “moderate” erosion hazards for roads and trails. It is also more sensitive to soil erosion losses and overlies a hard rather than soft bedrock.

Using the Soil Survey, the proposed Larimer County lease parcels have the following soil mapping units. Digital elevation maps were used to estimate the percent of the lease with steep slopes (slopes greater than 40%), where a Controlled Surface Use (CSU) stipulation for steep slopes would be applied to the lease.

Table 3: Soil Type and Slope of Proposed Lease Parcels in Larimer County

	Redfeather sandy loam, 5-50% slopes	Sunshine stony sandy loam, 5-15% slopes	Haploborolls-Rock outcrop complex, steep	Kildor-Shale outcrop complex, 5-30% slopes/ Kildor clay loam, 0-6% slopes	Percent of the lease acreage with slopes greater than 40%.
Parcel 6563	20%	34%	21%	0%	53%
Parcel 6562	95%	5%	0%	0%	6%
Parcel 6561	77%	0%	0%	12% / 3%	30%

The Jackson County lease parcel is mapped as mostly Bangston fine sand, 1-10% slopes, which formed in Aeolian sands. The soils have a high tolerance to erosion with losing long-term productivity, but they also have a high wind erosion hazard, with a wind erodibility index of 250 tons/acre/year. The soils have high limitations for shallow excavations due to cutbanks caving in. They have moderate limitations for natural surfaced roads due to slopes and erodibility. McNally Creek also supports cryaquent soils along its floodplain. These wetland soils formed in recent alluvium and would generally be avoided during any lease development. The parcel’s northeast corner is mapped as having a clay loam soil (9% of the parcel) which formed in weathered shale. The soil has some limitations for shallow excavations, primarily due to slope. It has severe limitations for natural surface roads due to the slope and erodibility. The soil’s fine texture results in good plant available moisture. The parcel is gently sloping, with only a small band (less than two acres) of the parcel having slopes above 40% in the Preferred Alternative, and about nine acres under the Proposed Alternative.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: If the proposed leases are sold, the actual amount of soil disturbance and the locations of the disturbance associated with lease development will determine the expected soil impacts. Development could involve the construction of access roads and well pads, with possible reserve pits on the pads. Offsite impacts, if any, are also difficult to

determine until lease development information is known. Typical offsite impacts could involve increased road traffic, fugitive dust, runoff from lease disturbances, including petroleum contamination to offsite soils. The leases would have CSU CO-27 applied, which would require an engineering/reclamation plan prior to surface disturbances of slopes greater than 40 percent. The surface plan is intended to address reducing soil erosion, slope failure, and protecting the long-term site productivity. During the APD stage, additional conditions of approval might be needed to reduce soil loss from the construction and use of roads and drilling pads on slopes less than 40 percent and on highly erodible soils. For example, as duff and vegetation layers are removed, all of the parcels are particularly vulnerable to wind erosion.

Cumulative Effects: The Larimer County parcels are within an area that had a wildfire in the early 1970s, salvage logging that continued into the 1980s, livestock grazing, and recreational use, especially during the hunting seasons. There have been a few wildcat wells drilled in the area, but there are no nearby producing wells. Small site specific areas have had accelerated soil loss, primarily due to animal trails and user created roads channelizing runoff down a slope. Overall, however, the soils are protected by good vegetative cover, especially within the forested areas. The cumulative effects of leasing these parcels are dependent on the actual amount of development and the locations of surface disturbances.

The Jackson County lease parcel is an area of active oil and gas development, but both past and recent wells have been mostly downstream of this lease. The Proposed lease parcel does not have any wells or roads to wells located upgradient of it. If the proposed lease is developed, it would not be directly upgradient of any existing wells, lessening the potential cumulative offsite soil impacts.

Environmental Consequences of the Preferred Alternative:

The direct and indirect effects of the Preferred Alternative on soil resources would be similar to those described under the Proposed Action. The parcel 6563 would not be leased, which removes several acres of steep slopes and rock outcrops and reduces potential surface impacts. . It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative, the proposed parcels would not be leased for oil and gas development. Until, and unless, another land use or action is proposed for these areas, present conditions would be expected to continue. Soils would not experience any new surface disturbances.

Mitigation: None.

Finding on the Public Land Health Standard #1 for Upland Soils: The Jackson County parcel has not and will not be assessed for land health standards since the surface is owned by the state of Colorado. The Larimer County parcels have been assessed for Standard #1 and are considered to be meeting the Standard. The proposed leasing of the parcels for energy development may affect the upland soils, but not necessarily prevent them from continuing to meet the Standard. As the leases are proposed for development, the site specific plans will determine actual soil

impacts. Conditions of approval would be designed to maintain the areas' ability to continue to meet the Standard on a landscape scale and to lessen site specific impacts.

3.5 SURFACE & GROUND WATER QUALITY

Affected Environment: The proposed leases are all located in the North Platte River basin, with the Jackson County lease within the Canadian River 5th order watershed, and the Larimer County leases within the Laramie River and the Sand Creek 5th order watersheds. The following table summarizes the proposed leases and their known surface water and water quality concerns.

Table 5: Surface Water and Water Quality Status of Proposed Lease Parcels

Lease	Water on Lease	Runoff Pathway	Water Quality Status
6561	Shell Creek, Shell Creek Spring	North- Shell Creek, in Wyoming, Shell Creek to Spring Creek, to Sand Creek South- to Frenchwoman Creek, to Jimmy Creek, to the Laramie River	Designated for Aquatic Life, coldwater 1 Primary Contact Recreation, Water Supply, and Agriculture. Considered to be fully supporting these uses. Laramie River near the Wyoming state line- E. coli levels exceeded for primary contact recreational use. All other stream segments - supporting designated uses.
6562	Bluebell Creek, Rocky Draw Spring	Bluebell Creek to Frenchwoman Creek, to Jimmy Creek, to the Laramie River	Designated for Aquatic Life, coldwater 1 Primary Contact Recreation, Water Supply, and Agriculture. Considered to be fully supporting these uses. see Lease #6561 for Laramie River status
6563	Down Timber Spring	Down Timber area- to Bluebell Creek Whiskey Springs area- to Horse Pasture Spring to the Laramie River	See Lease #6562 (Colorado) status. see Lease #6561 for Laramie River status
6596	McNally Creek	McNally Creek to the Canadian River	McNally Creek and the Canadian River are classified for aquatic life,

			<p>coldwater 1, water supply, primary contact recreation, and agriculture uses.</p> <p>The Canadian River is on the Monitoring and Evaluation List for Fe (Dis), and E. coli concerns.</p>
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The Canadian River’s high dissolved iron concentrations are due to the underlying Coalmont formation which is rich in iron. Iron concentrations are assumed to be caused by contributing groundwater and sediment loads, which may or may not be elevated due to land uses. The Monitoring and Evaluation List is for those waters where impairment is suspected, but additional data is needed to determine if a 303(d) listing is really warranted. There are no known water quality data for McNally Creek, and limited data on the Canadian River.

Groundwater quality is not well known, but is assumed to be fully supporting agricultural uses. There are two developed springs, Shell Creek and Down Timber, within the proposed leases. Horse Pasture Spring is a developed spring about a half mile downstream from lease parcel 6563. The springs are used for livestock and wildlife water. There are private wells downstream from the Larimer County proposed leases near the Laramie River and Jimmy Creek for private ranches and a commercial dude ranch, generally between 0.9 to 2.0 miles from the leases’ southern boundaries.

There are also two domestic wells that are approximately 1,400 feet southwest of the SW corner of lease parcel 6596 in Section 13 (Township 9 N., Range 78 W.). The wells are only 100 feet deep and have reported static water levels of 15 and 20 feet. Due to past oil and gas activities and studies, there are some groundwater quality data down-gradient from the proposed parcel, although the data is generally northwest of the parcels and are located in the Coalmont formation. There are also two irrigation diversions downstream of the proposed lease on McNally Creek.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Lease development’s potential impacts to surface water quality are generally associated with the amount and location of surface disturbances, and the potential to increase runoff and sediment loading in streams. Removal of vegetation and duff layers expose soil to water erosion, creating runoff pathways that transport sediment to surface waters. Surface disturbances such as road construction also increase the amount of impermeable surfaces (compaction), which increase the amount of runoff and can shorten runoff pathways. Transport of chemicals and products could potentially affect water quality anywhere along the route if accidental discharges were to occur. The proposed leases would all have the CSU CO-28 applied, which moves development beyond the riparian vegetation zone. This allows the riparian vegetation to act as a buffer strip of undisturbed vegetation to encourage sediment deposition within the floodplain and to not reach surface waters. In areas of steep slopes, CSU CO-27 would be applied to require a plan that controls erosion and promotes good revegetation for surface disturbances. This reduces soil transport from disturbances, which indirectly protects water quality. Depending on the actual proposed lease development and locations, additional

conditions of approval could be applied following site specific NEPA analysis to further protect surface water quality.

Due to the actual runoff pathways and distances, most disturbances would be less likely to affect downstream receiving waters, such as the Laramie River, than potentially the immediate drainages. The Canadian River, however, is within a half mile of the downgradient corner of lease 6596, so if surface water quality was impacted, there is a greater possibility of impacts being transported to the Canadian River.

Surface disturbances on lease parcel 6596 would not be likely to result in iron-rich sediment loads, as the soil did not form over the Coalmont formation, which is more dominant on the south side of the Canadian River. E. coli concentrations would not be directly increased by energy development, but could be indirectly increased if increased runoff and erosion reach surface waters, assuming the soils currently have high E. coli levels. Stormwater controls could be applied at the lease development stage to help keep runoff from reaching live waters.

Impacts to groundwater could occur due to failure of well integrity, failed cement, surface spills, and/or the loss of drilling, completion, and hydraulic fracturing fluids into groundwater. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator and location specific. Concentrations of these additives also vary considerably and are not always known since different mixtures can be used for different purposes in gas development and even in the same well bore. There are no available lease stipulations to protect groundwater quality. Seeps' and springs' immediate source areas are protected by the CSU CO-28 for riparian/wetland areas by moving disturbances away from the source to outside the wetland vegetation. During the APD stage, all potential freshwater zones are identified in the drilling plan, along with known wells and springs. The BLM's and state's development requirements for the well's casing, cementing, testing, and reporting help protect all freshwater zones that could be impacted by drilling operations, reducing the likelihood of groundwater impacts. Additional conditions of approval could be applied at the lease development stages to increase the protection to the developed springs, undeveloped seeps, and overall groundwater quality and uses, such as requiring closed loop systems and the use of green fluids during drilling operations.

Cumulative Effects: Water quality impacts to the Laramie River drainages are primarily associated with animal use- both livestock and wildlife- and recreation. The lease parcels are within an area that is very popular for big game hunting, with several hunting camps and user created trails in the area. These uses may result in some increased streambank erosion and sediment transport due to trails and vegetation removal, generally in small localized areas. The North Park parcel is within an area that is primarily impacted by agricultural uses. Non-motorized recreation does occur in the higher elevation state forest lands, but with no known measurable impacts to water quality. Leasing the parcels would increase the amount of surface disturbance and could lead to increased erosion, potentially impacting surface water quality, depending on the actual amount and location of the development. Additional drilling could occur within the Canadian River drainage, outside of the proposed lease parcel, with some potential increases in sediments reaching the stream. Depending on the geology of the areas

drilled, the amount of development, and the location of development, iron loads could also increase in the Canadian River.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on surface and ground water quality would be similar to those described under the Proposed Action with fewer acres tributary to the Laramie River. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative, the existing surface and ground water quality would likely continue. The proposed leases would remain as primarily agricultural land (North Park) or forest with recreational and animal uses (Laramie River).

Mitigation: None

Finding on the Public Land Health Standard #5 for Water Quality: The Bull Mountain leases are considered to be meeting the land health standard for water quality, with concerns being limited to improving animal distribution. Livestock tend to concentrate in the riparian areas and there is some streambank trampling and trailing that could add to stream sediment loads, impacting the water quality. The Proposed Action could have some impact to water quality, but is not expected to keep the area from being able to meet the standard. The North Park lease is not located on BLM lands and has not been evaluated for the standard. The Proposed Action could impact water quality, but would not be expected to keep the area from being able to meet or move towards meeting the standard. Under the No Action Alternative, both areas would be able to meet or move towards meeting the standard.

3.5 WETLANDS AND RIPARIAN ZONES

Affected Environment: BLM field information, aerial photographs, and the National Wetland Inventory (NWI) were used to identify possible wetland areas within the proposed leases. Lease 6561 contains a confined segment of Shell Creek. This segment supports an aspen/willow/alder community with a grass understory. Livestock use tends to be moderate to high where the riparian zone is easily accessible. Steep slopes and downed trees help protect areas from animal grazing. Shell Creek Spring is a small spring (~ 2 gpm) that supports a small wetland area with a willow/alder/dogwood overstory and grass understory.

Parcel 6562 contains a portion of Bluebell Creek, a small riparian area with an aspen overstory in the lower segment and a willow/grass community throughout. The NWI maps approximately 2.5 acres of Bluebell Creek as a PEMC- palustrine, emergent, seasonally flooded wetland. There is no wetland information for Rocky Draw Spring. Down Timber Spring in parcel 6563 is on the edge of an aspen grove, and as presently developed, supports a small sedge wetland area below the overflow. In the Proposed Alternative, approximately 3.5 acres of Whiskey Springs would be leased. The NWI maps the area as a PEMC wetland also. The NWI maps parcel 6596 as

having 2.3 acres of PSSA- palustrine Scrub-Shrub temporarily flooded wetlands, and four acres of palustrine emergent seasonally flooded wetlands along McNally Creek, and having a small portion of a PEMB- palustrine emergent saturated wetland within the lease.

The proposed parcels are located high in the drainage. Moving downstream of the parcels, the acreage of wetlands, duration of flooding, and diversity of wetland types increase. Parcel 6596 is located just outside of the Canadian River floodplain, and has a short distance to these larger wetland areas.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Lease development generally avoids wetland areas, resulting in few direct impacts to wetlands. Stipulation CSU CO-28 would be applied to all wetland areas within the leases, moving roads, pads, and other surface disturbances to outside of the wetland vegetation zone. Indirect impacts to riparian areas could occur from increased sediment loads travelling to and being deposited within a wetland, increased dust deposition on wetland vegetation, or increased animal use within a wetland due to displacement from a developed area. At the APD stage, additional conditions of approval would be applied to access roads and development plans to further reduce the potential impacts to wetland areas. Depending on the location and amount of development, there could still be some unavoidable impacts to riparian or wetland areas, especially in a smaller parcel with more wetland acreage such as 6596.

Cumulative Effects: The Laramie River wetland areas within the proposed parcels are primarily impacted by animal use, which can result in direct impacts of vegetation trampling and removal. Although it is dependent on the actual amount of energy development on the leases, additional direct impacts to the wetland areas would not be anticipated. Increased dust from surface disturbances could be deposited on wetland areas, with the forested areas reducing the transport distances. Surface disturbances could also result in more sediment loads being deposited within the wetlands and depending on access, there could be potential contamination from spills reaching wetlands within or outside of the leases. Some increased animal use could occur if animals are displaced by the energy development in the uplands. Reclaimed upland surface disturbances, until trees reestablish, could provide additional forage for animals, helping reduce pressure on the wetlands.

The lands within and around parcel 6596 are primarily used for agricultural purposes, with irrigated meadows and grazing. Energy development could impact wetland areas, including those along the Canadian River, by more traffic creating dust and a higher potential for possible contamination if there was a spill. Prevalent wind patterns would generally move dust away from the floodplain wetland areas and towards the State and National Forests to the northeast.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on wetland and riparian zones would be similar to those described under the Proposed Action. The Preferred Alternative would not lease Parcel 6563, removing Whiskey Springs and Down Timber Spring. It would also reduce the amount of McNally Creek that would be leased in parcel 6596. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to the wetlands and riparian areas from not leasing the parcels. Current uses and associated impacts would be expected to continue.

Mitigation: None

Finding on the Public Land Health Standard #2 for Riparian Systems: The wetland areas are currently considered to be meeting the standard. Better distribution of livestock to reduce utilization in the wetland areas is a concern in the Bull Mountain area. Implementing the Proposed Action could indirectly affect the wetland areas but would not be expected to affect the area's ability to continue to meet the Standard. The No Action Alternative would not affect the areas ability to meet the Standard.

3.7 VEGETATION (TIMBER)

Affected Environment: While the Jackson County Parcel 6596 does not contain any forest or woodland resources, forest dominates the landscape in two of the three Larimer County parcels (Parcel 6561 is approximately 88 percent forested, and Parcel 6562 is approximately 96 percent forested). Lodgepole pine stands occupy most of the area, although aspen stands are also prevalent. Lodgepole pine stands tend to be comprised of either mature trees that are approximately 110 to 130 years old, or are young dense stands that originated following the 1971 Bull Mountain Fire. The mature lodgepole pine stands within the parcels have recently experienced a severe mountain pine beetle (MPB) infestation (within the last five to seven years), with mortality rates averaging between 80 and 95 percent. Approximately 25 percent of Parcel 6563 is forested, primarily comprised of aspen stands.

The Bull Mountain Fire burned approximately 1,400 acres of BLM-managed public land on Bull Mountain. The density of lodgepole pine trees in these young stands exceeds 10,000 trees per acre in places, and commonly exceeds 2,000 trees per acre. Tree height is variable in these young stands, usually between 10 feet and 40 feet. Likewise, diameter is also variable, ranging from one inch DBH to six inches DBH. Variability is a result of tree density and site conditions. The recent MPB infestation has impacted some of these stands although the mortality rate is pretty low. Individual, or small groups of, dead trees are scattered throughout affected stands. Dwarf mistletoe is also present in some of these stands; both in localized areas within the stands, and along edges adjacent to mature lodgepole pine stands.

In addition to being present in pure stands; aspen is found in mixed stands with a substantial component of coniferous species (usually subalpine fir and/or lodgepole pine and as a minor species within some lodgepole pine stands. Aspen stands are found within each of the parcels and make up most of the forested area in Parcel 6563. Although lodgepole pine stands comprise the majority of the forest in the other parcels, several aspen stands are located in Parcel 6561 and, to a lesser extent, in Parcel 6562. Most aspen stands escaped the Bull Mountain Fire and are in older age-classes. However, young aspen can be found within the burned areas, both as individuals or in small groups.

Other coniferous species, Douglas fir, Engelmann spruce, ponderosa pine, and limber pine are found as single individuals or in small groups within stands of the predominant species.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Impacts to forest and woodland vegetation are dependent on the amount and location of lease development. Assuming that development occurs within the forested portion of the Larimer County parcels, direct impacts would likely be limited to tree felling associated with the development of well pads and access roads. Trees immediately adjacent to well pads and access roads may be indirectly impacted from a number of factors including increased dust from development and use, soil compaction, spills of petroleum or other liquids, etc., potentially resulting in increased levels of stress on affected trees. Increased stress on affected trees would likely result in increased vulnerability to drought, insects and disease.

Cumulative Effects: Mature lodgepole pine stands within the Larimer County parcels originated in the late 1800's, the result of large, stand replacing fires and the subsequent regeneration of those areas. This area has a long history of timber harvest going back to the beginning of the 19th century when individual trees were cut for railroad ties, mine props, ranch materials, etc. Beginning in the 1950's, much of the larger diameter, sawlog quality, lodgepole pine trees were harvested. During these harvest operations, stands of smaller diameter and/or disease infested undesirables were left. Most operations were completed by the mid-1960's as there were few remaining stands containing large, sawlog-sized trees. Several stands of disease infested lodgepole pine were eliminated in 1969 and 1970 through a treatment called "chaining", whereby a large anchor chain is pulled between two bulldozers, knocking down everything in the chains' path.

Most of the harvested and chained areas were burned in the 1970 Bull Mountain fire. These areas have since regenerated as described above. In the decades following the Bull Mountain fire, harvest activities affecting forest and woodland vegetation have been limited to a few small commercial sales of forest products (primarily post and poles and Christmas trees), and the issuance of personal use permits for small quantities of those same products. Some damage to individual trees has resulted from recreational use of the area, generally a result of being trampled by motor vehicles.

Natural disturbance events (the Bull Mountain fire and the current MPB epidemic) have largely negated cumulative impacts from past and present activities on forest and woodland vegetation. Reasonably foreseeable future actions affecting forest and woodland vegetation may include salvage of beetle-killed lodgepole pine. In addition, young, overstocked lodgepole pine stands may be thinned to reduce the number of stems per acre; reducing competition for nutrients, sunlight, and water, and thereby improving the health and vigor of the remaining trees. Development of the Larimer County parcels, due to the limited number of acres of forest and woodland vegetation that would likely be impacted, is not expected to contribute substantially to cumulative effects. Cumulative impacts to forest and woodlands would be limited to those areas developed for well pads and access roads. These areas would be kept in a treeless state for the duration of oil or gas extraction. Trees would eventually become re-established once oil and gas activities are complete and sites have been reclaimed.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on vegetation (timber) would be similar to those described under the Proposed Action. Most of the area in Parcel 6563 that would be deferred under the Preferred Alternative does not contain forest and woodland resources. Therefore, there is little difference between the Proposed Action and the Preferred Alternative in the number of acres of forest that could be impacted.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to forest and woodland vegetation from not leasing the parcels. Current uses and associated impacts (firewood collection, Christmas tree cutting, post and pole cutting, recreational use, etc.) would be expected to continue.

Mitigation: None

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: The forested areas of the Larimer County parcels are meeting Land Health Standard #3 for Plant and animal communities. With high levels of mortality in the mature lodgepole pine component, however, current conditions favor early seral-stage communities over those that require mature, closed-canopy, forest conditions.

3.8 VEGETATION (RANGE)

Affected Environment: The range sites in the Jackson County Parcel 6596 consist primarily of Sandy Bench with a small amount of Mountain Meadow in the lower areas and Mountain Shale higher up. The elevation of the area is around 8200 feet, with native potential vegetation consisting of woodies such as big sagebrush (*Artemisia tridentata*), silver sagebrush (*Artemisia cana*), rabbit brush (*Chrysothamnus sp.*). Graminoids present consist of needle and thread grass (*Hesperostipa comata*), sandberg bluegrass (*Poa secunda*), and western wheat grass (*Pascopyrum smithii*). Forbs include hairy goldaster (*Chrysopsis villosa*), buckwheat (*Eriogonum umbellatum*), lupine (*Lupinus sp.*), and arrowleaf balsamroot (*Balsamorhiza sagittata*). This area has not and will not be assessed for rangeland health standards by the BLM due to the fact that the surface is owned and managed by the Colorado State Land Board.

In the open parks of parcel 6561 in Larimer County the vegetation is a mountain big sagebrush/bunchgrass steppe plant community. This plant community is dominated by Mountain Big Sagebrush (*Artemisia tridentata v. vaseyana*), bluebunch wheatgrass, (*Pseudoregularia spicata*), Fescues, (*Festuca thurberiana* and *F. idahoensis*), with an understory of Pussytoes (*Antennaria rosea*), Buckwheat (*Eriogonum umbellatum*) Agoseris (*Agoseris glauca*). Parcels 6562 and 6563 are discussed above in vegetation (timber).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Specific impacts associated with vegetation cannot be predicted at the leasing stage, however, site-specific development of COAs at the APD stage, can include

providing for rapid stabilization and restoration. Generally oil and gas development involves complete removal of vegetation and at times re-contouring of the landscape to allow resources to be retrieved. Vegetation is removed in an amount commensurate with the level of oil and gas development.

Cumulative Effects: Future oil and gas development throughout the proposed lease sale parcels would disturb soils and vegetation beyond the past and present disturbances. Most vegetation loss would be for a relatively short timeframe because successful reclamation would return desirable vegetation and ecological function to disturbed sites.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on invasive, non-native species would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative there would be no impacts to vegetation beyond those associated with existing oil and gas leases.

Mitigation: Proposed mitigation measures, including reclamation practices, are developed upon environmental analysis of a site specific APD. COAs, including reclamation/restoration procedures, are developed at the approval stage and are followed throughout the life of the development.

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: This allotment is meeting Land Health Standard #3 for Plant and Animal communities.

3.9 INVASIVE, NON-NATIVE SPECIES

Affected Environment: Currently within parcels 6561, 6562, and 6563 in Larimer County several species of noxious weeds are present, which include:

- Spotted knapweed (*Centaurea maculosa*);
- Canada thistle (*Cirsium arvense*);
- and Musk thistle (*Carduus nutans*).

A large population (15 acres) of Spotted knapweed was discovered in parcel 6563 in 2008. Since then the spotted knapweed population has been chemically treated and contained to only a few sporadic plants within the infestation area. Due to the discovery of this large infestation of Spotted knapweed all areas around this parcel were intensively inventoried/treated for invasive, noxious species. It was found that Canada thistle and Musk thistle occur only sporadically along roadsides, within past logging areas, landings, and other areas of disturbance within all parcels.

No other significant populations of invasive species greater than one acre were found within the above leasing parcels.

Currently there are no known invasive or noxious species present in Parcel 6596 in Jackson County.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Detailed direct and indirect impacts associated with Invasive Non-Native species cannot be predicted at the leasing stage, these impacts would be analyzed at the APD level in which COA's will be implemented to mitigate any potential spread of invasive, noxious species. However since there are invasive, noxious weeds present soil and vegetation disturbance from future development may increase the chances of these species to spread and outcompete the native vegetation within the parcels. Generally invasive, noxious weeds thrive in newly disturbed areas and can easily out-compete native vegetation. Oil and gas development provides avenues for invasive species to spread which include such actions as building new roads and associated pads which create vegetation and soil disturbance. Indirectly, development may introduce current or new species into the area by way of construction equipment, vehicles, and personnel in which seeds are brought into the newly disturbed areas. These types of impacts are addressed at the APD Level in which specific COA's are implemented for invasive species mitigation depending on the needs of that specific site or development.

Cumulative Effects: Future development within the proposed lease sale parcels may result in additional vegetation loss and surface disturbance therefore creating more avenues for invasive, noxious weeds to establish or spread. There is limited past and present oil and gas activity occurring within the parcel areas. The cumulative effects would have to be determined once the amount of development and associated disturbance is determined. A more accurate cumulative impact analysis would have to be addressed at the more site specific APD stage.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on invasive, non-native species would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The No Action Alternative would result in no additional surface disturbance beyond what could occur in association with current oil and gas leases on federal land, resulting in no change from the current management situation.

Mitigation: Principles of integrated pest management, including herbicide application, shall be employed to control and minimize noxious and invasive weeds. Proposed mitigation measures, including noxious and invasive weed control, would be developed upon environmental analysis of each site specific APD.

3.10 SPECIAL STATUS PLANT and ANIMAL SPECIES

Affected Environment: Federally listed threatened, endangered, and candidate species that occur in Jackson and Larimer Counties include:

- North Park phacelia,
- Canada lynx,
- North American Wolverine
- Greater sage-grouse.

In addition, Mexican Spotted Owl, and greenback cutthroat trout also occur in Larimer County. Water depletions in Jackson and Larimer Counties may affect the Western prairie fringed orchid, whooping crane, piping plover, least tern and Pallid Sturgeon.

Several BLM-sensitive animal species are known to inhabit or may be indirectly influenced from development of the proposed lease parcels, including:

- Bald Eagle
- northern goshawk
- Brewer's sparrow
- white-tailed prairie dog
- Townsend's big-eared bat
- northern leopard frog.

North Park phacelia: The proposed parcels do not contain any currently known North Park phacelia populations. Parcel 6596 and portions of 6563 and 6562 may potentially contain North Park phacelia populations since these parcels have not been previously surveyed for this plant or its associated habitat. Parcel 6596 may have a higher potential of containing North Park phacelia or its habitat since it is within the boundaries identified for possible Section 7 Consultation with the Fish and Wildlife Service. Although the closest known population is over nine miles away, the parcel may contain potential habitat for this species. The closest known population to the Larimer parcels is approximately three miles. Development in these parcels will require special status plant surveys.

Canada lynx: Parcel 6561 in Larimer Country (3,300 acres) is within the Redfeather Lynx Analysis Unit (LAU). Lynx prefer uneven-aged stands of coniferous forest with relatively open canopies and well-developed understories for their prey, snowshoe hares. Aspen and lodgepole pine are the primary forest species within this parcel. In Colorado, lynx appear to be restricted to extremely isolated areas of the mountains in the central portion of the state, and would likely use Parcel 6561 for migration to and from this area.

Mexican Spotted Owl: The distribution of Mexican Spotted Owls in the KFO, within Larimer County is not well known. The owl occurs in isolated mountain systems and canyons that may include small patches of forested vegetation including stands of mixed-conifer, ponderosa pine, and/or riparian vegetation in which owls regularly roost and forage. Courtship begins in March, eggs are laid in April and nestlings fledge by mid-June.

Greenback cutthroat trout: None of the proposed lease parcels are known to support populations of Colorado River or Greenback cutthroat trout. Greenbacks prefer cold, clear, gravelly headwater streams and mountain lakes, which provide an abundant food supply of insects. Shell Creek, in parcel 6561, could support these species, however when it was surveyed in 2010, no cutthroat trout were identified.

Western prairie fringed orchid, whooping crane, piping plover, least tern and Pallid Sturgeon: These species and their critical habitats are located downstream from the Kremmling Field Office and are affected by water depletions.

Greater sage-grouse: Sage-grouse prefer relatively open sagebrush flats or rolling sagebrush hills. None of the parcels proposed for lease contain occupied habitat for Greater sage-grouse. However, all of the parcels are identified as historical habitat. Most of parcels 6561, 6562, and a portion of 6563 in Larimer County are forested, thus would not provide suitable habitat for this species.

North American Wolverine: The distribution of wolverine in the KFO, as well as Colorado, is not well known. Wolverines are animals of boreal forests and tundra and have a preference towards marshy areas such as lowland spruce forests that support extensive wetlands. None of these habitats occur in the parcels proposed for lease.

Bald Eagle: The Laramie River corridor is the hub for seasonal bald eagle use in the Laramie River valley. Particularly during the late fall and winter months, bald eagles make regular foraging use of open upland communities along the river and its larger tributaries. Concentrated diurnal use and nocturnal roosting functions during the winter occur in close proximity to all the lease parcels in Larimer County.

Northern goshawk: The KFO has a handful of recent records of goshawk nesting in North Park, the nearest being approximately 22 miles from the lease parcel in Jackson County, and 37 miles from the Larimer County parcels. Based on BLM's experience, goshawks nest at low densities in Douglas-fir and aspen stands. Goshawks establish breeding territories as early as March and begin nesting by the end of April. Nestlings are normally fledged and independent of the nest by mid-August.

Brewer's sparrow: Brewer's sparrows are common and widely distributed in virtually all big sagebrush and mixed brush communities throughout the planning area. These birds are typically one of the most common members of these avian communities and breeding densities generally range between 10-40 pairs per 100 acres. Although most abundant in extensive stands of sagebrush, the birds appear regularly in small (one to two acre) sagebrush parks scattered among area woodlands and there is a strong possibility that they may be found nesting in parcels 6596, 6563 and 6562. Typical of most migratory passerines in this area, nesting activities normally take place between mid-May and mid-July.

White-tailed prairie dog: Within the KFO, the white-tailed prairie dog occurs in the shrublands of North Park and the Wyoming Basin. Reproduction occurs in late February with young born in

late April to early May with the juveniles emerging above ground around the beginning of June. Portions of parcel 6563 and 6562 (Section 10) are identified as overall habitat for white-tailed prairie dogs. No active prairie dog towns are known to occur in these areas.

Townsend's big-eared bat: The distribution of bats in the KFO is not well understood. These bats typically use caves, mines, bridges, and unoccupied buildings for night, nursery, and hibernation roosts, but in western Colorado, single or small groups of bats use rock crevices and tree cavities. Although rock outcrops and mature conifers suitable as temporary daytime roosts for small numbers of bats are available in the Larimer parcels, there are no underground mines or known caves. In addition, unoccupied buildings are extremely limited in the proposed areas of oil and gas development. Birthing and rearing of young for these bats occur in June, and young are weaned and flying by the end of July.

Northern leopard frog: The Northern leopard frog inhabits wet meadows, the banks and shallows of marshes, ponds, lakes, reservoirs, streams, and irrigation ditches. The proposed parcels do not contain any known leopard frog populations. The proposed parcels may potentially contain habitat for this species along the riparian community associated with Shell Creek, Bluebell Creek, and McNally Creek.

Environmental Consequences of the Proposed Action:
Direct and Indirect Effects:

North Park phacelia: Surface disturbance operations in leased areas can negatively impact special status plant habitat by generating fugitive dust, removing and/or disturbing pollinator habitat, and contributing to the spread of noxious weeds. However, it is not the BLM's intention to permit surface disturbance in any areas of potential or occupied habitat for either federally listed plants or BLM special status plants (CO-NSO-8). If development is proposed in areas where surveys locate new populations of special status plant species, a thorough environmental analysis will be completed prior to any surface disturbing activities to determine potential impacts associated with the project. If federally listed plant species are found within the species' life history buffer of the project area a biological assessment would be submitted to the U.S. Fish and Wildlife Service. If BLM sensitive species are found near the project area impacts will be mitigated by either relocating the action or by applying conditions of approval.

Canada lynx and North American Wolverine: It is not likely that either Canada Lynx or wolverine inhabit the proposed leases in Larimer County. It is possible, however that these species may migrate through these parcels. If development occurs, impacts could include displacement into less suitable habitat. These impacts would be relatively minor to the species but long-term over the life of the development. If development occurs within parcel 6561, the Redfeather LAU, a biological assessment would be submitted to the U.S. Fish and Wildlife Service.

Mexican Spotted Owl and Northern goshawk: Although there are no known nests within the proposed lease parcels, mixed forest communities in parcels 6561, 6562, and 6563 may provide suitable nesting habitat. No ponderosa forests are identified on any of the parcels. Raptor nest surveys are required prior to project implementation in those areas potentially influenced by

proposed development activities. Information on functional nest sites found in the course of surveys are used as the basis for developing siting alternatives or applying timing limitations that reduce the risk of nest activity disruptions that could result in reproductive failure or compromising the long-term utility of nest habitat. The combination of COAs, TLs, and siting criteria that minimize or avoid adverse modification of nest habitat character have been effective in preventing reproductive failures and maintaining the integrity of the nest substrate or woodland stands for subsequent nest functions.

Greenback cutthroat trout and Northern leopard frog: Considering management emphasis on riparian and channel avoidance and sedimentation control (see Riparian section), it is unlikely that lease development would have any substantive consequence on the condition or function of channel features associated with aquatic habitats potentially occupied by the Greenback cutthroat trout and Northern leopard frog. Implementation of State and federally imposed design measures to control erosion and spills would limit the risk of contaminants migrating off-site and degrading water quality in the Laramie and Canadian Rivers and their contributing tributaries. However, it is likely that populations of fish and amphibians in this system would also be subject to depletion-related effects, to which the development of proposed lease parcels would incrementally contribute.

Western prairie fringed orchid, whooping crane, piping plover, least tern and Pallid Sturgeon: Depending on the water sources and amount of water used to develop the leases, there could be depletions to the North Platte River Basin, either in Jackson or Larimer Counties or both. The USFWS has determined that any water depletion in the Platte River basin may affect federally listed species and associated designated critical habitat. At the time of lease development, the BLM may need to initiate formal consultation pursuant to section 7 of the Endangered Species Act and require mitigation measures under the Platte River Recovery Implementation Program to offset these depletions.

Greater sage-grouse: Recent research offers strong indications that traditional forms and application of sage-grouse protection measures, formerly endorsed by State and federal wildlife managers, are ineffective in maintaining local sage-grouse populations in the face of even modest levels of fluid mineral development (e.g., Holloran 2005, Doherty et al. 2008, Walker et al. 2007). These data suggest that reduced lek attendance, avoidance and displacement from areas of energy development, lower survival of nesting hens, and reduced nest success are attributable to oil and gas development at well densities that exceed one well per section.

The proposed lease parcels encompass historical sage-grouse habitat. Most of parcel 6563 and all of 6596 is sagebrush habitat and could support sage-grouse. 12 acres of parcel 6596 has been determined to be Preliminary Priority Habitat (PPH) and 475 acres of parcel 6563 has been determined to be Preliminary General Habitat (PGH). There are no active leks in Larimer County and the nearest active lek to parcel 6596 is 2.5 miles. If development is proposed in these areas, a thorough environmental analysis would be completed prior to any surface disturbing activities to determine potential impacts associated with the project. If Greater sage-grouse are found near the project area, impacts would be mitigated by either relocating the action or by applying conditions of approval which might include lengthening the timing limitations.

Bald Eagle: No nests have been recorded in or near the proposed leases. Bald eagle winter foraging is dispersed and opportunistic across the entire KFO area, and is concentrated along the Laramie River, more than 1.0 miles away from the parcels. Thus, it is not likely that development of the proposed leases would impact bald eagles. If raptor surveys locate new nests or roosts, surface disturbing activities that have potential to disrupt important bald eagle seasonal use activities are subject to NSO and TL stipulations. These stipulations have been successful in protecting ongoing nest efforts and maintaining the long-term utility of roost and nest sites in the KFO.

Brewer's sparrow: Inglefinger and Anderson (2004) documented 40-60 percent declines in Brewer's sparrow abundance within 100 meters of well access roads in Wyoming, and it is likely that this effect operates similarly in the KFO. Indirect habitat loss attributable to this behavioral response adds substantially to the effects of habitat lost to long term facility occupation and shrubland modification that attends shrubland clearing (temporary workspace, reclaimed areas, pipeline installation). Considering that full field development may assume 5-10 percent of the land base, the collective impact of these avoidance responses on breeding populations would be dependent on facility siting criteria and the distribution of development activity through time. Efforts are made at the APD stage to locate facilities on habitat patch interfaces and avoid bisects of cohesive stands of sagebrush. Assuming these birds are capable of reoccupying these corridors to some degree once activity subsides to production and maintenance levels, prompt and effective reclamation, encouraging the use of BMPs that reduce vehicle traffic, restricting public use of well access roads, and promoting clustered development would help reduce the duration and extent of nest habitat disuse. Many leaseholders, in cooperation with the BLM and Colorado Parks and Wildlife (CPW), are actively pursuing and implementing these technologies. Although lease parcel development would contribute incrementally to reduced abundance of Brewer's sparrow in the KFO, it is expected that losses at any given time during the life of a field would not compromise the viability of Brewer's sparrow populations nor alter the distribution of the species at any landscape level.

White-tailed prairie dog: White-tailed prairie dog involvement with the proposed lease parcels is minor and is confined to small portions of parcels 6562 and 6563. Site specific mitigation measures developed at the APD stage including daily and seasonal activity restrictions and facility siting criteria would minimize or avoid adverse impacts to prairie dogs, particularly during the reproductive period.

Townsend's big-eared bat: It is unlikely that the proposed lease parcels offer habitat suitable for hibernation or rearing of young for the Townsend's big-eared bat. Perhaps widely distributed singly or in small groups during the summer months, roosting bats may be subject to localized disturbance from development activity. Considering siting criteria that avoids mature woodland involvement where possible, relatively minor but long-term reductions in mature woodland stands as sources of roost substrate is expected.

Reducing the duration or severity of impacts to special status plant and animal species is presented integral with the discussions above. In addition, all parcels are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plants or animals. Additional site specific mitigation measures will be implemented at the

APD stage and may include measures such as: 1) lease development in the vicinity of special status plant habitat will require a botanical inventory that meets the standards of the KFO plant survey protocol; 2) the timing required for conducting surveys may require deferring activities for longer than 60 days; 3) surface disturbance will not be allowed within mapped locations of special status plant species plants.

Cumulative Effects: While nearby development can be avoided through NSO stipulations and reduce direct or indirect effects, the increase in disturbance could increase the spread and abundance of noxious weeds which is a cumulative impact on special status plant species. Additionally, landscape fragmentation could cumulatively impact pollinator habitat and the persistence of special status plant species if the fragmentation affects their ability to expand their range.

The USFWS has determined that any water depletion in the Platte River basin may affect Western prairie fringed orchid, whooping crane, piping plover, least tern and Pallid Sturgeon and their associated designated critical habitat. At the time of lease development, the BLM may need to initiate formal consultation pursuant to section 7 of the Endangered Species Act and require mitigation measures under the Platte River Recovery Implementation Program to offset these depletions.

Although the lease sale itself would not contribute cumulatively, the potential for future disturbance may influence special status animal species, depending on location and intensity of disturbance/development. Impacts to special status species would be more accurately analyzed on site-specific basis (APD-level environmental analysis) where appropriate mitigation and possible consultation with FWS would be addressed or required.

In general, development of these lease parcels would involve, to varying degrees, habitat loss, avoidance of habitat, and species-specific behavioral influences. Currently, there is very little energy-related development in the Larimer County lease parcels (6561, 6562, and 6563). Development within these parcels, should it occur, it is not expected to contribute substantially to existing disturbances in the area, nor is it expected to have any measureable influence on special status species or important habitats. Energy-related development is common but dispersed in and around parcel 6596, with more intensive, concentrated development occurring to the northwest (approximately seven miles). It is suspected that cumulative effects would be more evident or pronounced where past or current development levels are greater, however they would not be expected to elevate to levels that would compromise the viability of any special status species or the utility of broader landscapes as habitat for those species.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on special status plant and animal species would be similar to those described under the Proposed Action, except for the following:

Greater sage-grouse: Under the Preferred Alternative, parcel 6563 and the west half of parcel 6596 have been deferred due to sage grouse habitat. A small portion of parcel 6562, and the east half 6596 is sagebrush habitat and could support sage-grouse. None of the remaining leases are within occupied habitat, PPH, or PGH for sage-grouse.

It is assumed that development under the Preferred Alternative would be less than the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no impacts to special status plant or animal species or their habitats from the No Action Alternative.

Mitigation: None

Finding on the Public Land Health Standard #4 for Special Status Species:

The Larimer County leases are considered to be meeting the land health standard for special status species, with concerns being limited to improving animal distribution. The Proposed Action could have some impact to special status species, but is not expected to keep the area from meeting the standard. The North Park lease is not located on BLM lands and has not been evaluated for the standard. The Proposed Action could impact special status species, but would not be expected to keep the area from meeting or move towards meeting the standard. Under the No Action Alternative, both areas would meet or move towards meeting the standard.

3.11 MIGRATORY BIRDS

Affected Environment: BLM Instruction Memorandum No. 2008-050 provides guidance towards meeting the 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 proposed lease parcels encompass a wide variety of habitats, including mountain big sagebrush (6596 and portions of 6562 and 6563); and lodgepole pine and aspen forests (parcels 6561, 6562 and 6563). Riparian communities are present in several of the parcels (see Wetland and Riparian Zones section). These habitats support a large array of migratory birds during the breeding season (generally May through July).

The BLM lends increased management attention to migratory birds listed by the U.S. Fish and Wildlife Service (FWS) as Birds of Conservation Concern (BCC). These are bird populations that monitoring suggests are undergoing range-wide declining trends and are considered at risk for becoming candidates for listing under the Endangered Species Act if not given due consideration in land use decisions. Those species associated with the Southern Rockies/Colorado Plateau region (FWS 2008a) and the proposed lease parcels are presented by habitat affiliation below.

BCC associated with sagebrush shrubland habitats are limited to the BLM-sensitive Brewer's sparrow, which is addressed in the Special Status Animal Species section and burrowing owl.

Conifer and aspen forests support nesting Cassin's finch in greater abundance than in lower elevation woodlands as well as Golden eagles. Riparian and wetland communities support willow flycatcher, veery, and American bittern.

More generally, birds associated with these lease parcels are well distributed in extensive suitable habitats throughout the KFO and northwest Colorado and habitat-specific bird assemblages appear to be composed and distributed appropriately to the normal range of habitat variability.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The actual lease sale would not impact any migratory bird species or their habitat, however, potential future development of the proposed leased parcels would influence both localized populations and their associated habitats. The potential effects of lease development on migratory birds are represented by the discussion for Brewer's sparrow in the Special Status Species section.

Cumulative Effects: Cumulative effects would be similar to those discussed in Special Status Species section.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on migratory birds would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no impacts to migratory bird species or their habitat(s) from the No Action Alternative.

Mitigation: In general, mitigation measures would be developed through an environmental analysis of a site specific application for permit to drill. Mitigation that is effective in reducing the duration or severity of impacts to migratory birds is presented with the discussion for Brewer's Sparrow in the Special Status Species section. Further, it is standard procedure to include a COA on all APDs that alerts the operator to their responsibility under the Migratory Bird Treaty Act to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage.

3.12 AQUATIC WILDLIFE

Affected Environment: Two of the proposed lease parcels (6596 and 6561) encompass perennial streams, Shell Creek and McNally Creek, that are capable of supporting coldwater fisheries and other aquatic life. Riparian habitat in parcels 6596, 6561 and 6562 may support populations of

Northern leopard frogs, also a BLM-sensitive species, although none have been documented. This species is discussed in the Special Status Species section above. The remaining systems (See Surface & Ground Water Quality Section), although perennial and/or intermittent, are relatively small and likely do not support aquatic wildlife.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: See discussions in the Special Status Species and Wetland and Riparian Zones sections. Emphasis on riparian and channel avoidance and sedimentation control provide a sufficient range of measures and objectives that, applied to lease development, effectively avoids substantive consequence on the condition or function of channel features associated with aquatic habitats. Implementation of State and federally-imposed design measures to control erosion and spills also work to limit the risk of contaminants migrating off-site and degrading water quality in these systems. There are no impacts associated with the leasing of these parcels. Impacts associated with the development of the lease parcels would be determined and analyzed through an environmental assessment at the APD stage. With the application of COAs and BMPs, impacts to aquatic habitats can be reduced or avoided.

Cumulative Effects: Cumulative effects would be similar to those discussed in the Special Status Species (specific to endangered river fish and Northern Leopard Frog) and Wetland and Riparian Zones sections.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on aquatic wildlife would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no actions authorized that would directly or indirectly influence aquatic habitats.

Mitigation: None

Finding on the Public Land Health Standard #3 for Plant and Animal Communities:

The Larimer County leases are considered to be meeting the land health standard for plant and animal communities, with concerns being limited to improving animal distribution. The Proposed Action could have some impact to plant and animal communities, but is not expected to keep the area from meeting the standard. The North Park lease is not located on BLM lands and has not been evaluated for the standard. The Proposed Action could impact plant and animal communities, but would not be expected to keep the area from meeting or move towards meeting the standard. Under the No Action Alternative, both areas would meet or move towards meeting the standard.

3.13 TERRESTRIAL WILDLIFE

Affected Environment: Lease parcels 6563, 6562, and 6561 include nearly all of the big game (deer, elk, moose, pronghorn, black bear) seasonal ranges. The northwest portion of parcel 6563 includes a migration corridor for mule deer in Section 4. Most of parcel 6561 is mapped as a resident elk population and elk production area and the northwest corner of Section 2 is a winter concentration area for elk. A portion of parcel 6562 is also an elk resident population and the southeast corner of Section 10 is an elk production area.

Parcel 6956 is located in big game winter range (deer, elk, and moose). These ranges fulfill their most important function during the later winter and early spring months prior to widespread plant emergence. By definition, these ranges harbor the majority of the area's big game populations under the most severe winter weather conditions when big game energetic demands are highest and access to nutritional forage lowest. This parcel is also located in summer range for moose and pronghorn.

None of the lease parcels are known to occur within 0.5 miles of a raptor nest site. Raptor nest surveys are required prior to project implementation in those areas potentially influenced by proposed development activities. Information on functional nest sites found in the course of surveys are used as the basis for developing siting alternatives or applying timing limitations and/or COAs that reduce the risk of nest activity disruptions that could result in reproductive failure or compromising the long-term utility of nest habitat.

Small mammals that are likely to inhabit the lease parcels, display broad ecological tolerance and are widely distributed throughout the region in suitable habitats. No narrowly distributed or highly specialized species or sub-specific populations are known to inhabit the KFO.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Traditional timing limitations continue to be applied to important summer and winter (i.e., severe winter and critical winter) ranges by the State and BLM, although these measures were not designed or intended to deal effectively with new drilling and completion technologies (e.g., deep directional, multi-well pads) and the disposal of large quantities of produced fluids. Sawyer (2006) demonstrated strong avoidance response of natural gas development activity in Wyoming deer and the pronounced influence of residual activity associated with maintenance/production phases and subsequent recreational use of well access roads. Later, Sawyer (2009) acknowledged that avoidance response in deer could be substantially reduced (40-60 percent) in these fields by employing technologies that reduce the truck transport of produced fluids (i.e., fluid transport via pipeline). These studies provide compelling evidence that behavioral impacts (habitat disuse from avoidance, elevated energetic demands) associated with human and vehicular activity attributable to oil and gas development are the primary impact imposed on big game and are, in these circumstances, more expansive and deleterious than direct habitat loss associated with longer term infrastructure occupation and shorter term vegetation modifications. Industry is actively planning or implementing fluids gathering systems that would drastically reduce the frequency of vehicle activity on affected big game ranges.

Complementary actions that are being employed to further reduce direct or indirect impacts include pooled employee transport, on-site employee housing, adjusting lease requirements or offering year-round development incentives to promote clustered development, increasing the

number of wells sequentially drilled at each location, and phased reclamation instituted soon after the pad is constructed. Site-specific conditions and opportunities are also reflected in COAs developed at the APD stage, including restricting public access on well access roads and pipeline rights-of-way and siting facilities and infrastructure in a manner that balances the interspersions of cover and forage compatible with the behavioral traits of deer and elk. Although not all proposed lease parcels may be developed in this manner, more advanced objectives and principles are likely to be universally promoted and applied where practical. With continued cooperation from industry and the State, and assuming the BLM will adapt lease and unit obligations to encourage clustered development patterns (reduced exposure to disturbance, increased efficiency of wildlife-oriented reclamation), the BLM believes impacts to big game abundance and distribution can be largely averted.

Oil and gas development's interference with and/or interruption of big game seasonal range movements have surfaced as a serious issue in some Wyoming natural gas fields. Because drilling operations at present tend to be clustered, increasingly sedentary (i.e., a rig may be at one location for up to two years while drilling multiple wells on pad versus a few months or less for a single well) and quiet, with a declining trend in well visitation and landscape footprint, BLM and CPW biologists do not feel at this time that big game migration movements have potential to be impaired sufficiently to adopt timing limitations as a remedy.

The combination of NSO and TL lease stipulations, and/or COAs, and complementing siting criteria that attempts to minimize or avoid adverse modification of raptor nest habitat character have been effective in preventing reproductive failures and maintaining the integrity of the nest substrate or woodland stand for subsequent nest attempts. Raptor nest surveys are required prior to project implementation in those areas potentially influenced by proposed development activities. Information on functional nest sites found in the course of survey are used as the basis for developing siting alternatives or applying COAs that reduce the risk of nest activity disruptions that could result in reproductive failure or compromising the long-term utility of nest habitat. The most prevalent habitat-related risk attending fluid minerals development in the KFO is the clearing of woodlands, which alters stand conformation for decades. Recent BLM monitoring efforts indicate that woodland nesting species, primarily Cooper's hawk and long-eared owl, continue to nest in more heavily developed fields at densities generally comparable to those found in sparsely developed areas. A limited amount of data suggest that brood size may be reduced under circumstances of concentrated development activity, but it would seem unlikely that these effects would persist at levels that would impair the long term viability of local populations.

Lease development's influence on small mammal populations, at least in the short term, is likely primarily confined to on-site mortality and direct habitat loss attributable to facility occupation and vegetation clearing. Due to the relatively small areal extent of actual surface occupation and the large intervening matrix of undisturbed lands, it is unlikely that present infrastructure extent or patterns are eliciting widespread species-area effects or (for most species) imposing barriers (e.g., roads) that preclude occasional genetic interchange. COAs to redistribute large woody debris on reclaimed pipeline corridors is, among other purposes, intended to provide cover for more secure small mammal movements and moderate the width and contrast in foreign substrate that must be crossed. These assumptions are tempered by the possibility that certain species may

rarely, if ever, cross barren roadbeds. The expanse of continuous habitat usually available on either side of a ridge (typical pattern of development) and its present ability to support robust populations of small mammals would likely mask declining population fitness for long periods of time.

Cumulative Effects: Cumulative effects would be similar to those discussed in Special Status Plant and Animal Species section.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on terrestrial wildlife would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no impacts to wildlife species or their habitats from the No Action Alternative.

Mitigation: None

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: The Larimer County leases are considered to be meeting the land health standard for plant and animal communities, with concerns being limited to improving animal distribution. The Proposed Action could impact plant and animal communities, however, is not expected to prevent the area from meeting the standard. The North Park lease is not located on BLM lands and has not been evaluated for the standard. The Proposed Action could impact plant and animal communities; however, it is not expected to keep the area from meeting or move towards meeting the standard. Under the No Action Alternative, both areas would meet or move towards meeting the standard.

3.14 CULTURAL RESOURCES

Affected Environment: The portion of the lease sale parcels in T.11 N., R.76 W., sections 4 and 9, contain a significant site 5LR11956 which is a prehistoric campsite site with numerous rock features and other associated traditional cultural properties (TCPs). These parcels are important in their landscape and setting to known and unknown TCPs. In the area proposed for leasing (T.11 N., R.76 W., sections 2-4 and 9-11), a cultural inventory of less than 100 acres is limited to previous road and well pad construction. Only one site, a prehistoric campsite (5LR1090), is located within the lease sale parcels. Site 5LR1090, is determined to be not eligible to the National Register of Historic Places. It is expected that within the areas proposed for leasing, historic and prehistoric sites are present with a ratio of approximately eight sites per square mile.

In the lease sale parcels along the Canadian River in T.9 N., R.78 W., section 7, no cultural inventory has been undertaken. It is predicted that there is a low probability of historic

properties in the parcel because the area of Bull Mountain is heavily forested. Within the lease sale area no historic properties are affected.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: All known significant historic properties would be avoided. Seismic exploration activities associated with oil and gas development could result in surface disturbance, and, therefore, in the identification of cultural sites. All oil and gas development would be subject to Class III Cultural Resource Inventories and site evaluation. This requirement would result in the identification of cultural sites, a determination of site significance, and mitigation measures (such as avoidance of cultural sites during development activities). However, surface disturbance associated with oil and gas development in areas of very high cultural-site density could result in the identification of sites that are unavoidable during mineral development. Sites that are unavoidable would be mitigated, resulting in the physical alteration or elimination of sites as they are mitigated through data recovery or other on-site means.

Cumulative Effects: The Bull Mountain lease area contains areas of high sensitivity for historic sites. Past and present effects to cultural resources come from grazing with the loss of vegetation leading to water and wind erosion that has caused the loss of features and artifact displacement. The lack of undertakings has provided site protection while at the same time contributed to the lack of scientific information from site location, site type, and other important information. The Proposed Action would increase scientific knowledge with newly discovered cultural resource sites. At the same time mitigation measures would be needed to collect the scientific information and provide protective measures to significant historic properties. New surface disturbance resulting from fluid minerals resource development would have potential adverse impacts to cultural resources from ground disturbance, erosion, intrusions to landscape setting to TCPs, access leading to unauthorized collection or vandalism, and interference with traditional cultural uses and access. Fluid minerals exploration and development activities are subject to further cultural resource review at each stage of development through the NHPA Section 106 processor permitting stipulations.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: Parcel 6563 would be deferred due to the effects of the Proposed Action on cultural resources and associated traditional cultural properties (TCPs) that are present. The direct and indirect effects of the remainder of the parcels on cultural resources would be similar to those described under the Proposed Action.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: For any undertaking a Class III Cultural Resource Inventory would be conducted to identify all known significant historic properties. This requirement would result in the identification of cultural sites, a determination of site significance, and mitigation measures, such as avoidance of cultural sites. No action would result in the lack of site identification and protection. The elimination of surface disturbing activities would also afford protection of historic properties. Unknown sites may be subject to artifact collection and erosional processes that may affect the integrity of sites. American Indian traditional use would not be affected by the No Action Alternative.

Mitigation: All oil and gas development would be subject to Class III Cultural Resource Inventories and site evaluation. This requirement would result in the identification of cultural sites, a determination of site significance, and mitigation measures (such as avoidance of cultural sites during development activities). However, surface disturbance associated with oil and gas development in areas of very high cultural-site density could result in the identification of sites that are unavoidable during mineral development. Sites that are unavoidable would be mitigated, resulting in the physical alteration or elimination of sites as they are mitigated through data recovery or other on-site means. There will be no adverse impacts to cultural resources from this action. All lands are subject to Exhibit CO-39 to protect resources of cultural and religious significance. Before any future APD actions are approved for exploration or drilling, Section 106 of the National Historic Preservation Act (NHPA) will be completed for these undertakings. Parcel 6563 was deferred to protect sites of cultural and religious significance from leasing.

The proposed lease parcels may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E. O. 13007, or other statutes and executive orders. The BLM would not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligation under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

3.15 PALEONTOLOGICAL RESOURCES

Affected Environment: The BLM has implemented a Potential Fossil Yield Classification (PFYC) system for classifying paleontological resources on public lands. Under the PFYC system, geologic units are classified from Class 1 to Class 5 based on the relative abundance of vertebrate fossils or uncommon invertebrate or plant fossils and their sensitivity to adverse impacts. A higher classification number indicates a higher fossil yield potential and greater sensitivity to adverse impacts. The project area contains portions of geological formations known to produce high scientifically valuable fossils, resulting in PFYC 3 classification. The formations affected, their PFYC values, and their known fossil types within the KFO proposed lease areas, are as follows (BLM Colorado State Office PFYC chart):

Benton Shale formation – PFYC 3 – known to contain clams, scaphites, baculites, and oysters.

Dakota sandstone formation – PFYC 3 – Dinosaur bones and tracks.

Eolian deposits - PFYC 3 -with unknown fossil yield potential.

Coalmont formation - PFYC 3 – Ammonites (marine mammals), baculites, nautilus, bivalves, clams, gastropods, mosasaurs (marine reptiles), scaphites (cephalopod), and oysters.

The PFYC 3 has geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Both May 2013 lease sale parcel areas contain areas mapped as PFYC 3 classification with formations and has a high potential to impact scientifically valuable fossil resources. Locations for proposed oil or gas well pads, pipelines, and associated infrastructure would directly adversely affect both surface and subsurface paleontological resources. The number of localities that could be impacted by various actions would directly correlate to the degree, nature, and quantity of surface-disturbing activities. Paleontological assessment and inventory is required at the time of development.

Cumulative Effects: Development of oil and gas resources could impact paleontological resources due to the surface disturbances associated with such development. Vertebrate or other scientifically significant fossils could be inadvertently damaged from disturbance if they were not identified and avoided or mitigated. Surface-disturbing activities could expose, dislodge, or damage paleontological resources and features that were not visible before surface disturbance. Increased access associated with new development would lead to increased access to paleontological sites.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on paleontological resources would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Fossil resources would likely not be affected. New information on the paleontological resources that might be obtained in the area would not be forthcoming.

Mitigation: Paleontological inventory is not required at the time of leasing. Paleontological assessment and inventory is, however, required at the time of development if sensitive paleontological resources are within the Area of Potential Effect (APE). Paleontological resources identified during assessments and inventories would be protected through data and specimen collection and mitigation.

3.16 NATIVE AMERICAN RELIGIOUS CONCERNS

Affected Environment: There is a potential that within any of the nominated parcels there are sites and areas of cultural and religious concern to Native American tribes, including Traditional Cultural Properties (TCPs). These areas are associated with “cultural practices or beliefs of a living community that (a) are rooted in the community’s history, and (b) are important in maintain the continuing cultural identity of the community” (National Register Bulletin 38:1). TCPs are areas that are eligible for inclusion in the National Register of Historic Places. The

recognition of TCPs is often difficult for non-Tribal members because the term “Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations, usually orally or through practice. In order to determine if there are sites and areas of cultural and religious concern to Native American tribes, including TCPs, the BLM consulted with officials from five Native American tribes with cultural and historic connections to the Kremmling Field Office area. These tribes were consulted on August 21, 2012. All affiliated tribes the Northern Ute Tribe, Ute Mountain Ute Tribe, Southern Ute Tribe, Eastern Shoshone, and Northern Arapaho have requested continued consultation and recognition of the area of Bull Mountain as important to those tribes.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The act of leasing oil and gas parcels has potential to cause effects on sites of cultural and religious concern to Native American tribes, including TCPs. Though there are no direct or indirect impacts to these resources caused by ground disturbance, the BLM must take into account the potential affect to cultural landscapes from future entry to explore and develop the parcels.

Mitigation: Before any future APD actions are approved for exploration or drilling, a Class III cultural resource inventory would be undertaken to comply with Section 106 of the National Historic Preservation Act (NHPA). The KFO requires a minimum 10 to 40-acre inventory block around proposed well locations, per its current standards and practices. This buffer typically allows for the relocation of proposed well pads more than 100 meters away from newly discovered sites and areas of cultural and religious concern to Native American tribes, including TCPs. Proposed construction or operation activities associated with development of these lease parcels would be relocated to avoid sites and areas by at least 100 meters, or that any related undertaking’s Area of Potential Effect (APE) could be situated to avoid these resources.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: Parcel 6563 would be deferred due to the possible effects of the Proposed Action on cultural and religious sites of concern to Native American tribes. The direct and indirect effects of the remainder of the parcels on cultural and religious sites would be similar to those described under the Proposed Action.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect effects to TCPs by oil and gas leasing activities.

Mitigation: Tribal consultation did not identify sites and areas of cultural and religious concern to Native American tribes, including TCPs within the proposed parcels. There will be no effect to these resources from this action. All lands are subject to Exhibit CO-39 to protect resources of cultural and religious significance. Before any future APD actions are approved for exploration or drilling, additional tribal consultation will be conducted for these undertakings to comply with Section 106 of the National Historic Preservation Act (NHPA).

3.17 VISUAL RESOURCES

Affected Environment: Visual resource inventory (VRI) is broken into four classes. Since the 1984 Resource Management Plan (RMP) did not designate Visual Resource Management (VRM) areas in the Kremmling Field Office, BLM manages visual resources to protect the VRI by applying management class objectives to the inventory. The proposed parcels for this lease sale lie within VRI Class II in Larimer County. No VRI occurred on the Jackson County parcel, since it is State Land. The inventory classes are informational in nature and provide the basis for considering visual values in the NEPA process. They do not establish management direction and should not be used as a basis for constraining or limiting surface disturbing activities. The lands in Larimer County are very rural with few visitors. Since the area is mostly used for undeveloped camping and hunting, the visitor is not expecting development.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The anticipated impacts to visual values held by the various publics in the area as a result of projected landscape changes during oil and gas development would be noticeable due to new access roads and oil and gas buildings and facilities. The value of wide open views and serenity of the area for campers and hunters would be lessened depending on the amount of development.

Cumulative Effects: Continued oil and gas development activities, combined with other surface disturbing activities, would cumulatively impact the visual values held by the public until the Resource Management Plan is completed and Visual Resource Management can be applied to these areas. For example, if the area was classified as VRM Class II, the area is particularly vulnerable to cumulative visual changes on the landscape as the objective of VRM Class II is to retain the existing character of the landscape.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on visual resources would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no impacts to visual resources from the No Action Alternative.

Mitigation: For VRI Class II, all facilities, including meter buildings, would be painted a color determined by the Authorized Officer at the time of development to blend with the vegetative and/or landform setting and minimize contrast as much as possible. Additional COAs, such as landform contouring, vegetation screening, and ridgeline avoidance, may be added on a case by case basis for each APD. Each COA would be developed based on site specific analysis of the APD to reduce contrasts with the form, line, color, and texture of the surrounding landscape to ensure that the objectives of the respective VRI Class may be retained.

3.18 SOCIAL AND ECONOMIC CONDITIONS

Affected Environment: Parcels nominated for leasing are offered for sale during an oral auction. The minimum acceptable bid for a parcel is \$2.00 per acre. Because the sale is conducted as an auction, the minimum bid is often increased, sometimes substantially, until bidding ceases. The increased bid is called a bonus bid. The sum of the minimum bid and the bonus bid, if any, is collected the day of the sale. Additionally the first year's rental of \$1.50 an acre or fraction of an acre must be paid at the time of the sale. Annual rental is \$1.50 per acre or fraction of an acre for the first five years of the lease term, increasing to \$2.00 per acre or fraction of an acre for any subsequent year. Because parcels are auctioned, there can be no guarantee that each parcel will be sold, and an estimate cannot be made in advance of the sale of the revenue produced from selling the parcels.

Environmental Consequences of the Proposed Action Alternative: The leasing process provides no direct socio-economic benefit or detriment, except for the collection of bids, bonus bids, and rentals. The minimum income if all recommended parcels are sold at the May sale would be approximately \$5,128. Income from the sale goes to the federal and Colorado treasuries. The federal and Colorado treasuries would receive revenue if leases unsold during the November sale are later purchased non-competitively. Economic and social impacts would result from development of leases, in the form of temporary or permanent employment, rental or purchase of equipment, and royalties paid to the federal and Colorado treasuries, and other expenditures related to development. At the leasing stage, an estimate of economic impacts is not possible. Similarly, it is not possible to predict social impacts because development is not assured. The existing businesses (outfitters) the area might decline if it was to be developed since they would not be able to obtain the recreational experience that is associated with horseback rides and afforded by being able to travel across a landscape not impacted by energy development.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on social and economic resources would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore the income to the Federal and State government would be proportionately reduced.

Environmental Consequences of the No Action Alternative: In this alternative, all nominated leases would be removed from the May sale. Revenue at the time of the sale in the amount of approximately \$5,128 would be lost. It is likely that continuing demand would be addressed through production elsewhere.

It is an assumption that the No Action Alternative (no lease option) may result in a slight reduction in the domestic production of oil and gas. This would likely result in reduced Federal and State royalty income. Oil and gas consumption is driven by a variety of complex interacting factors including energy costs, energy efficiency, availability of other energy sources, economics, demographics, and weather or climate. If the BLM were to forego its leasing

decisions and potential development of those minerals, the assumption would be that the public's demand for the resource would not be expected to change. Instead, the resource foregone would be replaced by other sources that may include a combination of imports, fuel switching, alternative fuels, and other domestic production.

Cumulative Effects: This lease sale, when combined with the past, present and reasonably foreseeable actions, contributes slightly to the state and federal treasuries, and could contribute to continuation of an industry that provides substantial income and jobs to the community.

Mitigation: None.

3.19 LIVESTOCK GRAZING MANAGEMENT

Affected Environment: The nominated parcels in Larimer County occur on grazing allotment 07254 (Shell Creek) administered by the BLM. Livestock grazing is authorized on this allotment from 06/01-09/30 for a total of 364 Animal Unit Months (AUMs). The nominated parcel 6956 in Jackson County is administered by the Colorado State Land Board with Silver Spur Land and Cattle as the current grazing permittee. Throughout these parcels there are monitoring sites, and range improvement projects including fences, and water developments; all of which could be impacted by oil and gas development activities.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The actual amount of direct and indirect effects to livestock grazing on this allotment cannot be predicted until the site-specific APD stage of development. General direct effects on livestock grazing would be forage loss associated with vegetation removal. The amount of forage loss would vary based on the productivity of the affected range site prior to disturbance, the distance of that site from livestock water sources and the topography of the site. Livestock make the most use of areas less than one mile from water sources and areas with gentle topography, in areas where development occurs more than a mile from water sources or on steeper slopes, forage losses resulting from development would have less impact on livestock grazing. Interim reclamation of portions of each area disturbed for oil and gas development would reduce forage losses as vegetation re-establishes.

Indirectly there would be additional forage losses associated with dust deposition on vegetation adjacent to roads or the pad/facility during its development. Dust coated vegetation tends to be less palatable to grazing animals including livestock. Additionally, during periods of intensive development livestock may tend to avoid the area due to the increased activity and noise levels.

Rangeland improvements such as fences, corrals, and watering facilities could be impacted by road and pad construction though most such situations would be mitigated by moving the road or pad or reconstructing the range improvement as part of the development action. Placement of facilities near rangeland improvement projects could compromise their usefulness, particularly during the development stage. Where pads are placed near water sources, there is an increased potential for stock to use the pad areas for resting, and rubbing on facilities. This increases the potential for livestock to be exposed to various drilling related hazards.

Cumulative Effects: Overall, the Proposed Action would result in continued oil and gas development activities. Where development occurs there would be temporary, short-term forage losses potentially resulting in adjustments to permitted grazing use. A slight positive benefit would be likely where successful reclamation increases the production of forage, especially on sites where forage production had previously been below site potential. There would likely be no significant direct or indirect cumulative impact on livestock grazing operations in these allotments. However, cumulative impacts from past and possible future oil and gas activities could have a long-term effect on the native range's carrying capacity, thus influencing the authorized animal unit month, or AUMs. This possible affect would be determined during the grazing permit renewal process which includes an evaluation of forage capacity available for livestock. It is foreseeable that the grazing permit holder could lose a portion of permitted active AUMs due to a loss of forage associated with oil and gas development within the authorized BLM and Colorado State Land Board grazing allotments.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on grazing management would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The No Action Alternative would result in no change from the current situation of on-going oil and gas development activities and livestock grazing. There would be no additional oil and gas leases in the allotments, and there would be no additional potential for loss of AUMs or impacts to range improvements in association with oil and gas development.

Mitigation: Site specific analysis may lead to application of COAs at the APD stage that may include, repairing, or replacing any rangeland improvements impacted by oil and gas development activities.

3.20 RECREATION

Affected Environment: The proposed lease parcels within Larimer County are located within the Kremmling Extensive Recreation Management Area (ERMA), designated in the 1984 Kremmling RMP. The ERMA is managed by the BLM to provide the general public with a highly diverse range of outdoor recreational activities. BLM-administered lands within the Proposed Action project area provide dispersed recreation opportunities such as camping, hiking, hunting, horseback riding, Off-Highway Vehicle (OHV) use and wildlife watching. A Special Recreation Permit (SRP) for Guided Horseback Rides is authorized for BLM-administered lands within the proposed lease parcels in Larimer County. The proposed lease parcels within Jackson County are within State Trust Lands managed by the Colorado State Board of Land Commissioners. Typically, State Trust Lands are not open to public recreational use and are leased to generate revenue for Colorado state schools and education. There are no known leases

on the proposed parcels in Jackson County that provide public recreational opportunities. If the area was to be leased for potential oil and gas development, future leasing of the area for other uses such as recreation opportunities could be impacted.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action and potential for future development of oil and gas infrastructure may displace the public from utilizing these areas for dispersed recreation opportunities. The potential for visual impacts to the area as discussed in the Visual Resource section, and disturbance to wildlife as discussed in the Wildlife section may directly impact the quality of dispersed recreation activities in the area. The existing SRP holder may see a decline in business if the area was to be developed since they would not be able to obtain the recreational experience that is associated with horseback rides and afforded by being able to travel across a landscape not impacted by energy development.

Cumulative Effects: The Proposed Action and potential development of oil and gas infrastructure on BLM-administered lands, in conjunction with other potential surface disturbing uses could displace visitors from these areas. State Trust Lands that are not currently leased for recreational opportunities may have their potential for leasing for recreation adversely impacted. Areas that are not developed may then see increased visitation and may diminish visitors' recreational experiences due to overcrowding. If development was to occur the existing SRP holder in Larimer County may no longer be able to sustain their business to loss of income and the opportunity for the public to have guided horseback rides could be diminished or lost.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on recreation would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Recreational activities within the project areas would continue to occur much as they do currently. The SRP holder would not be impacted by the potential for energy development of the area.

Mitigation: None

3.21 ACCESS AND TRANSPORTATION

Affected Environment: The proposed lease parcels within Larimer County are located within BLM-administered surface that are designated as "Open" through the current RMP and associated 1988 Off Road Vehicle Implementation Plan. While all modes of travel are permitted throughout the project area, the topography and terrain limits certain uses. The project area provides hiking, biking, horseback and motorized routes. The existing transportation system is characterized by routes created for management of the resources, public access and user created routes. Several horseback routes exist within the area.

The proposed lease parcels within Jackson County are within State Trust Lands managed by the Colorado State Board of Land Commissioners. Typically, State Trust Lands are not open to public use and are leased to generate revenue for Colorado state schools and education. There are no known leases on the proposed parcels in Jackson County that provide public access or transportation opportunities. If the area was to be leased for potential oil and gas development those leases whether for grazing or recreation, access and transportation opportunities could be impacted if the parcels had energy development occur on them.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action and potential for future development of oil and gas infrastructure may have a direct impact to the existing transportation system. Existing routes may be widened or upgraded for the development of the area and may increase travel along roads to build and maintain any infrastructure that is required. While this may benefit access to the area for the public the potential increased frequency of travel by maintenance vehicles and trucks may adversely impact the safety of travel along such routes and adversely impact other forms of travel within the area. Modes of travel associated with recreational opportunities as discussed in the Recreation section may be displaced to areas that have less frequent travel occurring. Areas within the Proposed Action that currently are only accessible by foot, horseback or other non-motorized means may become accessible for motorized travel potentially displacing non-motorized opportunities.

Cumulative Effects: The Proposed Action and potential development of oil and gas infrastructure, in conjunction with other potential surface disturbing uses could increase access to the area. However, depending on the level of development safety of the public utilizing roads in an area of development may be impacted along with displacing other non-motorized modes of travel within the project area.

Environmental Consequences of the Preferred Alternative:

Direct and Indirect Effects: The direct and indirect effects of the Preferred Alternative on access and transportation would be similar to those described under the Proposed Action. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Access and Transportation within the project areas would continue to occur much as they do currently.

Mitigation: None

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2007 Greater sage-grouse population response to energy development and habitat loss. *Journal of Wildlife Management* 71: 2644-2654.

5.0 CONSULTATION AND COORDINATION:

The Kremmling Field Office sent letters on August 21, 2012, to the following agencies requesting comments on the proposed action: Colorado Parks & Wildlife (CPW), Colorado State Land Board, Larimer County and Jackson County and five Native American Tribes (Northern Ute, Ute Mountain Ute, Southern Ute, Eastern Shoshone, and Northern Arapaho), Laramie River Guest Ranch (Special Recreation Permittee), Krista Kaplan and Bill Burleigh (Special Recreation permittee), and Diamond Tail Ranch, (Grazing permittee).

6.0 INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility	Date Signed
Paula Belcher	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and	10/11/2012

Name	Title	Area of Responsibility	Date Signed
		Water Rights; Soils; Wetland and Riparian Zones	
Bill B. Wyatt	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	10/12/2012
Cynthia Landing Neilie Tibbs	Rangeland Management Specialist	Vegetation; Rangeland Management	10/09/2012
Zach Hughes	Natural Resource Specialist	Invasive, Non-native species.	10/16/2012
Megan McGuire	Wildlife Biologist	Migratory Birds; Special Status Plant and Animal Species; Terrestrial and Aquatic Wildlife; Areas of Critical Environmental Concern.	11/9/2012
Kelly Hodgson	Natural Resource Specialist	Hazardous or Solid Wastes; Geology and Minerals	10/16/2012
John Monkouski	Outdoor Recreation Planner	Wilderness; Access and Transportation; Recreation,	10/16/2012
Kenneth Belcher	Forester	Forest Management	10/12/2012
Annie Sperandio	Realty Specialist	Realty	10/12/2012
Susan Cassel	Associate Field Manager	Social Economics and NEPA Compliance	10/16/2012

7.0 ATTACHMENTS:

- A). Proposed May 2013 Colorado Oil and Gas Lease Sale
- B). Parcels Available for Lease with Deferred Portions
- C). Parcels Available for Lease with Applied Stipulations
- D). Stipulation (Exhibit) Descriptions
- E). Responses to Comments
- F). Maps

7.1 ATTACHMENT A:

Proposed May 2013 Colorado Oil and Gas Lease Sale

PARCEL ID: 6561 SERIAL #:

T. 0110N., R 0760W., 6TH PM
Sec. 2: Lot 1-4;
Sec. 2: S2N2,S2;
Sec. 11: N2,SW,N2SE;

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

All lands are subject to Exhibit CO-10 to protect elk calving:

The following lands are subject to Exhibit CO-29 to alert lessee of Class I and II paleontological area inventory requirement:

T. 0110N., R 0760W., 6TH PM
Sec. 2: Lot 1;
Sec. 2: SENE; N2SE; SWSE; SESW;
Sec. 11: W2;

The following lands are subject to Exhibit CO-27 to protect soils on slopes greater than 40%:

T. 0110N., R 0760W., 6TH PM
Sec. 2: Lot 1-4;
Sec. 2: SENE, SENW, SESE;
Sec. 11SWNE;

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:

T. 0110N., R 0760W., 6TH PM
Sec. 2: Lot 1-4;
Sec. 2: SENE; E2SW;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

Larimer County
Colorado 1204.870 Acres

BLM; CDO: KRA

PARCEL ID: 6562 SERIAL #:

T. 0110N., R 0760W., 6TH PM
Sec. 3: S2;
Sec. 10: ALL;

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

The following lands are subject to Exhibit CO-10 to protect elk calving:

T. 0110N., R 0760W., 6TH PM
Sec. 10: SE

The following lands are subject to Exhibit CO-27 to protect soils on slopes greater than 40%:

T. 0110N., R 0760W., 6TH PM
Sec. 3: NESW;
Sec. 10: S2SW;

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:

T. 0110N., R 0760W., 6TH PM
Sec. 10: W2SW, SESE;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

Larimer County
Colorado 960.000 Acres

BLM; CDO: KRA

PARCEL ID: 6563 SERIAL #:

T. 0110N., R 0760W., 6TH PM
Sec. 4: Lot 1-4;
Sec. 4: S2N2,S2;
Sec. 9: ALL;

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

The following lands are subject to Exhibit CO-27 to protect soils on slopes greater than 40%:

T. 0110N., R 0760W., 6TH PM
Sec. 4: Lot 1, 2;
Sec. 4: SWNE, SENW, SW4;
Sec. 9: W2, W2E2;

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:

T. 0110N., R 0760W., 6TH PM
Sec. 4: S2NW;
Sec. 9: S2NE, N2SE;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

Larimer County
Colorado 1287.260 Acres

PVT/BLM;BLM; CDO: KRA

PARCEL ID: 6596 SERIAL #:

T. 0090N., R 0770W., 6TH PM
Sec. 7: Lot 3,4;
Sec. 7: E2SW;

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:

T. 0090N., R 0770W., 6TH PM
Sec. 7: Lot 3;
Sec. 7: E2SW;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

Jackson County
Colorado 159.290 Acres

PVT/BLM; CDO: KRA

7.2 ATTACHMENT B:

Parcels Available for Lease with Deferred Portions

May 2013 – Colorado Competitive Oil & Gas Lease Sale

PARCEL ID: 6563 SERIAL #:
Acres Nominated: 1287.260 Acres
Available Acres: 0 Acres
Deferred Portion: 1287.26 Acres

T. 0110N., R 0760W., 6TH PM DEFER ALL for Cultural Resources;
Sec. 4: Lot 1-4;
• DEFER Lots 2, 3, 4 for General Sage-grouse habitat;
Sec. 4: S2N2,S2; DEFER ALL for Cultural Resources
• DEFER SW, S2NW, SWNE for General Sage-grouse habitat;
Sec. 9: ALL;
• DEFER W2, SE for General Sage-grouse habitat;

Larimer County
Colorado

PVT/BLM;BLM; CDO: KRA

PARCEL ID: 6596 SERIAL #:
Acres Nominated: 159.290 Acres
Available Acres: 80 Acres
Deferred Portion: 79.29 Acres

T. 0090N., R 0770W., 6TH PM
Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat
Sec. 7: E2SW;

Jackson County
Colorado

PVT/BLM; CDO: KRA

7.3 ATTACHMENT C:

Parcels Available for Lease with Applied Stipulations

May 2013 – Colorado Competitive Oil & Gas Lease Sale

May 2013 Lease Sale Summary

Total Available Acres: 2,244.87 Acres

PARCEL ID: 6561

T. 0110N., R 0760W., 6TH PM

Sec. 2: Lot 1-4;

Sec. 2: S2N2,S2;

Sec. 11: N2,SW,N2SE;

Larimer County

Colorado 1204.870 Acres

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

All lands are subject to Exhibit CO-10 to protect elk calving.

The following lands are subject to Exhibit CO-29 to alert lessee of Class I and II paleontological area inventory requirement:

T. 0110N., R 0760W., 6TH PM

Sec. 2: Lot 1;

Sec. 2: SENE; N2SE; SWSE; SESW;

Sec. 11: W2;

The following lands are subject to Exhibit CO-27 to protect soils on slopes greater than 40%:

T. 0110N., R 0760W., 6TH PM

Sec. 2: Lot 1-4;

Sec. 2: SENE, SENW, SESE;

Sec. 11SWNE;

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:

T. 0110N., R 0760W., 6TH PM

Sec. 2: Lot 1-4;

Sec. 2: SENE; E2SW;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

BLM; CDO: KRA

PARCEL ID: 6562

T. 0110N., R 0760W., 6TH PM

Sec. 3: S2;

Sec. 10: ALL;

Larimer County
Colorado 960.000 Acres

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

The following lands are subject to Exhibit CO-10 to protect elk calving:
T. 0110N., R 0760W., 6TH PM
Sec. 10: SE

The following lands are subject to Exhibit CO-27 to protect soils on slopes greater than 40%:
T. 0110N., R 0760W., 6TH PM
Sec. 3: NESW;
Sec. 10: S2SW;

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:
T. 0110N., R 0760W., 6TH PM
Sec. 10: W2SW, SESE;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

BLM; CDO: KRA

PARCEL ID: 6596

T. 0090N., R 0770W., 6TH PM
Sec. 7: E2SW;

Jackson County
Colorado 80 Acres

All lands are subject to Exhibit CO-09 to protect big game winter habitat.

The following lands are subject to Exhibit CO-28 to protect riparian/wetland vegetation:
T. 0090N., R 0770W., 6TH PM
Sec. 7: NESW;

All lands are subject to Exhibit CO-34 to alert lessee of potential habitat for a threatened, endangered, candidate, or other special status plant or animal.

All lands are subject to Exhibit CO-39 to protect cultural resources.

PVT/BLM; CDO: KRA

7.4 ATTACHMENT D:

STIPULATION DESCRIPTION

EXHIBIT CO-09

Lease Number: <LEASE_NUMBER>

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

December 1 through April 30

On the lands described below:

<LEGAL_DESCRIPTIONS>

For the purpose of (reasons):

To protect big game (mule deer, elk, pronghorn antelope, and bighorn sheep) winter range, including crucial winter habitat and other definable winter range as mapped by the Colorado Division of Wildlife. This may apply to Sundry Notices that require an environmental analysis.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Exception Criteria:

An exception may be granted under mild winter conditions for the last 60 days of the closure.

EXHIBIT CO-10

Lease Number: <LEASE_NUMBER>

TIMING LIMITATION STIPULATION

No surface use is allowed during the following time period(s). This stipulation does not apply to operation and maintenance of production facilities.

April 16 through June 30

On the lands described below:

<LEGAL_DESCRIPTIONS>

For the purpose of (reasons):

To protect elk calving

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of the stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

EXHIBIT CO-27

Lease Number: <LEASE_NUMBER>

CONTROLLED SURFACE USE STIPULATION

Surface occupancy or use is subject to the following special operating constraints.

On the lands described below:

<LEGAL_DESCRIPTIONS>

For the purpose of:

Protecting soils on surfaces greater than 40 percent slope. Prior to surface disturbance of steep (greater than 40 percent) an engineering/reclamation plan must be approved by the Authorized Officer. Such plans must demonstrate how the following will be accomplished:

- a. Site productivity will be restored.
- b. Surface runoff will be adequately controlled.
- c. Off-site areas will be protected from accelerated erosion such as drilling, gullyng, piping, and mass wasting.

d. Surface-disturbing activities will not be conducted during extended wet periods.

e. Construction will not be allowed when soils are frozen.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

EXHIBIT CO-28

Lease Number: <LEASE_NUMBER>

CONTROLLED SURFACE USE STIPULATION

Surface occupancy or use is subject to the following special operating constraints.

On the lands described below:

<LEGAL_DESCRIPTIONS>

For the purpose of:

To protect perennial water impoundments and streams, and/or riparian/wetland vegetation by moving oil and gas exploration and development beyond the riparian vegetation zone.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

Exception Criteria:

Exceptions may be granted only if an on-site impact analysis shows no degradation of the resource values.

EXHIBIT CO-29

Lease Number: <LEASE_NUMBER>

LEASE NOTICE

An inventory of fossil resources in Class I and II paleontological areas must be performed by an accredited paleontologist approved by the Authorized Officer.

On the lands described below:

<LEGAL_DESCRIPTIONS>

EXHIBIT CO-34

Lease Number: <LEASE_NUMBER>

ENDANGERED SPECIES ACT SECTION 7 CONSULTATION STIPULATION

The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. BLM may recommend modifications to exploration and development proposals to further its conservation and management objective to avoid BLM-approved activity that will contribute to a need to list such a species or their habitat. BLM may require modifications to or disapprove proposed activity that is likely to result in jeopardy to the continued existence of a proposed or listed threatened or endangered species or result in the destruction or adverse modification of a designated or proposed critical habitat. BLM will not approve any ground-disturbing activity that may affect any such species or critical habitat until it completes its obligations under applicable requirements of the Endangered Species Act as amended, 16 U.S.C. § 1531 *et seq.*, including completion of any required procedure for conference or consultation.

On the lands described below:

<LEGAL_DESCRIPTIONS>

EXHIBIT CO-39

Lease Number: <LEASE_NUMBER>

CONTROLLED SURFACE USE

This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA), American Indian Religious Freedom Act, Native American Graves Protection and Repatriation Act, E.O.13007, or other statutes and executive orders. The BLM will not approve any ground disturbing activities that may affect any such properties or resources until it completes its obligations under applicable requirements of the NHPA and other authorities. The BLM may require modification to exploration or development proposals to protect such properties, or disapprove any activity that is likely to result in adverse effects that cannot be successfully avoided, minimized or mitigated.

Any changes to this stipulation will be made in accordance with the land use plan and/or the regulatory provisions for such changes. (For guidance on the use of this stipulation, see BLM Manual 1624 and 3101 or FS Manual 1950 and 2820.)

On the lands described below:

<LEGAL_DESCRIPTIONS>

7.5 ATTACHMENT E: RESPONSES TO COMMENTS

Scoping Comments

No.	Commenter	Comment	BLM's Response
1	Barbara Vasquez on behalf of groups listed in Section 1.5	Risk to the North Platte River watershed – impacts to water quality and fisheries. Requested that parcel 6596, constituting 80 acres in Jackson County, Colorado, straddling McNally Creek be deferred from May 2013 oil lease sale and remain deferred until cumulative impacts are analyzed and addressed in a Master Lease Plan developed for North Park.	PARCEL ID: 6596 SERIAL #: Acres Nominated: 159.290 Acres Available Acres: 80 Acres Deferred Portion: 79.29 Acres T. 0090N., R 0770W., 6TH PM Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat
2	Barbara Vasquez on behalf of groups listed in Section 1.5	Proposed action would contribute to habitat degradation and fragmentation for big game and Greater Sage –grouse. Requested that parcel 6596, constituting 80 acres in Jackson County, Colorado, straddling McNally Creek be deferred from May 2013 oil lease sale and remain deferred until cumulative impacts are analyzed and addressed in a Master Lease Plan developed for North Park.	PARCEL ID: 6596 SERIAL #: Acres Nominated: 159.290 Acres Available Acres: 80 Acres Deferred Portion: 79.29 Acres T. 0090N., R 0770W., 6TH PM Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat
3	Barbara Vasquez on behalf of groups listed in Section 1.5	The components of the hydrofracturing fluids, the retrieval and transportation of flowback fluids as well as the methods used for hydrofracturing pose unique and potentially unknown risks to both ground and surface water quality. Requested that parcel 6596, constituting 80 acres in Jackson County, Colorado, straddling McNally Creek be deferred from May 2013 oil lease sale and remain deferred until cumulative impacts are analyzed and addressed in a Master Lease Plan developed for North Park.	PARCEL ID: 6596 SERIAL #: Acres Nominated: 159.290 Acres Available Acres: 80 Acres Deferred Portion: 79.29 Acres T. 0090N., R 0770W., 6TH PM Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat
4	Colorado Parks and Wildlife (CPW)	For elk winter concentration areas, CPW recommends a stipulation that restricts surface use from December 1 through April 15 in these affected parcels: Larimer County: Parcel 6561 - 21 acres within Sec.2 (11N 76W)	PARCEL ID: 6561 T. 0110N., R 0760W., 6TH PM Sec. 2: Lot 1-4; Sec. 2: S2N2,S2; Sec. 11: N2,SW,N2SE; Larimer County Colorado 1204.870 Acres All lands are subject to Exhibit CO-

No.	Commenter	Comment	BLM's Response
			09 to protect big game winter habitat.
5	Colorado Parks and Wildlife (CPW)	<p>For elk production areas, CPW recommends a stipulation that restricts surface use from May 15 to June 30 for calving.</p> <p>Larimer County: Parcel 6561 – a) 505 acres within Sec. 2 and, b) 578 acres within Sec. 11 (both within 11N 76W) Parcel 6562 – 28 acres within Sec 10 (11N 76W)</p>	<p>PARCEL ID: 6561 T. 0110N., R 0760W., 6TH PM Sec. 2: Lot 1-4; Sec. 2: S2N2,S2; Sec. 11: N2,SW,N2SE;</p> <p>Larimer County Colorado 1204.870 Acres</p> <p>The following lands are subject to Exhibit CO-10 to protect elk calving: T. 0110N., R 0760W., 6TH PM Sec. 2: Lot 1-4; Sec. 11: N2,SW,N2SE.</p> <p>PARCEL ID: 6562 T. 0110N., R 0760W., 6TH PM Sec. 3: S2; Sec. 10: ALL;</p> <p>Larimer County Colorado 960.000 Acres</p> <p>The following lands are subject to Exhibit CO-10 to protect elk calving: T. 0110N., R 0760W., 6TH PM Sec. 3: S2; Sec. 10: N2; SW; NESW;</p>
6	Colorado Parks and Wildlife (CPW)	<p>For moose winter range, CPW recommends timing restrictions on drilling of December 1 to April 15.</p> <p>Larimer County: Parcel 6561 – a) 46.4 acres within Sec. 11 and, b) 53.6 acres within Sec. 2 (both within 11N 76W) Parcel 6562 – a) 33.4 acres within Sec. 3 and, b) 66.6 acres within Sec. 10 (both within 11N 76W) Parcel 6563 – a) 49.7 acres within Sec. 9 and, b) 50.3 acres within Sec. 4 (both within 11N 76W).</p>	<p>PARCEL ID: 6561 T. 0110N., R 0760W., 6TH PM Sec. 2: Lot 1-4; Sec. 2: S2N2,S2; Sec. 11: N2,SW,N2SE;</p> <p>Larimer County Colorado 1204.870 Acres</p> <p>All lands are subject to Exhibit CO-09 to protect big game winter habitat.</p> <p>PARCEL ID: 6562 T. 0110N., R 0760W., 6TH PM Sec. 3: S2; Sec. 10: ALL;</p> <p>Larimer County Colorado 960.000 Acres</p> <p>All lands are subject to Exhibit CO-</p>

No.	Commenter	Comment	BLM's Response
			<p>09 to protect big game winter habitat.</p> <p>PARCEL ID: 6563: All Deferred</p>
7	Colorado Parks and Wildlife (CPW)	<p>For White-tailed Prairie dogs, CPW recommends pre-construction surveys for active colonies and a timing stipulation to avoid direct disturbance to active colonies from March 1 through June 15. In addition, if development is prairie dogs occurs during the spring or summer months (Feb. 1 to Oct 31), the presences/absence of burrowing owls (a state threatened bird) and whether they are actively nesting should first be determined. If nesting burrowing owls are present, no human encroachment or surface disturbance should occur with 100m of nesting burrows from March 1 to August 15. If burrowing owls merely occupy the site, it is recommended that earthmoving and other disturbance activities be delayed until late fall after they have migrated. The following parcels are applicable:</p> <p style="text-align: center;">Larimer County: Parcel 6562 – 30 acres within Sec. 10 (11N 76W) Parcel 6563 – a) 191 acres within Sec. 9 and, b) 212 acres within Sec. 4 (both within 11N 76W)</p>	<p>White-tailed prairie dog involvement with the proposed lease parcels is minor and is confined to small portions of parcels 6562 and 6563 (approximately 115 acres or 4.5% of the parcels in Larimer County). Site specific mitigation measures developed at the APD stage including daily and seasonal activity restrictions and facility siting criteria would minimize or avoid adverse impacts to prairie dogs, particularly during the reproductive period.</p> <p>Although there are no known Mexican Owl nests within the proposed lease parcels, forest communities in parcels 6562, and 6563 may provide suitable nesting habitat. Raptor nest surveys are required prior to project implementation in those areas potentially influenced by proposed development activities. Information on functional nest sites found in the course of surveys are used as the basis for developing siting alternatives or applying conditions of approval that reduce the risk of nest activity disruptions that could result in reproductive failure or compromising the long-term utility of nest habitat. The combination of COAs, TLs, and siting criteria that minimize or avoid adverse modification of nest habitat character have been effective in preventing reproductive failures and maintaining the integrity of the nest substrate or woodland stands for subsequent nest functions.</p> <p>PARCEL ID: 6563 SERIAL #: All Deferred</p>
8	Colorado Parks and Wildlife (CPW)	<p>For Greater Sage grouse, CPW points out the PPH designation for your information; PPH is applicable to the following parcels:</p> <p style="text-align: center;">Larimer County:</p>	<p>PARCEL ID: 6563 SERIAL #: All Deferred</p>

No.	Commenter	Comment	BLM's Response
		<p>Parcel 6563 – 171.5 acres within Sec. 9 (11N 76W)</p> <p>CPW asks that BLM refer to the United States Department of the Interior, Bureau of Land Management Instruction Memorandum No. 2012-043 for Conservation Policies and Procedures for “Preliminary Priority Habitat” within Leasable Minerals (Energy and Non-energy) for Fluid Mineral Leasing.</p> <p>CPW also asks that the BLM also review the December 2011 National Technical Team (NTT) report titled – ‘<i>A Report on National Greater Sage-Grouse Conservation Measures</i>’, in particular sections within the Fluid Minerals: Unleased Federal Fluid Mineral Estate.</p> <ul style="list-style-type: none"> • Alternative A- close priority sage-grouse habitat to fluid mineral leasing. • Alternative B - close priority sage-grouse habitat to fluid mineral leasing. Consider an exception: <p>CPW believes that a deferral is an appropriate action for parcels in PPH and PGH until the Greater Sage-Grouse Programmatic Environmental Impact Statement is complete.</p>	
9	Colorado Parks and Wildlife (CPW)	<p>For mule deer migration corridors, CPW recommends a timing stipulation to allow for drilling and construction during the period between June 1 and November 30.</p> <p>Larimer County: Parcel 6563 – 21.9 acres within Sec. 4 (11N 76W)</p>	<p>PARCEL ID: 6563 SERIAL #: All Deferred</p>
10	Rocky Mountain Wild	<p>BLM's failure to consider the Greater sage-grouse Technical Team Report requires deferral of the following parcels: 6561, 6562, 6563, and 6596</p>	<p>PARCEL ID: 6563 SERIAL #: All Deferred</p> <p>PARCEL ID: 6596 SERIAL #: Acres Nominated: 159.290 Acres Available Acres: 80 Acres Deferred Portion: 79.29 Acres</p> <p>T. 0090N., R 0770W., 6TH PM Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat</p>

No.	Commenter	Comment	BLM's Response
			<p>The proposed lease parcels encompass historical sage-grouse habitat. A small portion of parcels 6563 and 6562 (approximately 100 acres), as well as all of 6596 is sagebrush habitat and could support sage-grouse, although they are outside the occupied habitat at this time. There are no active leks in Larimer County and the nearest active lek to parcel 6596 is 2.5 miles. If development is proposed in these areas, a thorough environmental analysis will be completed prior to any surface disturbing activities to determine potential impacts associated with the project. If Greater sage-grouse are found near the project area, impacts will be mitigated by either relocating the action or by applying conditions of approval.</p>
11	Rocky Mountain Wild	<p>The following parcels will impact bald eagle winter range should be deferred or proper stipulations should be attached: 6561, 6562, 6563.</p>	<p>PARCEL ID: 6563 SERIAL #: All Deferred</p> <p>No nests have been recorded in or near the proposed leases. Bald eagle winter foraging is dispersed and opportunistic across the entire KFO area, and is concentrated along the Laramie River, more than 1.5 miles away from the parcels. Thus, it is not likely that development of the proposed leases will impact bald eagles.</p> <p>If raptor surveys locate new nests or roosts, surface disturbing activities that have potential to disrupt important bald eagle seasonal use activities are subject to NSO and TL stipulations. These stipulations have been successful in protecting ongoing nest efforts and maintaining the long-term utility of roost and nest sites in the KFO.</p>
12	Rocky Mountain Wild	<p>Leasing within Horse Ranch Pass and Elk Mountain State Wildlife Areas for oil and gas development violates the CPW mission (6563 & 6596)</p>	<p>PARCEL ID: 6563 SERIAL #: All Deferred</p> <p>PARCEL ID: 6596 SERIAL #: Acres Nominated: 159.290 Acres Available Acres: 80 Acres Deferred Portion: 79.29 Acres</p>

No.	Commenter	Comment	BLM's Response
			T. 0090N., R 0770W., 6TH PM Sec. 7: Lot 3,4; DEFER ALL for Priority Sage-grouse habitat
13	Rocky Mountain Wild	BLM has no stipulations aimed at protecting the nature of Potential Conservation Areas. At the least, NSO stipulations should be attached to 6563	PARCEL ID: 6563 SERIAL #: All Deferred An environmental assessment would be completed if an APD is received, and could attach appropriate conditions of approval.

Comments from 30 Day Comment Period

No.	Commenter	Comment	BLM's Response
1	Timberline Events LLC Kamalah Chang Pierre Saint-Laurent Andrew Ehrnstein Rick Greer Justin Savago Holly Weik Mark Kempton Natalie Howard	<ol style="list-style-type: none"> The wells that could be developed on these lease parcels and the associated visual, light and noise pollution would drastically alter the landscape. Potential for large amounts of heavy truck traffic along CR 103 and the unacceptable risk to Wild West Relay participants. The Wild West Relay is a significant positive economic and social impact on local communities and irreplaceable recreational activity for Coloradoans and out-of-state visitors. 	<ol style="list-style-type: none"> The BLM was not aware of or informed of such event crossing BLM-administered lands. Commercial or Competitive events may require authorization under a Special Recreation Permit. Commercial or Competitive uses of BLM-administered lands without authorization may be in violation of BLM policy. The environmental assessment determines if the proposed parcels shall be leased for oil and gas development or not. If development of the leases was proposed in the future, the BLM would prepare Environmental Assessments for the APDs. If development was to occur, project proponents would have to mitigate for visual resources, light and noise pollution. For VRI Class II, all facilities, including meter buildings, would be painted a color determined by the Authorized Officer at the time of development to blend with the vegetative and/or landform setting and minimize contrast as much as possible. Additional COAs, such as landform contouring, vegetation screening, and ridgeline avoidance, may be added on a case by case basis for each APD.

No.	Commenter	Comment	BLM's Response
			<p>Each COA would be developed based on site specific analysis of the APD to reduce contrasts with the form, line, color, and texture of the surrounding landscape to ensure that the objectives of the respective VRI Class may be retained.</p> <p>2. As the race is only one day, conditions of approval added to the drilling permit could address communication and cooperation with the Wild West Relay committee.</p>
2	Red Feather Lakes Community Library	If the Wild West Relay race was cancelled due to oil and gas leasing in Larimer County, the Friends could lose income for the library as they work the exchanges in the race.	<p>The environmental assessment determines if the proposed parcels shall be leased for oil and gas development or not. If development of the leases was proposed in the future, the BLM would prepare Environmental Assessments for the APDs. At this time, BLM would expand its consideration of impacts to visual resources and recreation (including the Wild West Relay, if appropriate) as well as economic impacts to locals.</p> <p>As noted above, conditions of approval could address communication and cooperation with the Wild West Relay committee. As the race is only one day, potential future development of the leases is unlikely to prevent the event from occurring.</p>
3	Douglas Pflugh	<p>1. Disagrees with FONSI:</p> <ul style="list-style-type: none"> • Analysis indicated no significant impacts on society as a whole, the affected region, the affected interests, or the locality. • There are no unique characteristics of the geographic area. • There are no highly controversial effects on the environment. • There are no effects that are highly uncertain or involve unique or unknown risk. 	<p>1. Corrected the FONSI and have addressed possible impacts if development occurred. No impacts would occur with leasing.</p> <p>2. In an effort to balance myriad uses of the public lands, BLM staff in the Kremmling Field Office carefully review each nominated parcel to determine if it can be successfully managed under existing land use planning decisions and environmental analyses, if development was to occur. While some parcels or portions of parcels warrant deferral from leasing during</p>

No.	Commenter	Comment	BLM's Response
		<ul style="list-style-type: none"> • Sufficient information on risk is available based on information in the EA and other past actions of a similar nature.” <p>2. Defer Larimer County Parcels until RMP Revision is completed - Old RMP says there is no potential in this area.</p> <p>3. Visual Impacts</p> <ul style="list-style-type: none"> • BLM should review and expand its consideration of visual, vehicle traffic, economic and noise impacts prior to the leasing decision and note how these impacts will affect the Wild West Relay. • What is the viewshed affected by the proposed mountain top lease parcels and what activities within that viewshed will be impacted? • How will night time activity—transportation-related lights, site lighting, and particularly flaring—impact adjacent areas? • How will dust and emissions impact visual quality throughout the valley? <p>4. Truck Traffic</p> <ul style="list-style-type: none"> • What is the anticipated truck travel associated with potential development of these parcels • (type, rate, and timing)? • How does this truck travel compare with the rating of the road as currently constructed? • Will improvements be required? • Is heavy truck travel, especially night-time use, compatible with current uses of the road? 	<p>revision of the Kremmling Resource Management Plan (RMP), others, including some the parcels identified by the commenter, have been determined to be leasable with constraints, prior to completing the RMP revision. In those cases, the constraints applied are proposed in the various RMP revision alternatives to remain unchanged.</p> <p>3. The environmental assessment determines the impacts of leasing the proposed parcels for oil and gas development. If development of the leases was proposed in the future, the BLM would write Environmental Assessments for the APDs. At that time, BLM would expand its consideration of visual impacts, vehicle traffic, economic and noise impacts based on site specific information submitted with the APDs. If development was to occur, project proponents would have to mitigate for visual resources including from County Road 103 where the Wild West Relay occurs. The lease itself does not affect the viewshed. If an APD was submitted, impacts to viewsheds, lighting at night, dust, and emissions would be analyzed in the site-specific Environmental Assessment, and appropriate mitigation would be applied as conditions of approval.</p> <p>4. The Environmental Assessment determines the impacts of leasing the proposed parcels for oil and gas development. A lease does not authorize any development or use of the surface of lease lands, without further application and BLM approval. The Environmental Assessment analyzes within the Access and Transportation section potential impacts to and from potential development if the areas were to</p>

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		<p>5. Economic and Social Impacts</p> <ul style="list-style-type: none"> • How will development of the leases impact existing economic activity, both resident and transitory, in the Larimer River Valley? • What are the likely costs to maintain public infrastructure due to additional use from development of the leases? • What are the likely societal impacts on existing residents and communities of the Laramie River Valley that may result from development of the leases, in particular addressing the conversion of the rural landscape to an industrialized area and the introduction of a significant transient worker population? <p>6. Noise</p> <ul style="list-style-type: none"> • What are the general noise characteristics of development that might be reasonably expected to occur on these leases (e.g., decibel level, timing, duration, and quality)? • What are the existing levels of noise in the valley and at the parcel sites? • Are there any resources other than livestock that might be sensitive to disturbance? 	<p>be leased. The level of vehicle use is dependent on the level of development within a given area, and BLM cannot determine those factors until it receives a specific development proposal identifying which existing roads would be utilized or improved and what additional roads would be proposed. The amount and level of traffic would be analyzed upon receipt of a development proposal. It is assumed that development under the Preferred Alternative would be less than under the Proposed Action and therefore impacts would be proportionately reduced.</p> <p>5. Existing and future economic activity is addressed in the socioeconomics section. Predicting specific effects of possible lease developments would be too speculative in nature and cannot be done at this time. General economic effects of leasing and lease development are addressed in the EA. Further site specific analysis will occur at the APD stage. Costs to public infrastructure would likely increase due to lease development, however, this is highly speculative and therefore specific effects cannot be predicted at this time. However, revenue from mineral leasing and development is shared with the state and counties.</p> <p>6. The most disruptive aspects of lease development, the drilling and completion stages, are generally short-term in nature compared to the overall life of the well. Even these short-term effects of industrialization are too speculative to predict. Again, further site specific analysis will occur at the APD stage. The Environmental Assessment determines the impacts of leasing the proposed parcels for oil and gas development. A lease does</p>

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			<p>not authorize any development or use of the surface of lease lands, without further application and BLM approval. The level noise is dependent on the level of development within a given area. The general noise characteristics of development may include construction noise as sites as they are developed, vehicle noise associated with travel to and from developed sites during construction and maintenance and potential noise from facilities. Many of these noise impacts may be short term and can be mitigated through additional conditions of approval. No sound testing has been conducted at the proposed parcels for the existing ambient noise levels. Ambient noise levels and noise associated with development is dependent on several factors including distance, timing, location, topography and other environmental conditions. If parcels were to be leased and proposed for development additional Environmental Analysis would be required to determine the potential effects from the proposed development. More detailed analysis would occur at that time with potential stipulations for timing limitations and other restrictions to minimize impacts. Other resources that may be sensitive to disturbance are analyzed within the perspective sections throughout the Environmental Assessment.</p>
4	Lisha Doucet	Concerned about the heavy industrialization that comes from oil and gas drilling along with ensuing problems with water quality from oil and gas drilling for the people who depend on the water in that area.	Potential water quality concerns for leasing are addressed in the water quality section of the document. (pgs. 19, 22, 23, 25, 34, and 39).
5	Neil Clark	As a hang glider concerned about road access to launch point on the main west-facing ridge and the presence of drilling rigs or power lines might prevent safely	The environmental assessment determines the impacts of leasing if the proposed parcels shall be leased for oil and gas development or not. If development of the leases was

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		launching from the ridge or being able to fly there safely.	proposed to occur in the future, the BLM would write Environmental Assessments for all the APDs in the lease areas. At this time, BLM would expand its consideration of impacts to recreation opportunities in both the lease areas. Due to the many various options uncertainty about the precise location of future development activities, it is outside the scope of this document to speculate what and where development may occur and how it would affect recreation.
6	Denise Abate	Incredible waste of water.	The environmental assessment is to determine if the proposed parcels shall be leased for oil and gas development or not. If development of the leases was proposed to occur in the future, the project proponent would have several options in how to secure any needed water for development. Due to the many various options, it is outside the scope of this document to speculate on the amount or source of water if development were to occur. The state of Colorado, however, has published a study estimating that by 2015, hydraulic fracturing would represent slightly more than one-tenth of one percent of the total water used in the state. In 2010, coal, natural gas, uranium, and solar development, all combined represented less than 0.2% of the water used in the state.
7	Robert Baillie	<ol style="list-style-type: none"> 1. Fracking will most certainly affect public health and safety. 2. Severe impact to recreation, including horseback riding, hiking, and hunting due to greatly increased truck traffic, housing for well site workers, law enforcement issues. 	<ol style="list-style-type: none"> 1. The environmental assessment is to determine if the proposed parcels shall be leased for oil and gas development or not. The actual number of wells, locations, and whether or not they would require fracturing is speculative at this time, but would be considered in a future EA if and when drilling is proposed. The Pennsylvania (and New York) shale formations are quite different from the shale formations in Colorado. Although the volume of water needed to fracture a formation varies by the well (horizontal or vertical, total depth) and the

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			<p>associated geology, recovery volumes are generally much higher than the 20% mentioned in your letter. Recovered fluids are generally recycled and reused in additional wells, reducing the amount of water needed for fracturing. Potential for spills or possible releases is mentioned in the document (pgs.9,22,23,25,34, and 39) and would be analyzed further if and when the proposed leases are proposed for development. Oil and gas drilling and development fluids are not considered hazardous wastes nor would there be any planned project waste that would need to be addressed at this stage. The proposed deferral of parcel 6596 is based on concerns relating to sage grouse, not public comment regarding fracturing.</p> <p>2. The environmental assessment is prepared to assist in the decision whether to lease the proposed parcels for oil and gas development. If development of the leases was proposed in the future, the BLM would write Environmental Assessments for the APDs. At that time, BLM would expand its consideration of impacts to recreation opportunities in the lease areas. Due to uncertainty about the precise location of future development activities, it is outside the scope of this document to speculate what and where development may occur and how it would affect recreation.</p>
8	Kyrun Cadmus	Hiking, camping, horseback riding and other forms of recreation are not compatible with oil and gas production on Bull Mountain.	The BLM's multiple-use mission, set forth in the Federal Land Policy and Management Act of 1976, mandates that we manage public land resources for a variety of uses, such as energy development, livestock grazing, recreation, and timber harvesting, while protecting a wide array of natural, cultural, and historical resources, Laramie River

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			<p>Valley is part of the Kremmling Extensive Resource Management Area (ERMA). ERMAs receive limited management for dispersed types of recreation and custodial actions but are not managed specifically for recreation. The Environmental Assessment analyzed if the proposed parcels are to be leased for oil and gas development or not. Any potential lease does not authorize any development or use of the surface of lease lands, without further application and approval by the BLM. The level of impact on existing or future recreational opportunities is dependent on the level of development within a given area. Until such development is proposed the level of impact cannot directly identified and would be analyzed at that time.</p>
9	Peter Cadmus	<ol style="list-style-type: none"> 1. As a hang glider concerned about road access to launch point on the main west-facing ridge and the presence of drilling rigs or power lines might prevent safely launching from the ridge or being able to fly there safely. 2. Raptor prey base would be decreased by oil and gas exploration. Beautiful sites and wildlife viewing. 	<ol style="list-style-type: none"> 1. The environmental assessment is to determine if the proposed parcels shall be leased for oil and gas development or not. If development was to occur in the future, the BLM would write Environmental Assessments for all APDs in the lease areas. At this time, BLM would expand its consideration of recreation opportunities in both lease areas. Due to the many various options and speculative nature of development, it is outside the scope of this document to speculate what and where development may occur and how it would affect recreation. 2. As stated in the EA, raptor nest surveys are required prior to development. Impacts to the raptor prey base would be considered in a future EA if and when drilling is proposed
10	David Willett Rick Robinson Michelle Orozco Robert Jessen Grayson Graff	<ol style="list-style-type: none"> 1. Landowner concerned about well water quality if drilling occurs. 2. Concerned about elk and other wildlife population. 	<ol style="list-style-type: none"> 1. Potential groundwater contamination is disclosed in the environmental assessment on pages 22-23. If and when the proposed leases are to be developed, a more in depth analysis and review would be done. State and federal drilling

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			<p>regulations and procedures require the protection of all freshwater zones. See response to Bailie regarding hydraulic fracturing.</p> <p>2. Impacts to elk and other wildlife are addressed in the EA. Site-specific impacts would be considered in a future EA if and when drilling is proposed.</p>
11	Nada Culver, Senior Counsel and Director, The Wilderness Society	<ol style="list-style-type: none"> 1. Parcel 6956 is located in big game winter range and summer range for moose and pronghorn. The Larimer County parcels have seasonal range for big game, an elk production area and a mule deer migration corridor. 2. BLM should not lease parcels 6561 and 6562 as these parcels have other resource values that are greater than oil and gas development, which BLM has acknowledged as having no value in this area. 3. Larimer County parcels are encompassed in the Kremmling ERMA which BLM is managing to provide the general public with a highly diverse range of outdoor recreational activities which are unlikely to continue in the face of oil and gas development. 4. The assumption that regulatory measures imposed to avoid erosion and spills effecting 2 cold water creeks that provide fish habitat and riparian areas is not based on specific evidence and rather on an unrealistic assumption that all spills can reliably be prevented. 5. There are cultural and historical resources in the area that have not yet been adequately defined. 6. In order to ensure that the RMP and RFD are consistent with 	<ol style="list-style-type: none"> 1. Impacts to big game are addressed in the EA. Stipulations CO-09 and CO-10 would be added to the leases for big game protection in the Preferred Alternative. Site-specific impacts would be considered in a future EA if and when drilling is proposed. 2. The BLM's multiple-use mission, set forth in the Federal Land Policy and Management Act of 1976, mandates that we manage public land resources for a variety of uses, such as energy development, livestock grazing, recreation, and timber harvesting, while protecting a wide array of natural, cultural, and historical resources. 3. Laramie River Valley is part of the Kremmling Extensive Resource Management Area (ERMA). ERMAs receive limited management for dispersed types of recreation and custodial actions but are not managed specifically for recreation. The Environmental Assessment analyzed the impacts of leasing the proposed parcels for oil and gas development. A lease does not authorize any development or use of the surface of lease lands, without further application and approval by the BLM. The level of impact on existing or future recreational opportunities is dependent on the level of development within a given area. Until such development is proposed, the

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		<p>concurrent events, BLM should commit to deferring leasing until completion of the RMP.</p>	<p>level of impact cannot be directly identified. Analysis would occur at that time.</p> <p>4. Potential spills and contamination due to erosion are disclosed in the environmental assessment (19, 22, 25, 34, 39). Available leasing stipulations to protect the fish habitat and riparian areas would be required. Additional analysis of potential impacts is not possible at the leasing stage, but is applied when and if the leases are proposed for development, with additional restrictions possible at that time.</p> <p>5. In compliance with the National Historic Preservation Act of 1966, as amended and its implementing regulations prior to approving any surface disturbing activities, a Class III cultural resource inventory would be conducted in accordance with Section 106 of the Act. Historic properties would be identified and evaluated for the National Register of Historic Places. If an historic property is evaluated as significant the preferred mitigation measure is site avoidance. Tribal consultation would be initiated at the start of any undertaking to consult with the five affiliated tribes concerning traditional cultural properties that would potentially be affected by the undertaking and the necessary mitigation measure such as, avoidance would be utilized.</p> <p>6. In an effort to balance myriad uses of the public lands, BLM staff in the Kremmling Field Office carefully review each nominated parcel to determine if it can be successfully managed under existing land use planning decisions and environmental analyses, if development was to occur. While some parcels or portions of parcels warrant</p>

No.	Commenter	Comment	BLM's Response
			<p>deferral from leasing during revision of the Kremmling Resource Management Plan (RMP), others, including some the parcels identified by the commenter, have been determined to be leasable with constraints, prior to completing the RMP revision. In those cases, the constraints applied are proposed in the various RMP revision alternatives to remain unchanged.</p>
12	Woods Land Resort	<p>Excessive truck traffic on county road. Economic impact to the resort if the Wild West Relay was cancelled.</p>	<p>As the race through this area is only one day, potential future development of the leases is unlikely to prevent the event from occurring. COAs could be added at the time of development to curb the use of truck traffic on the day of the race.</p>
13	Trout Unlimited	<ol style="list-style-type: none"> 1. All proposed Lease Sales should be deferred until the RMP revision is completed. BLM's reliance on outdated documents and science resources in making its present leasing decisions, places the current and future resources and landscapes at risk. 2. BLM EA does not include consistent conformance with the BLM's IM 2010-117 for Consideration of New Information. The IM includes examining resource management decisions adequacy to determine whether the RMPs adequately protect important resource values in light of changing circumstances, updated policies and new information. 3. Lease stipulations are inadequate and require a lease stipulation review. Leasing Reform requires edge-matching stipulations. LSFO has recently implemented a new stipulation of a quarter-mile buffer for streams and riparian areas, whereas KFO's CO028 is less and should implement the same 	<ol style="list-style-type: none"> 1. In an effort to balance myriad uses of the public lands, BLM staff in the Kremmling Field Office carefully review each nominated parcel to determine if each nominated parcel can be successfully managed under existing land use planning decisions and environmental analyses, if development was to occur. While some parcels or portions of parcels warrant deferral from leasing during revision of the Kremmling Resource Management Plan (RMP), others, including some the protested parcels, have been determined to be leasable with constraints, prior to completing the RMP revision. In those cases, the constraints applied are proposed in the various RMP revision alternatives to remain unchanged. 2. New information or circumstances are considered during the initial analysis of parcels nominated for leasing. In light of new information or circumstances, parcels are proposed for deferral when there are resources that would not be protected adequately using tools

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		<p>buffer setback as neighboring office.</p> <p>4. Parcel 6596 should be deferred until a MLP is developed and implemented in the North Park Basing.</p> <p>5. TU supports a NSO restriction with a recommended increase of buffer widths to a quarter-mile buffer on all perennial streams and CPW Gold Medal waters.</p> <p>6. BLM should attach stipulations to the lease parcels that include baseline water testing prior to any drilling, to conduct monthly sampling during drilling and to sample after drilling has been completed.</p> <p>7. Water quantity issues should be addressed, including how the extraction of large amounts of water required to drill and fracture a well will affect adjacent users and municipalities.</p> <p>8. Supports an NSO stipulation for big game habitat protection that covers both development and O&M operations in areas containing big game critical winter range, severe winter range and critical summer/fawning/calving range.</p> <p>9. Timing stipulations applied only during exploration and development, do not adequately prevent impacts to big game.</p>	<p>currently available. One example is the deferral of nominated leases in sage grouse core areas.</p> <p>3. Edge matching stipulations are for adjacent lands. The proposed leases are not adjacent to the LSFO's lands. All available lease stipulations to protect water quality and fish habitat are applied to the proposed leases. If and when the leases are proposed to be developed, measures designed to achieve similar goals to the draft Colorado statewide stipulations (DRAFT Lease Sale Notice and Lease Form Soils, Water, Wetlands, Fish and Aquatic Habitat Oil and Gas Stipulations) can be applied as COAs if necessary.</p> <p>4. The BLM must prepare an MLP when certain criteria are met. After a thorough analysis, the BLM determined that the proposed MLP did not meet all of the criteria established in the IM. As a result of the analysis, an MLP was determined not to be warranted.</p> <p>5. If and when the leases are proposed to be developed, the draft Colorado statewide stipulations (DRAFT Lease Sale Notice and Lease Form Soils, Water, Wetlands, Fish and Aquatic Habitat Oil and Gas Stipulations) or more restrictive measure can be applied as conditions of approval s if necessary.</p> <p>6. The Colorado Oil and Gas Commission requires water quality testing.</p> <p>7. Water quantity necessary for development can vary greatly by the actual plan of development. At the leasing stage, it is impossible to speculate the quantity and the source of water</p>

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			<p>for energy development. At the APD stage, the proponent gives an estimate of water needed, which varies depending on the projected well depth and type of drilling process, and the source of the water. The state of Colorado administers the water quantity component of energy development. It is the responsibility of the project proponent to have adequate water rights to complete their project, and the water rights are administered by the state's Division of Water Resources. The BLM also requires that the depletions are covered by Section 7 consultations to protect threatened and endangered species. In a 2012, a fact sheet prepared by the Colorado Division of Water Resources, Colorado Water Conservation Board, and the Colorado Oil and Gas Conservation Commission, state that the amount of fluids required depends on a variety of factors, and that the overall projected amount of water for hydraulic fracturing represents a very small amount in the state's total use of water. The KFO has not been provided a water source for hydraulic fracturing or well drilling to date.</p> <p>8. Impacts to big game are addressed in the EA. Stipulations CO-09 and CO-10 would be added to the leases for big game protection in the Preferred Alternative. Site-specific impacts would be considered in a future EA if and when drilling is proposed.</p> <p>9. Timing stipulations can be added as a condition of approval to the APD if the lease were to be developed and the environmental assessment determined it was warranted above and beyond those stipulations on the lease.</p>
14	Colorado Wildlife	1. BLM should finalize the new	1. In an effort to balance myriad

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	Federation	<p>RMP for the KFO before leasing any new parcels or, at the very least, any new parcels with potential sage grouse or other high-value/high-risk resources.</p> <p>2. Larimer County parcels serve as winter range for elk and moose contains mule deer migration corridors.</p> <p>3. Parcels like in historical greater sage-grouse habitat and the greater Sage-grouse Programmatic EIS has not been completed. Interim management guidelines to be followed until all management areas have completed RMP revisions state field offices should seek to maintain, enhance, or restore conditions for the sage-grouse and its habitat.</p>	<p>uses of the public lands, BLM staff in the Kremmling Field Office carefully review each nominated parcel to determine if it can be successfully managed under existing land use planning decisions and environmental analyses, if development was to occur. While some parcels or portions of parcels warrant deferral from leasing during revision of the Kremmling Resource Management Plan (RMP), others, including some the parcels identified by the commenter, have been determined to be leasable with constraints, prior to completing the RMP revision. In those cases, the constraints applied are proposed in the various RMP revision alternatives to remain unchanged.</p> <p>2. Impacts to big game are addressed in the EA. Stipulations CO-09 and CO-10 would be added to the leases for big game protection in the Preferred Alternative. Site-specific impacts would be considered in a future EA if and when drilling is proposed.</p> <p>3. Parcels in Sage-grouse Preliminary Priority Habitat (PPH) and Preliminary General Habitat would be deferred in Preferred Alternative. Impacts to sage-grouse from the proposed lease sale or future development are not expected to occur.</p>
15	Northern Colorado Environmental Alliance	<p>1. Air quality in the valley and the Rawahs will be affected.</p> <p>2. Big game habitat loss due to oil and gas development, including improvement of roads.</p> <p>3. Water quality will be compromised by fracking or spills. Loss of millions of gallons of water.</p> <p>4. Areas now open to recreation</p>	<p>1. Potential air quality impacts, including those to the Rawahs, are disclosed in the air quality section of the document. The predominant wind direction is from the southwest, not the northwest as stated in your letter. The environmental assessment explains that if and when the proposed leases are proposed for development, the specific locations would be further reviewed for air quality concerns</p>

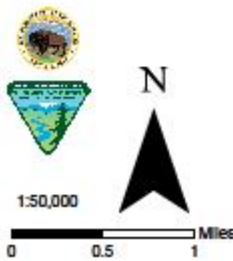
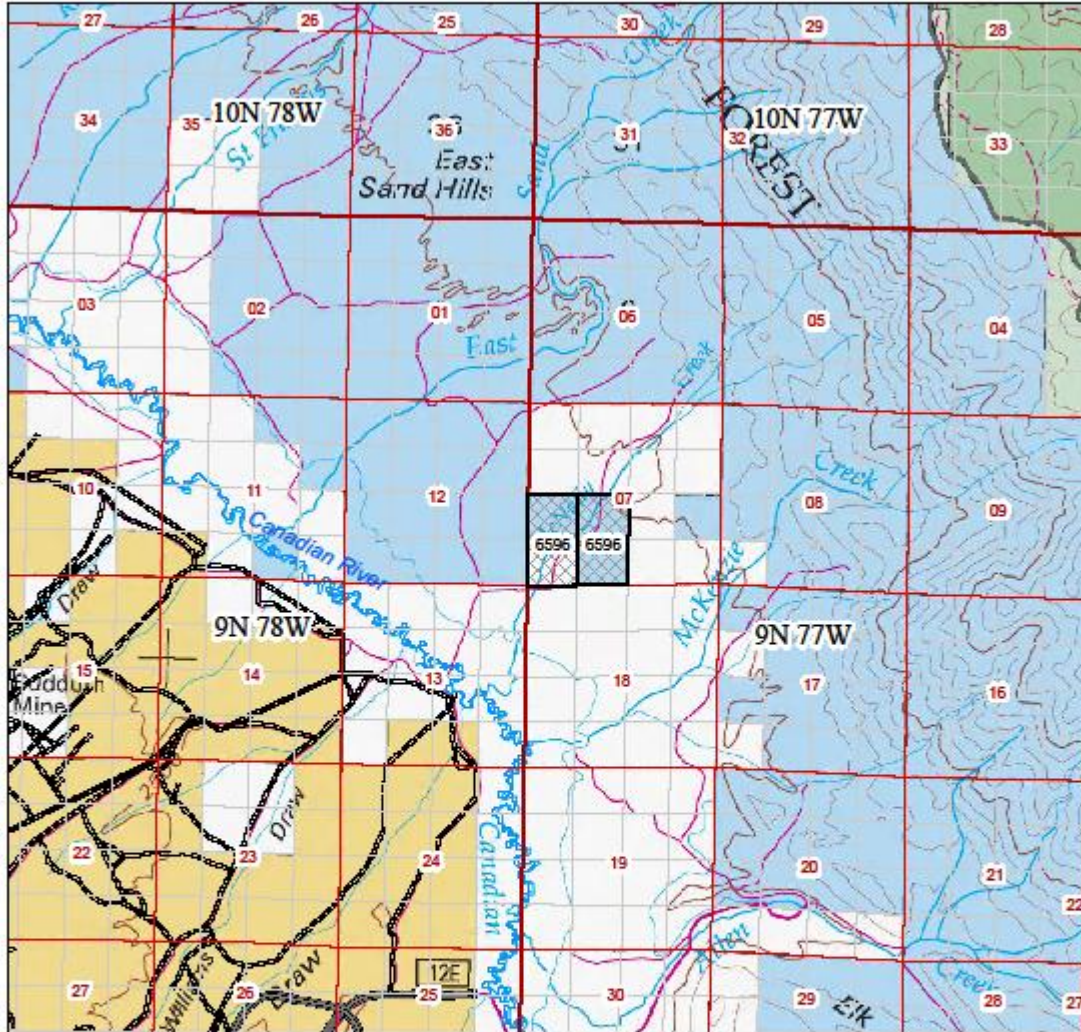
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		<p>may be closed which may cause substantial financial loss to local businesses.</p>	<p>and that additional air modeling may be required for the Rawahs, prior to any approval.</p> <p>2. Impacts to big game are addressed in the EA. Stipulations CO-09 and CO-10 would be added to the leases for big game protection in the Preferred Alternative. Site-specific impacts would be considered in a future EA if and when drilling is proposed.</p> <p>3. Water needs and potential sources can vary greatly by development. If the parcels are leased and development is proposed, at that time, the estimated quantity of water and its source will be described. If water were to be taken from a surface water source such as the Laramie River or Hohnholz Reservoir, it would have to be according to state water laws and administration, to protect existing rights.</p> <p>4. The environmental assessment is used in the decision whether to lease the proposed parcels shall for oil and gas development. If development of the leases is proposed in the future, the BLM would write Environmental Assessments for the APDs. At that time, BLM would expand its consideration of impacts to recreation opportunities. Due to the many various options, it is outside the scope of this document to speculate what and where development may occur and how it would affect recreation.</p>
16	Rocky Mountain Wild	<p>1. Leasing large acreage of important sage-grouse habitat, prior to completion of regional conservation planning efforts, will push the species closer to a full listing and must therefore be avoided.</p> <p>2. The Larimer County parcels</p>	<p>1. Parcels in Sage-grouse Preliminary Priority Habitat (PPH) and Preliminary General Habitat would be deferred under the Preferred Alternative. Impacts to sage-grouse from the proposed lease sale or future development are not expected to occur.</p>

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		<p>will impact bald eagle winter range should be deferred or proper stipulations should be attached to these parcels aimed at protection of the species.</p> <p>3. Leasing within the State Wildlife Areas for oil and gas development violates the primary mission of CPW.</p> <p>4. Leasing would result in unacceptable impacts to specially designated areas (PCA) and would be incompatible with the purposed of the designation.</p> <p>5. BLM must consider alternative to the proposed action that may address unresolved resource conflicts including the proposal to defer all high and medium priority sage grouse habitat.</p> <p>6. The current RMP and O&G amendment do not consider new circumstances such as the imperiled status of the greater sage grouse and the recent intensity of O&G development in the KFO.</p>	<p>2. As stated in the EA, raptor surveys are required prior to development. Site-specific impacts to bald eagles would be considered in a future EA if and when drilling is proposed. If raptor surveys locate new bald eagle nests or roosts, surface disturbing activities that have potential to disrupt important bald eagle seasonal use activities are subject to NSO and TL stipulations.</p> <p>3. There are no parcels located in State Wildlife Areas proposed for leasing.</p> <p>4. There are no parcels located in PCAs proposed for leasing.</p> <p>5. Parcels in Sage-grouse Preliminary Priority Habitat (PPH) and Preliminary General Habitat would be deferred under the Preferred Alternative. Impacts to sage-grouse from the proposed lease sale or future development are not expected to occur.</p> <p>6. New information or circumstances are considered during the initial analysis of parcels nominated for leasing. In light of new information or circumstances, parcels are proposed for deferral when there are resources that would not be protected adequately using tools currently available. One example is the proposed deferral of nominated leases in sage grouse core areas.</p>
17	David Mickelson	Both the south and the west slope of Bull Mountain down to the Laramie River is a release area for the black-footed ferret. The U.S. Federal Government has been releasing the black-footed ferret in that area for years.	According to Colorado Parks and Wildlife, District Wildlife Manager Jim Jackson, this information is not valid.

7.6 ATTACHMENT F: MAPS

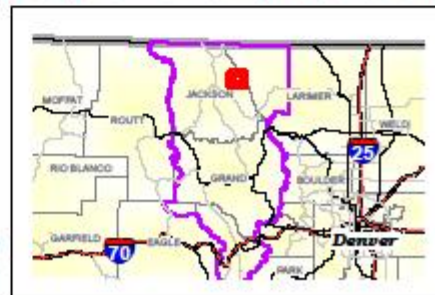
Proposed Alternative

Bureau of Land Management - Colorado - Kremmling Field Office
 May 2013 - Colorado Competitive Oil and Gas Lease Sale
 Nominated Parcels within T. 9 N., R. 77 W in Jackson County



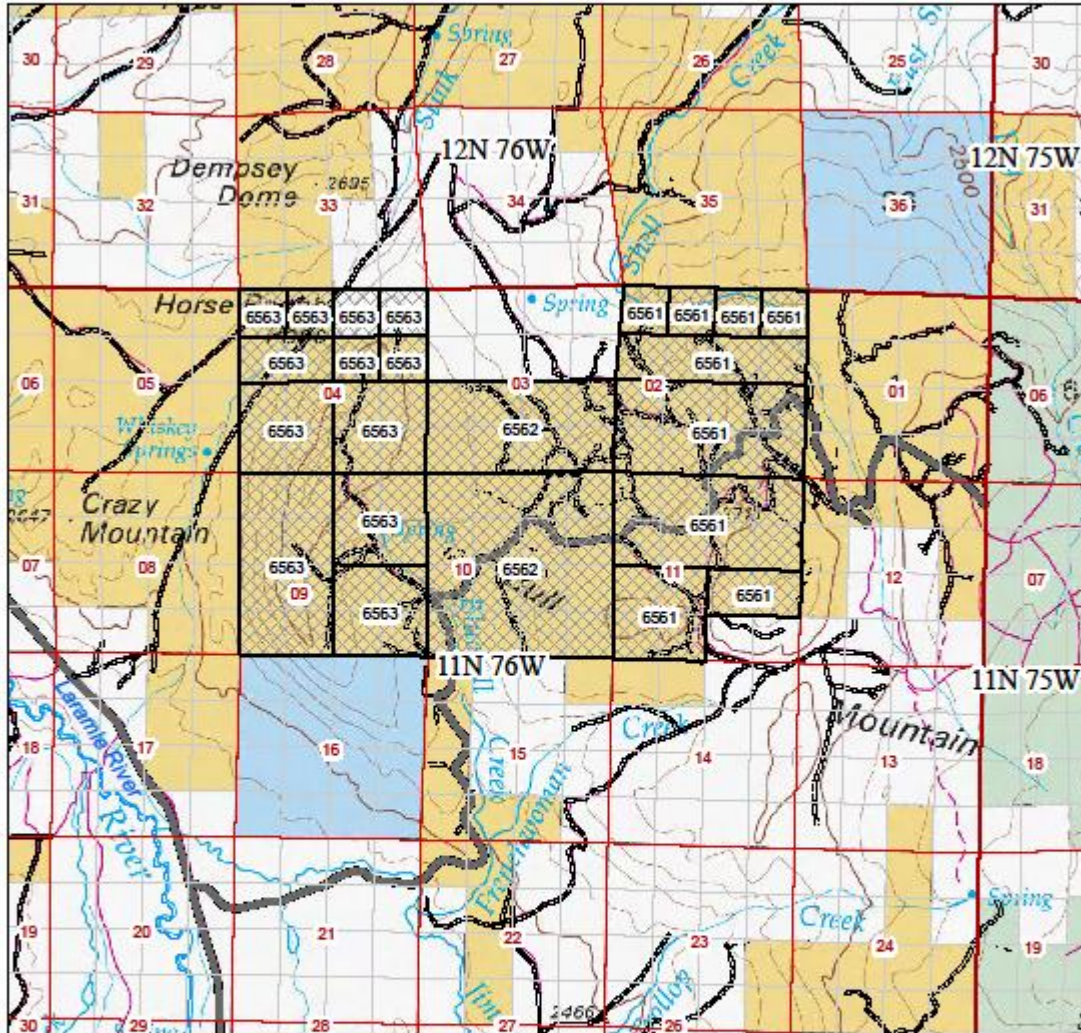
- Nominated Parcels
- Bureau of Land Management
- Interstate
- State
- U.S.
- State, County, City, Areas
- State
- US Fish and Wildlife Service
- Trail
- US Forest Service
- Major Road
- Primitive Road

No warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data. For graphical purposes only and not for navigation. This map was intended to be printed in color. Last Edited: SGV, 09/14/2012.



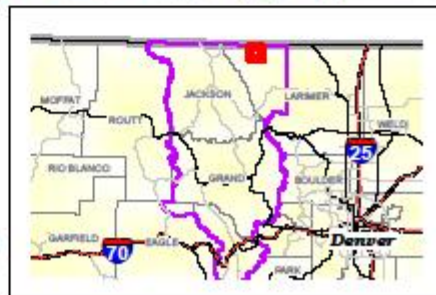
Proposed Alternative

Bureau of Land Management - Colorado - Kremmling Field Office
 May 2013 - Colorado Competitive Oil and Gas Lease Sale
 Nominated Parcels within T. 11 N., R. 76 W in Larimer County



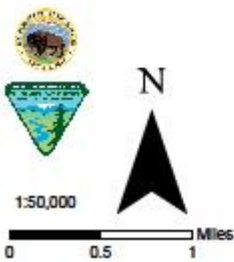
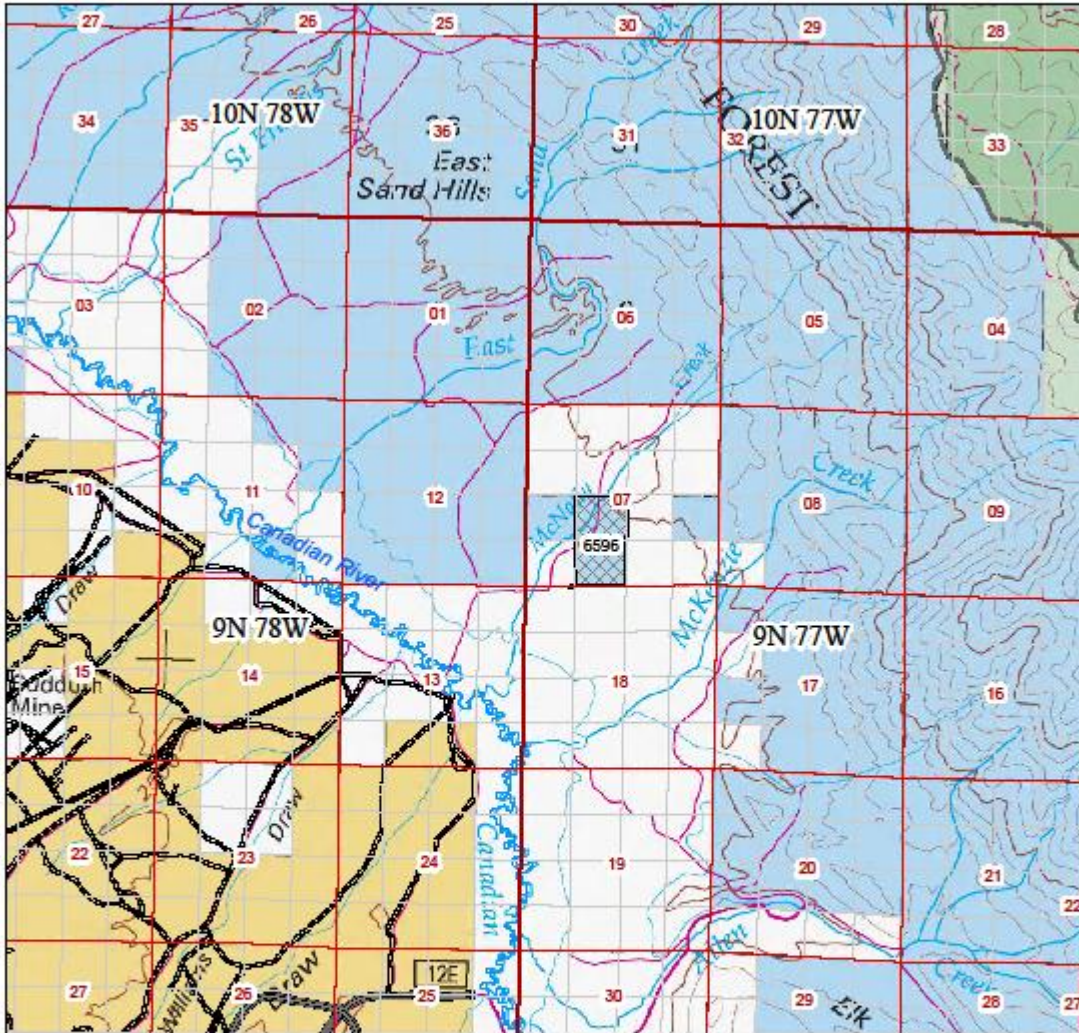
- | | | | |
|--|-------------------|--|------------------------------|
| | Nominated Parcels | | Bureau of Land Management |
| | Interstate | | State |
| | U.S. | | State, County, City, Areas |
| | State | | US Fish and Wildlife Service |
| | Trail | | US Forest Service |
| | Major Road | | |
| | Primitive Road | | |

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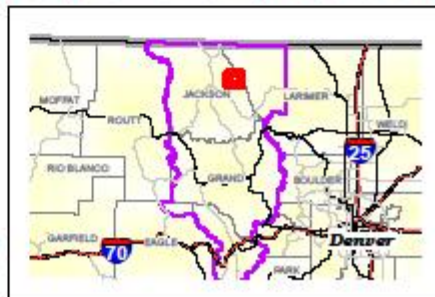
Preferred Alternative

Bureau of Land Management - Colorado - Kremmling Field Office
 May 2013 - Colorado Competitive Oil and Gas Lease Sale
 Parcels within T. 9 N., R. 77 W in Jackson County



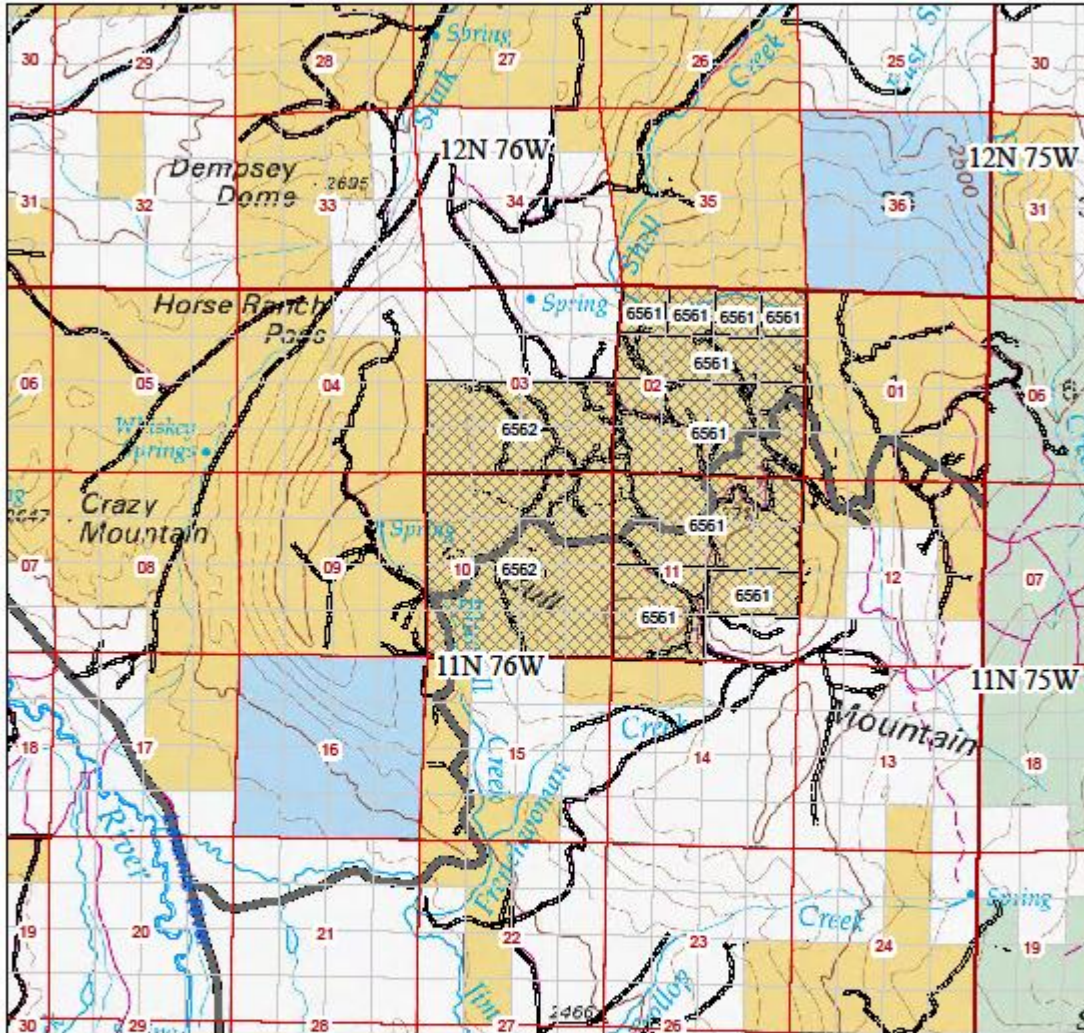
- | | |
|----------------|------------------------------|
| Interstate | Bureau of Land Management |
| U.S. | State |
| State | State, County, City, Areas |
| Parcels | US Fish and Wildlife Service |
| Trail | US Forest Service |
| Major Road | |
| Primitive Road | |

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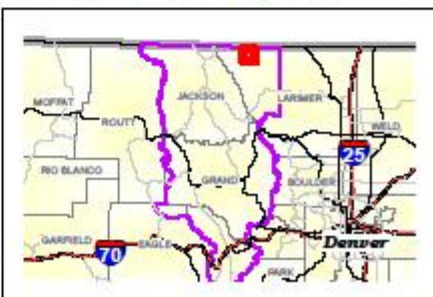
Preferred Alternative

Bureau of Land Management - Colorado - Kremmling Field Office
 May 2013 - Colorado Competitive Oil and Gas Lease Sale
 Nominated Parcels within T. 11 N., R. 76 W in Larimer County



- Interstate
- U.S.
- State
- Parcels
- Trail
- Major Road
- Primitive Road
- Bureau of Land Management
- State
- State, County, City, Areas
- US Fish and Wildlife Service
- US Forest Service

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U.S. Department of the Interior
Bureau of Land Management
Kremmling Field Office
P O Box 68
Kremmling, CO 80459

Finding of No Significant Impact (FONSI)

DOI-BLM-LLCON02000-0054-EA

BACKGROUND

Three parcels comprising approximately 2,244.87 acres in the Kremmling Field Office (KFO) are proposed for leasing in the May 2013 Colorado Competitive Oil and Gas Lease Sale (see Attachment C of the Environmental Assessment for complete legal descriptions). These parcels could be offered at public auction. Following the auction, any unsold parcels could be sold non-competitively. Additional site specific analyses would take place upon submission of individual Applications for Permits to Drill (APD).

FINDING OF NO SIGNIFICANT IMPACT

Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the Preferred Alternative will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Context

The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance.

Intensity

The following discussion is organized around the 10 Significance Criteria described at 40 CFR 1508.27. The following have been considered in evaluating intensity for this Proposed Action:

1. Impacts that may be both beneficial and adverse.

Beneficial, adverse, direct, indirect, and cumulative environmental impacts have been disclosed in the EA. There could be a significant benefit to the economy if these leases were developed. The adverse impacts could occur to air, soils, wildlife habitat, and water quality if the leases were developed. Analysis indicated that leasing the parcels would have 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 Laramie and Jackson Counties, the Kremmling Field Office and State land.

2. The degree to which the proposed action affects public health and safety.

Public health and safety would not be adversely impacted by leasing. If BLM approves development of the lease parcels, lease stipulations, together with conditions of approval attached to the drilling permits, will protect public health and safety and require proper management of project waste and hazardous materials.

3. Unique characteristics of the geographic area such as proximity of historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

There are unique historic and cultural characteristics in the area of the proposed parcels. These parcels will be deferred under the preferred alternative. There are no park lands, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas in the geographic area.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

There are no highly controversial effects on the environment from leasing. Lease stipulations, and conditions of approval on future drilling permits, ensure the quality of the human environment is protected. Conditions of approval would be applied based on site-specific analysis of impacts from proposed development.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

There are no effects of leasing that are highly uncertain or involve unique or unknown risk. The EA describes possible direct, indirect, and cumulative effects of leasing based on known information about the affected environment and other past actions of a similar nature. If development is proposed, the BLM will conduct site-specific analysis of the impacts of the proposed development activities.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

This Preferred 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. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

Leasing the parcels is not related to other actions with cumulatively significant impacts. No cumulatively significant impacts were identified or are anticipated.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historic resources.

The parcels that are proposed for leasing under the preferred alternative would have no adverse impacts that would affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would leasing the parcels cause loss or destruction of significant scientific, cultural, or historic resources.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

No adverse impacts from leasing to any threatened or endangered species or their habitat were identified. If, at a future time, potential adverse impacts associated with proposed development were identified, site specific proposals would be modified or mitigated to reduce or eliminate adverse effects to listed species.

10. Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

The Preferred Alternative complies with relevant Federal, State, and local laws, regulations, and requirements for the protection of the environment.

SIGNATURE OF AUTHORIZED OFFICIAL:

_____

Deputy State Director
Energy, Lands, and Minerals

DATE SIGNED:

May 8, 2013