U.S. Department of the Interior
Bureau of Land Management
2300 River Frontage Road
Silt, Colorado 81652

ENVIRONMENTAL ASSESSMENT

NEPA NUMBER

DOI-BLM-CO-N040-2011-0075-EA

CASEFILE NUMBER

Parcel 6052, Serial #

PROJECT NAME

November 2011 Competitive Oil and Gas Lease Sale

LOCATION

Approximately 1.9 miles southwest of Silt, Garfield County, Colorado (Figure 1 and Attachment A).

LEGAL DESCRIPTION

Tracts of land in the SWSW of Section 16, Township 6 South, Range 92 West, 6th Principal Meridian, being more particularly described as follows:

Beginning at a point which lies 450.5 feet North and 150.6 feet East of the Southwest corner of said Section 16, said point being the Southwest corner of said tract, thence North 00º 34' West 740.0 feet; thence North 89º 26' East 610.0 feet; thence South 00º 34' East 740.0 feet; thence South 89º 26' West 610.0 feet to the point of beginning, containing 10.4 acres, more or less.

Also, beginning at a point on the East line of the Rifle Substation Site, 450.6 feet North and 760.6 feet East of the Southwest corner of said Section 16; thence North 00º 34' West along said East line 197.8 feet; thence North 89º 26' East 403.2 feet to the Westerly right-of-way line of Curecanti-Hayden Transmission Line; thence South 11º 28' East along said right-of-way line 148.2 feet; thence South 82º 31' West 434.4 feet to the point of beginning, containing 1.7 acres, more or less.

Total Acres: 12.100 more or less

PROPOSED ACTION

The Bureau of Land Management (BLM), Colorado State Office (COSO), proposes to lease, through competitive lease sale on November 2011, a parcel including 12.1 acres of Federal mineral estate for the purpose of oil and gas exploration and development. The parcel, identified as Parcel 6052, was nominated for leasing by an oil and gas production company. The parcel underlies an equivalent area parcel of surface land owned in fee simple by the U.S. Department of Energy (DOE), Western Area Power Administration (WAPA). The surface is currently occupied by WAPA's Rifle Substation.

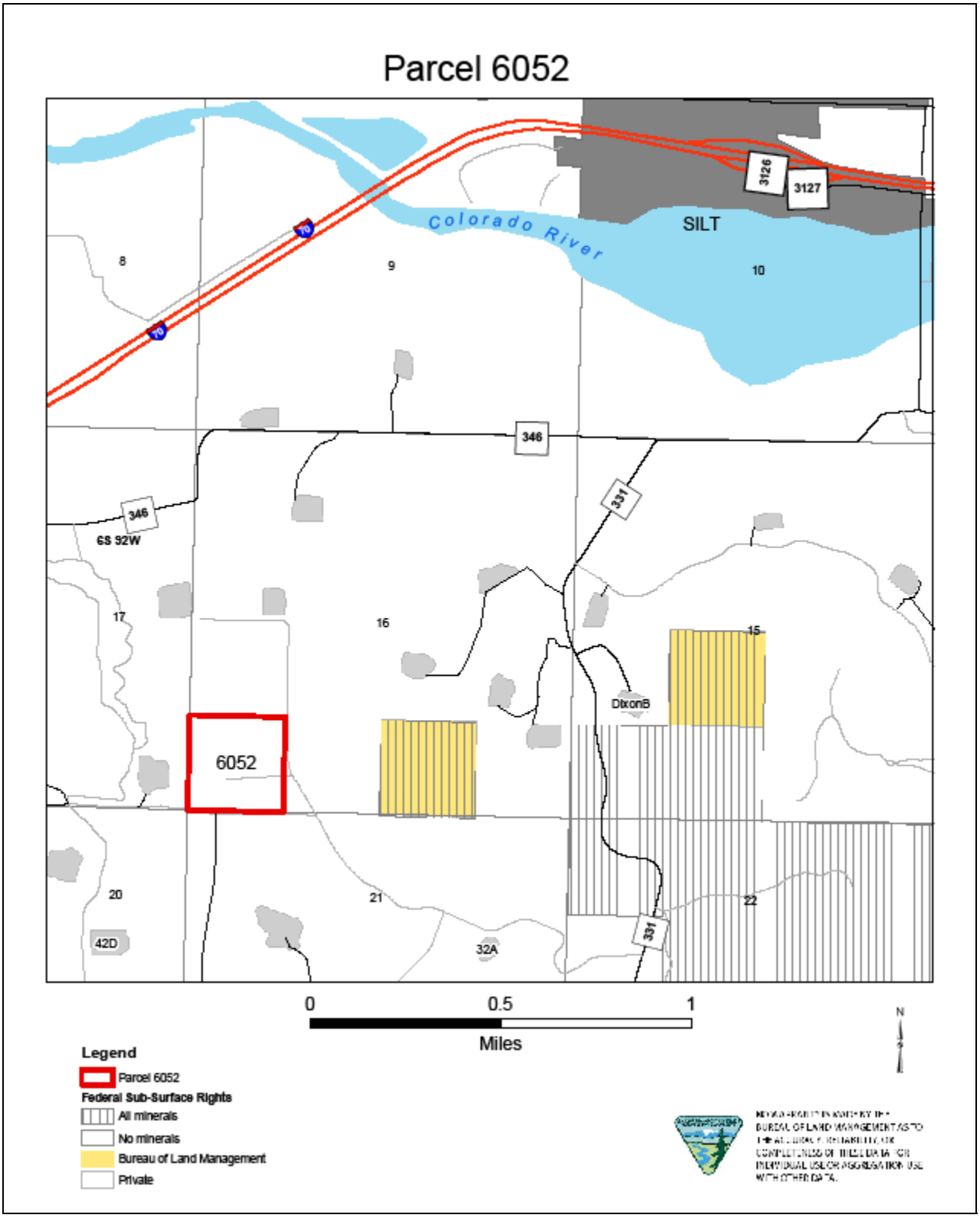

Figure 1. Location of Parcel 6052, November 2011 Oil and Gas Lease Sale

Availability of the mineral estate underlying this 12.1-acre tract of land is outlined in the title information provided in Attachment D. The proposed lease sale, if completed, would include the attachment of standard stipulations associated with Federal oil and gas leases, as well as statewide stipulations identified as appropriate by the COSO and additional stipulations identified as appropriate by the Colorado River Valley Field Office (CRVFO), which manages Federal mineral estate lands within its boundary. The CRVFO is located in Silt, Colorado, and was formerly located in Glenwood Springs, Colorado, where it was known as the Glenwood Springs Field Office (GSFO).

If and when Parcel 6052 is leased for oil and gas development, the CRVFO would apply, in addition to protective stipulations attached to the lease, the standard conditions of approval (COA) that it attaches to all authorizations for surface-disturbing activities associated with oil and gas operations. Standard COAs and site-specific COAs would be applied, as appropriate, during the review of any development plan.

NO ACTION ALTERNATIVE

The No Action Alternative would constitute a decision by the BLM to not lease, or to defer leasing, of the 12.1 acres of Federal mineral estate described in this EA. Such a decision would preclude the development of the oil and gas resources potentially contained within that area of Federal mineral estate until such time as a lease sale is made.

ACTIONS CONSIDERED BUT NOT ANALYZED IN DETAIL

Originally, two additional parcels (6068 and 6069) located in whole or in part within the CRVFO area were considered for inclusion in the November 2011 oil and lease sale (see Figure 2 and Attachment A). However, the CRVFO determined during its internal scoping process that deferral of both parcels is appropriate (see Attachment B). That determination was based on the following:

- Parcel 6068 (**deferred**) includes 1,480.00 acres in portions of both the CRVFO and the Grand Junction Field Office (GSFO) administrative areas. During internal scoping, the CRVFO determined that making its portion of Parcel 6068 available for the November 2011 lease sale could foreclose future management options that may be available under the revised. These include potential new lease stipulations related primarily to special status plants that would be applied under some of the alternatives being analyzed for incorporation into a revised Resource Management Plan (RMP).

  As an additional consideration, the GJFO has decided to recommend deferral of Parcel 6068 because it is contained within the Shale Ridges and Canyons Master Leasing Plan (MLP) Recommendation submitted to the BLM Colorado State Office by environmental groups. That recommendation for completion of an MLP prior to leasing Parcel 6068 cited various sensitive resource values, including Federally listed, proposed, or candidate threatened or endangered plant and animal species. The BLM Colorado State Office has committed to addressing resource concerns raised in recommendations for MLPs in conjunction with RMP revisions currently underway in Colorado. Consequently, the CRVFO concurs with the decision by the GJFO to defer Parcel 6068.

- Parcel 6069 (**deferred**) includes 120.00 acres located entirely within the CRVFO. This parcel was not identified in the MLP recommendations by environmental groups. Nonetheless, internal scoping, including preliminary field surveys and review of existing information, has indicated that making Parcel 6069 available for the November 2011 lease sale could foreclose future management options relating to special status plants under the revised RMP and that the parcel should be deferred.

Because Parcels 6068 and 6069 are recommended for deferral, they are not addressed further in this EA.

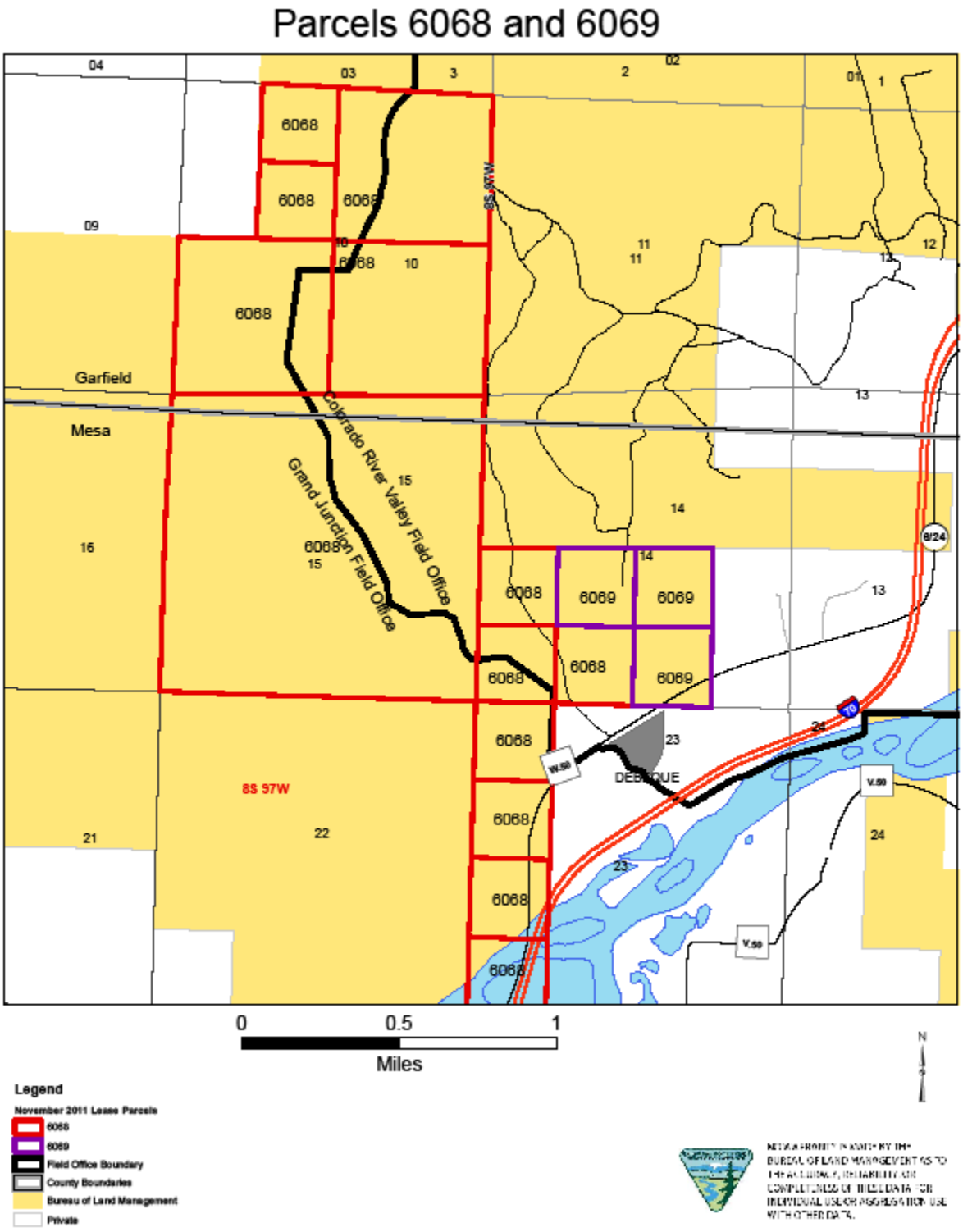

Figure 2. Location of Parcels 6068 (deferred) and 6069 (deferred), November 2011 Lease Sale

PURPOSE AND NEED FOR THE ACTION

The purpose of the Proposed Action is to make available, for commercial development, natural gas and associated condensate resources contained within the subject parcel. The action is needed to increase the production of oil and gas resources for marketing to the public. Benefits associated with development of the Federal oil and gas resources include reduced reliance on foreign sources of energy, increased availability of natural gas as an alternative to coal to help reduce greenhouse gas emissions associated with the generation of electricity, and reduced energy costs to consumers.

LEASE STIPULATIONS

Leasing of the Federal oil and gas mineral estate in Parcel 6052 would carry with it the protective stipulations summarized in Table 1. More detailed descriptions are provided in Attachment C. Stipulations numbered CO-34 and CO-39 are BLM statewide stipulations in Colorado. The stipulation numbered DOE-09 is in relation to surface occupancy by the Rifle Substation. The stipulation numbered GS-TL-1 is specific to the CRVFO (formerly the GSFO) under the current land use plan (BLM 1999b).

Table 1. Lease Notices and Stipulations Applicable to Parcel 6052

Number	*Where Applicable*	*Stipulation Title and Synopsis*
CO-34	All lands	**Endangered Species Act Section 7 Consultation**: The lease area may now or hereafter contain plants animals determined to be threatened, endangered, or of other special status and/or their habitats. The 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.
CO-39	All lands	**Controlled Surface Use**: This lease may be found to contain historic properties and/or resources protected under the National Historic Preservation Act (NHPA). 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.
DOE-09	All lands	**No Surface Occupancy**: Protection of Western Area Power Administration, Rifle Substation: No well pad can occur within the boundaries of the fee lands owned by WAPA, and all drilling activity must be conducted outside the perimeter fence. Exception criteria: The BLM may authorize oil and gas activities consistent with the following: Any well pad shall be located such that if the drill rig topples, it would not hit the approach spans of the electrical transmission lines leading to/from the Rifle Substation. (3) If the lessee plans to conduct only exploration drilling to determine the recoverable oil and gas, the drill rig shall be a minimum of 100 feet from the outside of the substation fence or a distance equal to the height of the drill rig if higher than 100 feet. (4) The access road to the Rifle Substation shall not be blocked, damaged, or otherwise occupied in a manner that interfere with the work of WAPA linemen and others responsible for operation and maintenance of the Rifle Substation and the associated approach spans.
GS-TL-01	All lands	**Timing Limitation**: To protect use of winter range habitats by big game (deer and elk), no surface use is allowed during the following time period(s): December 1 to April 30. This stipulation does not apply to operation and maintenance of production facilities.

In its letter of March 29, 2011, WAPA also requested that the BLM attach a requirement for a subsidence study prior to approval of any oil and gas development to ensure that withdrawal of fluid minerals and produced waters would not cause relative differential subsidence of the surface. However, the BLM has determined that such a requirement is not appropriate or needed, because production of oil, gas, and saline waters from the depths associated with fluid minerals projects within the CRVFO area are not known to result in subsidence, owing to the great depth and the thickness and competence of overlying strata. Attachment E provides the DOE letter regarding subsidence and BLM's letter to the DOE in reply.

In addition to applying lease stipulations in conjunction with oil and gas operations, the CRVFO also applies standard and site-specific conditions of approval (COAs), as appropriate, to any authorizations for surface-disturbing activities associated with those operations.

PLAN CONFORMANCE REVIEW

The Proposed Action and No Action Alternative are subject to and have been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: The current land use plan is the *Glenwood Springs Resource Management Plan* (RMP), approved in 1984 and revised in 1988 (BLM 1984). Relevant amendments include the *Oil and Gas Plan Amendment to the Glenwood Springs Resource Management Plan* (BLM 1991) and the *Oil &Gas Leasing & Development Record of Decision and Resource Management Plan Amendment (*BLM 1999b).

Decision Language: The 1991 Oil and Gas Plan Amendment (BLM 1991) included the following at page 3: "697,720 acres of BLM-administered mineral estate within the Glenwood Springs Resource Area are open to oil and gas leasing and development, subject to lease terms and (as applicable) lease stipulations" (BLM 1991, page 3). This language was carried forward into the *Oil & Gas Leasing & Development Record of Decision and Resource Management Plan Amendment* (BLM 1999b).

Discussion: A determination has been made by the BLM Colorado State Office that the mineral estate was within Federal ownership as of the dates of those RMP Amendments and that the BLM has regulatory authority under 30 USC 352 to lease the minerals, with the attachment of necessary and appropriate lease stipulations. In addition, Parcel 6052 is within an area of the CRVFO within which BLM surface lands and split-estate land (private surface/Federal minerals) were designated in the 1991 and 1999 RMP amendments as open to oil and gas leasing and development. Therefore, the lease sale of the 12.1-acre Parcel 6052 is in conformance with the land use plan.

PUBLIC SCOPING

Public scoping for this EA consisted of publishing a Draft EA on the CRVFO website on June 6, 2011. In addition, the BLM Colorado State Office notified affected surface landowners and prepared news releases for area newspapers. The Draft EA remained available for public review and comment through July 6, 2011. One comment letter was submitted jointly by the Colorado Environmental Coalition, Center for Native Ecosystems, The Wilderness Society, and Wilderness Workshop. Their comment letter and BLM's responses to specific comments are provided in Attachment F.

STANDARDS FOR PUBLIC LAND HEALTH

In January 1997, Colorado BLM approved the Standards for Public Land Health. The five standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Environmental analysis of proposed projects on BLM land must address whether

the Proposed Action or alternatives being analyzed would result in impacts that would maintain, improve, or deteriorate land health conditions identified in the applicable Land Health Assessment (LHA). However, because no component of the Proposed Action would involve BLM surface lands, an LHA does not apply, and the ability of future development to conform to land health standards is not evaluated in this EA.

AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Internal scoping for this EA included a site visit in May 2011 by CRVFO resource specialists and a review of available resource information, an evaluation of the adequacy of lease stipulations available for attachment to the lease, and an assessment of the types of impacts typically associated with oil and gas development projects and effectiveness of mitigation measures available to the CRVFO. These mitigation measures are attached by the CRVFO as standard and site-specific COAs for any surface-disturbing activities. During the internal scoping process, the CRVFO resource specialists identified the following elements of the natural and human environment as present in the project vicinity and potentially affected by oil and gas exploration and development:

Access and Transportation
Air Quality
Cultural Resources (Archaeology)
Fossil Resources (Paleontology)
Geology and Minerals
Invasive Non-Native Plants
Migratory Birds
Native American Religious Concerns
Noise
Socio-Economics
Special Status Species
Visual Resources
Wastes (Hazardous and Solid)
Water Quality (Surface and Ground)
Wildlife (Aquatic and Terrestrial)

These elements are address in alphabetical order in the following subsections. Elements not addressed were determined by the CRVFO as not potentially present or as potentially present but not subject to potentially significant adverse impacts from post-leasing oil and gas development.

If, during the review of an oil and gas development plan submitted by an operator subsequent to the lease sale, the CRVFO determines that these and any additional environmental elements are present and subject to potentially significant adverse impacts by a specific project, those elements would be analyzed in a project-specific EA prepared in response to any proposal that includes a surface-disturbing activity. As appropriate, any potentially affected resources would be protected through the application of standard lease stipulations, standard or site-specific COAs, and other management actions within BLM's regulatory authority. At a minimum, these include BLM's authority to require the following:

- Relocation of a proposed surface-disturbing activity up to 200 meters to protect a sensitive resource.
- Postponement of a proposed surface-disturbing activity by up to 60 days.
- Submittal and implementation of an adequate reclamation plan and achievement of reclamation goals.
- Conduct of oil and gas operations in a manner that avoids undue impacts to other resources.

Standard COAs applied by the CRVFO to all oil and gas operations, including those that would to oil and gas developments proposed pursuant to the leasing of Parcel 6052, are described below under the environmental elements analyzed in this EA.

Access and Transportation

Affected Environment

The project area is accessed by exiting I-70 at Silt, then proceeding south to River Frontage Road, then turning left and proceeding east on River Frontage Road for approximately 0.4 mile to CR 311, then turning right and proceeding approximately 0.5 mile to CR 346, then turning right and proceeding west along CR 346 approximately 0.75 mile to CR 331, then turning left on CR 331 and proceeding south for approximately 0.5 mile to the Burckle Access Road, then turning right and proceeding west another 0.5 mile to the pad location.

Environmental Consequences

Proposed Action

Development of Parcel 6052 would result in a substantial temporary increase in truck traffic and a less substantial long-term increase compared to existing traffic associated with the two existing Fee wells. The greatest increase would be during rig-up, drilling, and completion activities. An estimated 1,160 truck trips over a 30-day period would be required to support a Federal oil and gas well (Table 2).

Table 2. Traffic Associated with Drilling and Completion Activities

Vehicle Class	*Number of Trips per Well*	*Percentage of Total*
16-wheel tractor trailers	88	7.6%
10-wheel trucks	216	18.6%
6-wheel trucks	452	39.0%
Pickup trucks	404	34.8%
Total	**1,160**	**100.0%**

Source: BLM 2006. Note: Trips by different vehicle types are not necessarily distributed evenly during the drilling process. Drilling and completion period is approximately 30 days per well.

Once the well is in production, traffic would decrease to occasional visits for monitoring or maintenance activities. The well is assumed to require recompletion once per year. Each recompletion would require three to five truck trips per day for approximately 7 days. Fluids generated during the life of the well would be stored in tanks onsite, increasing the truck traffic related to haulage of fluids.

Degradation of field development roads may occur due to heavy equipment travel, and fugitive dust and noise would be created. However, mitigation measures attached as COAs to project-specific development plans and APDs would require adequate dust abatement and road maintenance.

No Action Alternative

The No Action Alternative constitutes a decision to not lease, or to defer leasing, of the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Air Quality

Affected Environment

Colorado Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) are health-based criteria for the maximum acceptable concentrations of air pollutants in areas of public use. Although specific air quality monitoring has not been conducted within the project area, regional air quality monitoring has been conducted in Rifle and elsewhere in Garfield County. Air pollutants measured in the region for which ambient air quality standards exist include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than 10 microns (μ) in diameter (PM_{10}) and less than 2.5 μ in diameter ($PM_{2.5}$), and sulfur dioxide (SO_2).

The project area lies within Garfield County, which in an attainment area under CAAQS and NAAQS. An attainment area is an area where ambient air pollution quantities are below (better than) NAAQS standards. As shown in Table 3, regional background values are well below established standards.

Table 3. Air Pollutant Background Concentrations, Colorado and National Ambient Air Quality Standards, and Prevention of Significant Deterioration (PSD Increments)

Pollutant/Averaging Time		***Measured Background Concentration***	***Colorado and/or National AAQS***	***Incremental Increase Above Legal Baseline PSD Class I/ II***	
Carbon Monoxide (CO) [1]	1-hour 8-hour	1,160 μg/m^3 1,160 μg/m^3	40,000 μg/m^3 (35 ppm) 10,000 μg/m^3 (9 ppm)	n/a n/a	n/a n/a
Nitrogen Dioxide (NO_2) [2]	Annual	10 μg/m^3	100 μg/m^3 (0.053 ppm)	2.5 μg/m^3	25 μg/m^3
Ozone[3]	8-hour	149 μg/m^3 (highest)	147 μg/m^3 (0.075 ppm)	n/a	n/a
Particulate Matter (PM_{10}) [1]	24-hour	114 μg/m^3 (highest)	150 μg/m^3	8 μg/m^3	30 μg/m^3
Particulate Matter ($PM_{2.5}$) [4]	24-hour Annual	40 μg/m^3 (highest) 11.2 μg/m^3	35 μg/m^3 15 μg/m^3	n/a n/a	n/a n/a
Sulfur Dioxide (SO_2) [5]	3-hour 24-hour Annual	24 μg/m^3 13 μg/m^3 5 μg/m^3	1,300 μg/m^3 (0.5 ppm) 365 μg/m^3 (0.14 ppm) 80 μg/m^3 (0.03 ppm)	25 μg/m^3 5 μg/m^3 2 μg/m^3	512 μg/m^3 91 μg/m^3 20 μg/m^3

[1] Background data collected in Rifle, 2008; highest levels recorded in April (Air Resource Specialists 2009).
[2] Background data collected by EnCana at site north of Parachute, 2007 (CDPHE 2008).
[3] Background data collected in Rifle, 2008; highest levels recorded in July (Air Resource Specialists 2009).
[4] Background data collected in Rifle, September - December 2008; highest levels recorded in December (Air Resource Specialists 2009).
[5] Background data collected at Unocal site, 1983-1984 (CDPHE 2008).

Federal air quality regulations are enforced by the Colorado Department of Public Health and Environment (CDPHE) through its delegated authority from the U.S. Environmental Protection Agency (EPA). The Prevention of Significant Deterioration (PSD) Program within CDPHE is designed to limit incremental increases for specific air pollutant concentrations above a legally defined baseline level, as defined by an area's air quality classification. Incremental increases in PSD Class I areas are strictly limited. Although the Clean Air Act gives to the EPA regulatory authority over air quality, which EPA may then delegate to the individual states, the BLM is responsible for reviewing potential air quality impacts associated with oil and gas development projects and APDs. The BLM typically evaluates air quality impacts in the context of the most recently completed regional air quality model prepared in conjunction with BLM's land use planning document revisions or amendments. In the case of the CRVFO, a regional air quality model has been prepared for the RMP revision currently underway. The

results of that regional air quality model are expected to be available for use prior to any future development of Parcel 6052.

Air pollutants measured in the region for which ambient air quality standards exist include carbon monoxide (CO), nitrogen dioxide (NO2), ozone (O3), particulate matter less than 10 microns (μ) in diameter (PM_{10}) and less than 2.5 μ in diameter ($PM_{2.5}$), and sulfur dioxide (SO2). Federal air quality regulations adopted and enforced by CDPHE limit incremental emissions increases to specific levels defined by the classification of air quality in an area. The PSD Program is designed to limit the incremental increase of specific air pollutant concentrations above a legally defined baseline level. Incremental increases are strictly limited in Class I areas but less so in Class II areas.

The project area and surrounding areas are classified as PSD Class II. The PSD Class I areas located within 100 miles of the project area are the Flat Tops Wilderness (approximately 25 miles north), Maroon Bells-Snowmass Wilderness (approximately 35 miles south), West Elk Wilderness (approximately 60 miles southeast), Black Canyon of the Gunnison National Monument (approximately 65 miles south), and Eagles Nest Wilderness (approximately 60 miles east). Dinosaur National Monument (approximately 80 miles northwest) is listed as a Federal Class II area but is regulated as a Class I area for SO_2 by CDPHE. Regional background pollutant concentrations and applicable standards or limits are listed in Table 3**.**

Environmental Consequences

Proposed Action

The CDPHE, under its Environmental Protection Agency (EPA)-approved State Implementation Plan (SIP), is the primary air quality regulatory agency responsible for determining potential impacts once detailed industrial development plans have been made; those development plans are subject to applicable air quality laws, regulations, standards, control measures, and management practices. Prior to operations, CDPHE has the ultimate responsibility for reviewing and permitting any project's air quality impacts. Unlike the conceptual "reasonable but conservative" engineering designs used in NEPA analyses, any CDPHE air quality preconstruction permitting required would be based on site-specific, detailed engineering values, which would be assessed in CDPHE's review of the permit application.

Emissions of volatile organic compounds (VOCs) are dependent on the characteristics of the condensate, tank operations, and production. Air impacts associated with the condensate tanks are anticipated to be minor, but VOC emissions would be controlled under CDPHE Regulation 7. This includes capture and thermal disruption of VOCs from condensate tanks.

Development of Parcel 6052 would result in localized short-term increases in pollutant emissions from vehicles and drilling equipment and fugitive dust emissions from the use of the well pad and access road. At the time of any such development, air quality impacts would be assessed with reference to the air quality modeling recently completed as part of the current RMP revision underway in the CRVFO or, alternative, to a project-specific air model prepared on behalf of the operator by a qualified consultant.

To mitigate fugitive dust generated by these activities, the CRVFO would require the operator to implement dust abatement by watering the access road and/or by applying a surfactant approved by the BLM. Additionally, the operator would be required to apply gravel to the access road to a compacted depth of 6 inches, further reducing fugitive dust emissions. Air quality would decrease during mobilization and rigging up the drill rig, however impacts associated with this activity would be minor and short lived.

Since the current land use plan was approved BLM (1999), ongoing scientific research has identified the potential impacts of "greenhouse gases" (GHGs) and their effects on global atmospheric conditions. These GHGs include carbon dioxide, methane, nitrous oxide, water vapor, and several trace gases. Through complex interactions on a global scale, these GHG emissions are believed by many experts to cause a net warming effect of the atmosphere, primarily by decreasing the amount of heat energy radiated by back into space.

In 2001, the Intergovernmental Panel on Climate Change (IPCC) predicted that by the year 2100, global average surface temperatures would increase 1.4 to 5.8°C (2.5 to 10.4°F) above 1990 levels. The National Academy of Sciences (2007) supports these predictions but has acknowledged that uncertainties exist regarding how climate change may affect different regions. In 2007, the IPCC also concluded that "warming of the climate system is unequivocal" and "most of the observed increase in globally average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic (man-made) greenhouse gas concentrations" (National Academy of Sciences 2007). Other theories about the effect of GHGs on global climate change exist.

The assessment of GHG emissions and climate change remains in its formative phase. Therefore, it is not yet possible to know with certainty the net impact to climate from GHGs produced globally over the last century or from those produced today. The lack of scientific tools designed to predict climate change on regional or local scales limits the ability to quantify potential future impacts of climate change on the specific area of Parcel 6052. In addition, while any oil and gas leasing or development projects may contribute GHGs to the atmosphere, these contributions would not have a significant effect on a phenomenon occurring at the global scale believed by some to be due to more than a century of human activities.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Cultural Resources (Archaeology)

Affected Environment

A preliminary site survey and a thorough search of cultural records at the Colorado River Valley Field Office (CRVFO) and of the Colorado Office of Archaeology and Historic Preservation's COMPASS database was conducted on March 6, 2011. Although the remnants of a historic habitation site (5GF246) are located in the project vicinity, the site has been determined as not eligible for inclusion on the National Register of Historic Properties (NRHP). Therefore, no "historic properties" were identified as being within the area of the Parcel 6052. "Historic properties" are cultural resources that are eligible or potentially eligible for inclusion on the NRHP.

Environmental Consequences

Proposed Action

Development of Parcel 6052 would be have no direct impacts to known "historic properties," as no such properties are believed to occur there. Therefore, the BLM made a determination of "No Historic

Properties Affected" in conjunction with the proposed lease sale. This determination was made in accordance with the 2001 revised regulations [36CFR 800.4(d)(1)] for Section 106 of the National Historic Preservation Act (16U.S.C 470f), the BLM/State Historic Preservation Officer (SHPO) Programmatic Agreement (1997) and Colorado Protocol (1998)]. Because the BLM has determined that development of Parcel 6052 would have no direct impacts to known "historic properties," no formal consultation was initiated with the SHPO in conjunction with this EA.

Indirect, long-term cumulative impacts from increased access and the presence of project personnel could result in a range of impacts to known and undiscovered cultural resources in the vicinity of the project location. These impacts could range from accidental damage or vandalism to illegal collection and excavation.

Notwithstanding the preliminary determination that no historic properties would be affected by oil and gas activities authorized subsequent to lease sale, the CRVFO would be apply a standard education/discovery COA to any authorization associated with oil and gas activities.

In addition, BLM statewide stipulation CO-39 would apply. This stipulation requires site-specific surveys, an evaluation of potential impacts to cultural resources, and identification and application appropriate mitigation measures prior to the issuance of any permit.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not be expected to occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Fossil Resources (Paleontology)

Affected Environment

The predominant geologic formations present at or near the surface within the boundary of lease parcel 6052 are Quaternary aged deposits of unconsolidated alluvium and colluviums (Qac), sheet-wash deposits (Qsw), and loess (Qlo). See Table 4 in the section on Geology and Minerals, below, for a more detailed description of these formations and their characteristics. Occurring in varying thicknesses, these Quaternary sediments are considered Potential Fossil Yield Classification (PFYC) Class 2, defined as having a low probability of fossil occurrence. Class 2 geologic units are not likely to contain vertebrate or scientifically significant invertebrate fossils.

The formation of interest in the southern Piceance Basin with respect to paleontological resources is the Wasatch Formation. The Wasatch is a BLM Condition 4 formation, defined as an area that is known to contain vertebrate fossils or noteworthy occurrences of invertebrate fossils. Fossils are known to occur or have been documented in Condition 4 units, but may vary in occurrence and predictability. The Wasatch formation is mapped within the project area but has few significant exposures. Of the three members into which this formation is divided, the upper Shire Member has yielded significant Eocene mammals. The middle member of the Wasatch Formation, the Molina Member is considered unfossiliferous (Donnell 1969), but according to (Murphy and Daitch 2007), all members of the Wasatch Formation contain vertebrate fossils in varying abundances. The basal Atwell Gulch Member has yielded collections of Paleocene vertebrates and leaves from the Paleocene-Eocene boundary placed near the top of the member contact (Donnell 1969).

Environmental Consequences

Proposed Action

Although the Wasatch Formation occurs in a small portion of lease parcel 6052, no fossil localities have been identified within those surface exposures. Alluvial and colluvial deposits are the predominant surface sediments, but the Wasatch Formation is the underlying stratigraphic unit. The thickness of the Quaternary gravels cannot be accurately determined, but construction activities have the potential to adversely affect important fossils that may be present in the underlying Wasatch Formation. The greatest potential for impacts is associated with excavation of shallow bedrock that may be unearthed during well pad and accompanying facilities (especially pipeline) construction. In general, alluvium, colluvium, and other unconsolidated sediments are less likely than intact bedrock to contain well-preserved fossils. Based on a preliminary site survey and review of existing information, fossil resources are not expected to be impacted by access road or gas pad development. In the unlikely event that paleontological resources are encountered during the construction phase, the CRVFO would apply a paleontological COA to any authorization for a surface-disturbing activity.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas.

Geology and Minerals

Affected Environment

Parcel 6052 is located along the southern edge of the Piceance Basin approximately 4.5 miles south of the town of Silt. The parcel is flanked on the east by the Grand Hogback homoclinal ridge and to the west by Hunter, Grass, and Battlement Mesas. Battlement Mesa is a large, prominent highland that stretches for approximately 20 miles east-west and sits along the Garfield-Mesa county line between the Colorado River to the north and Plateau Creek to the south. It is similar in geology to the nearby Grand Mesa to the southwest, consisting largely of basalt-capped sedimentary rocks of the Green River and Uinta Formations. The lower part of the Green River Formation is visible along the flanks of Battlement Mesa but mostly cloaked by landslide deposits in the vicinity of the site. Table 4 lists the formations that crop out along or near the project site.

The Cretaceous-age Mesaverde Group is the likely target zone of any oil and gas development within the parcel. Comprising the Iles and Williams Fork Formations, the Mesaverde Group is composed of marine sandstones transitional to non-marine beds of coal, shale, and sandstone that were deposited marginal to the great Cretaceous seaway (Warner 1964) that occupied much of the Western Interior region during that time. The oscillating shoreline of this sea, due to the rise and fall of sea level, left behind a complex of transgressive and regressive sedimentary sequences of onshore, nearshore, and offshore sediments.

The orogenic (mountain-building) processes that also took place during the late Cretaceous produced uplift and subsidence structures in central and eastern Utah, western Colorado, and most of Wyoming (UGS 2009). As the highland areas were exposed to erosion and the basin deepened, a greater amount of sediment was available for deposition along the ancient shoreline. The subsequent facies (textural) changes in the sediments through time as a result of these processes are believed to be the trapping mechanism associated with the extensive gas accumulation of the Williams Fork Formation.

Table 4. Surficial Geologic Formations in the Study Area				
Map Symbol	***Formation Name***	***Age***	***Characteristics***	***Location***
Qc	Undivided Colluvium	Holocene	Pebble, cobble and boulder gravel.	North flanks of Grand Hogback
Qac	Undivided Colluvium / Alluvium	Holocene	Pebble, cobble and boulder gravel.	Flood plains, alluvial fans, and low terraces.
Qfy	Younger Fan Alluvium	Holocene	Slightly bouldery-cobbly, pebble gravel with silt/sand matrix	Alluvial fans and old stream channels.
Qsw	Sheet Wash Deposits	Holocene / Pleistocene.	Pebbly, silty sand.	Gentle slopes and minor drainages.
Qtt	Old Terrance Alluvium	Pleistocene	Sandy, cobbly pebble gravel.	Stream valleys and terraces.
Qlo	Loess	Pleistocene	Non-stratified, slightly clayey, sandy silt wind deposits	Mantels gentle slopes and floodplains.
Tw	Wasatch Formation	Paleocene, Eocene	Red, gray, and brown sandstone and siltstone and red, green, and gray shale	Overlying the Mesaverde formation. Outcrop exposures.
Source: Shroba et al. (1994)				

The source rocks are for the oil and gas are interbedded and thermally mature gas-prone shales, mudstones, siltstones, and coals. The reservoir rocks are fine- to medium-grained sandstones, varying in thickness from less than 10 feet to more than 50 feet (Spencer 1988), creating an interbedded relationship between source and reservoir. Although the primary trapping mechanism of the tight gas is stratigraphic (related to vertical and lateral changes in sediments being deposited, as mentioned above), diagenetic (post-depositional) alteration of the rocks due to prolonged burial at great depth is a contributing factor.

Production is derived from three reservoir intervals, which include the Wasatch Formation, the Williams Fork Formation, and Iles Formation. The latter two make up the Upper Cretaceous Mesaverde Group. Mesaverde Group reservoirs are tight throughout most of the Piceance Basin, and generally become tighter with depth of burial. Substantial reserves have been known since the late 1950s to be trapped within the tight sands of these reservoirs. However, only within the last decade, and particularly the last few years, has the integrated application of new technologies turned the tight gas sands into a profitable play (Kuuskraa 1997). Natural fracture detection, advanced log analysis, more rigorous well completions and recompletions, and denser spacing have increased the amount of recoverable gas in these reservoirs.

Environmental Consequences

Proposed Action

Development of Parcel 6052 would result in natural gas and associated condensate and saline water being produced from the tight gas sands of the Mesaverde Group. The amount of natural gas potentially produced can only be estimated based on production rates from nearby wells and adjacent fields. Reserves have been estimated to approach 2 billion cubic feet (bcf) of natural gas per well (Vargas 2006). If the wells become productive, initial production rates would be expected to be highest during the first few years of production, then steadily decline during the remainder of the economic lives of the wells. Most of the wells currently in production are estimated to have a life span of 30 to 35 years. See the section on Surface Water for requirements regarding disposal of produced water.

Specific casing depths would vary depending on well location and drilling conditions. Surface casing used to protect and isolate usable water and potential production zones would be set at depths substantially below known aquifers within the area. If a water-bearing, gas-producing, lost-circulation, or pressurized zone is encountered below the surface casing, cement volumes would be adjusted to protect and further isolate those zones. This configuration is designed to prevent accidental contamination or leakage of hydrocarbons or drilling fluids from reaching usable water- or gas-producing zones.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Therefore, , oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Invasive Non-Native Species

Affected Environment

Parcel 6052 is located in an area dominated by a shrubland of Wyoming big sagebrush (*Artemisia tridentata* subsp. *wyomingensis*). The area is fairly weedy, with cheatgrass (*Anisantha tectorum*), redstem filaree (*Erodium cicutarium*), Russian-thistle (*Salsola australis*), and yellow alyssum (*Alyssum alyssoides*) being the dominant non-natives.

Environmental Consequences

Proposed Action

Surface-disturbing activities provide a niche for the invasion and establishment of invasive non-native species, particularly when these species are already present in the surrounding area. If the parcel were to be leased and developed, the potential for weed invasion would be high. Mitigation measures designed to minimize the spread of these species would be attached as conditions of approval to well APDs. The CRVFO would apply a weed-control COA to the authorization for any surface-disturbing activities associated with oil and gas development.

No Action Alternative

The No Action Alternative constitutes a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be developed and produced; therefore, no new infestations of invasive non-native species should occur. However, existing infestations would likely spread if not treated.

Migratory Birds

Affected Environment

The Migratory Bird Treaty Act (MBTA) includes native passerines (flycatchers and songbirds) as well as birds of prey, migratory waterbirds (waterfowl, wading birds, and shorebirds), and other species such as doves, hummingbirds, swifts, and woodpeckers. For most migrant and native resident species, nesting habitat is of special importance because it is critical for supporting reproduction in terms of both nesting sites and food. Because birds are generally territorial during the nesting season, their ability to access and

utilize sufficient food is limited by the quality of the territory occupied. During non-breeding seasons, birds are generally non-territorial and able to feed across a larger area and wider range of habitats.

BLM's management for migratory birds focuses on species listed by the U.S. Fish and Wildlife Service (USFWS) as Birds of Conservation Concern (BCC), non-BCC Neotropical migrants, and birds of prey. The current BCC list (USFWS 2008) for Region 16 (Southern Rockies/Colorado Plateau) includes 13 species known to occur in the CRVFO area and potentially present in or near the project vicinity: the peregrine falcon (*Falco peregrinus*), prairie falcon (*F. mexicanus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), flammulated owl (*Otus flammeolus*), yellow-billed cuckoo (*Coccyzus americanus*), Lewis's woodpecker (*Melanerpes lewis*), willow flycatcher (*Empidonax traillii*), gray vireo (*Vireo vicinior*), pinyon jay (*Gymnorhinus cyanocephalus*), juniper titmouse (*Baeolophus griseus*), Brewer's sparrow (*Spizella breweri*), and Cassin's finch (*Carpodacus cassinii*).

Of the BCC species present in the CRVFO, only the Brewer's sparrow is commonly associated with the type of sagebrush habitat that dominates the project area. Other migrants potentially nesting in the habitats overlying Parcel 6052 include the western kingbird (*Tyrannus verticalis*), western meadowlark (*Sturnella neglecta*), vesper sparrow (*Chondestes grammacus*), and lark sparrow (*Pooecetes gramineus*). Residents or short-distance migrants in the project vicinity include the northern flicker (*Colaptes auratus*), common raven (*Corvus corax*), black-billed magpie (*Pica hudsonia*), American robin (*Turdus migratorius*), and house finch (*Carpodacus mexicanus*).

Although no birds of prey (raptors) are expected to nest onsite, within or near the area that could visit the site in search of prey include the American kestrel (*Falco sparverius*), northern harrier (*Circus cyaneus*), Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*A. striatus*), red-tailed hawk (Buteo *jamaicensis*), Swainson's hawk *(B. swainsoni*), and great horned owl (*Bubo virginiana*. Two species less likely to occur except as infrequent visitors in search of prey include the golden eagle (*Aquila chrysaetos*), which nests on cliffs in the general vicinity, and the bald eagle (*Haliaeetus leucocephalus*), which is known to nest and occupy winter roosts in mature cottonwoods along the nearby Colorado River.

Environmental Consequences

Proposed Action

Development of Parcel 6052 could result in direct or indirect habitat loss that would displace birds away from preferred habitats due to noise and human presence. Displaced individuals are less likely to nest due to other suitable habitat already being occupied and may be subject to reduced survival if the areas into which they are displaced are less suitable. Research indicates that noise associated with development and production activities can also lead to lower avian diversity and density in both adjacent and distant areas (Forman 2000, Forman and Deblinger 2000). Noise can decrease usable habitat for birds by reducing the distance at which courtship or territorial vocalizations by males are heard by potential mates, interfering with territory establishment and defense, mate selection, and reproductive potential. These impacts may result in a short-term decrease in the local populations of some species, due to both direct habitat loss resulting from vegetation removal and indirect habitat loss resulting from disturbance. However, none of the BCC species or other migratory bird species present in the area would be expected to suffer significant declines in population size or reductions in the overall viability of the species.

No raptor nesting habitat is present on the lands overlying Parcel 6052. However, prior to any exploration or development activities, the current land use plan would require that raptor surveys be completed within 0.25 mile of any areas subject to disturbance. Any active raptor nests would be protected by a 60-day timing limitation (TL) during the nesting season for the particular season.

Similarly, the CRVFO would apply a 60-day TL prohibiting vegetation removal during the period May 1 to June 30 to protect potential nesting use of the sagebrush habitat by the Brewer's sparrow.

Any fluids stored in open pits in conjunction with oil and gas activities would pose a risk to migratory birds through exposure to any acutely toxic compounds or through loss of buoyancy and insulation due to removal of natural oils, such as from contact with surfactants. The CRVFO would apply, as appropriate, COAs for the protection of migratory birds, including raptors, in conjunction with any authorizations for nest all oil and gas projects.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Native American Religious Concerns

Affected Environment

Parcel 6052 is located within an area identified by the Ute Tribes as part of their ancestral homeland. At present, no Native American concerns are known within the project area, and none was identified during the inventories. The Ute Tribe of the Uintah and Ouray Bands, the primary Native American tribe in this area of the CRVFO, have indicated that they do not wish to be consulted for small projects or projects where no Native American areas of concern have been identified either through survey or past consultations. Therefore, formal consultation was not undertaken. If new data are disclosed, new terms and conditions may have to be negotiated to accommodate their concerns.

Environmental Consequences

Proposed Action

Although any oil and gas activities initiated pursuant to a lease sale of Parcel 6052 is not expected to have direct impacts on any Native American Religious Concerns, increased access and personnel in the vicinity of the proposed project could indirectly impact unknown Native American resources ranging from illegal collection to vandalism.

The National Historic Preservation Act (NHPA) requires that if newly discovered cultural resources are identified during project implementation, work in that area must stop and the agency Authorized Officer notified immediately (36 CFR 800.13). The Native American Graves Protection and Repatriation Act (NAGPRA), requires that if inadvertent discovery of Native American Remains or Objects occurs, activity must cease in the area of discovery, a reasonable effort made to protect the item(s) discovered, and immediate notice made to the agency Authorized Officer, as well as the appropriate Native American group(s) (IV.C.2). Notice may be followed by a 30-day delay (NAGPRA Section 3(d)).

Any future development activities would also require compliance with the provisions of NHPA and the Archaeological Resource Protection Act. The CRVFO would attach its standard education/discovery COA for the protection of Native American values to any future authorizations for surface-disturbing activities. In addition, any further tribal consultation would be conducted, as necessary.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Noise

Affected Environment

Noise is generally described as unwanted sound, weighted and noise intensity (or loudness) is measured as sound pressure in units of decibels (dBAs). The decibel scale is logarithmic, not linear, because the range of sound that can be detected by the human ear is so great that it is convenient to compress the scale to encompass all the sounds that need to be measured. Each 20-unit increase in the decibel scale increases the sound loudness by a factor of 10.

Sound levels have been calculated for areas that exhibit typical land uses and population densities. In rural recreational areas, ambient sound levels are expected to be approximately 30 to 40 dBA (EPA 1974, Harris 1991). As a basis for comparison, the noise level during normal conversation of two people 5 feet apart is 60 dBA. Parcel 6052 is located in a rural, unpopulated area with few potential noise sources. Noise sources from human activity are mostly mechanical, consisting mainly of the Rifle power substation, existing oil and gas wells, new exploration activities, and ranching/farming operations. These noise sources are widely dispersed throughout the area, with localized impacts from vehicular traffic.

Environmental Consequences

Proposed Action

Oil and gas development activities subsequent to the lease sale of Parcel 6052 would result in increased levels of noise during the drilling and completion phases. The noise would be most noticeable along the roads used to haul equipment and at the pad location. Drilling activities are subject to noise abatement procedures as defined in the COGCC Rules and Regulations (Aesthetic & Noise Control Regulations). Operations involving pipeline or gas facility installation or maintenance, the use of a drilling rig, completion rig, workover rig, or stimulation are subject to the maximum permissible noise levels for industrial zones. The 2006 revised COGCC noise control rules call for noise levels from oil and gas operations at any well site and/or gas facility to comply with the maximum permissible levels (Table 5) at a distance of 350 feet. The allowable noise level for periodic impulsive or shrill noises is reduced by 5 dBA from the levels shown (COGCC 2006).

Table 5. Noise Standards for Light industrial, Residential/Agriculture/Rural

Zone	*7:00 A.M. to 7:00 P.M*	*7:00 P.M. to 7:00 A.M*
Light Industrial	70 dBA	65 dBA
Residential/Agricultural/Rural	55 dBA	50 dBA

Existing residences are located northeast of the lease boundary with the closest being 300 feet from the northeast corner of the lease. Given the proximity of these houses noise reduction devices may be required if the noise levels greater than 55 dBA are found to be adversely affecting the residents.

Traffic noise would also be elevated as a consequence of oil and gas activities. The greatest increase would be along access roads during the drilling and completion phases. Less noise would be created by smaller trucks and passenger vehicles such as pickup trucks and sport utility vehicles. Although the duration of increased noise from this source would be short, it would occur repeatedly during the drilling and completion phases. Noise impacts would decrease during the production phase but would remain background noise levels. During maintenance and well workover operations, noise levels would temporarily increase above those associated with routine well production.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Socio-Economics

Affected Environment

Parcel 6052 is located within Garfield County, Colorado. The population of Garfield County grew by approximately 3% per year from 2000 to 2005, with an increase from 44,263 to 50,663 residents (DOLA 2009). Population growth in Garfield County is expected to more than double over the next 20 years from over 50,000 in 2005 to 105,087 in 2025 (DOLA 2009). In 2000, the last year for which Garfield County has reported data, industries with the highest percentage of total employment were construction (20.4%), tourism (10.7%), retail trade (13.7%), and education and health (15.4%). An estimated 13.3% of the 2000 population was retired and did not earn wages. Employment in agriculture, forestry, hunting, and mining combined for 2.4% of total employment.

Total personal income in Garfield County has also risen by 120%, from $513 million in 1990 to $1.1 billion in 2000. Annual per capita income grew by 50% during the same period, from about $17,000 to $26,000 (BLM 2006), and the average earnings per job in 2005 was approximately $37,500 for male and $27,250 for female full-time year-round workers. The communities of Parachute, Silt, and Rifle are considered the most affordable for housing, while Battlement Mesa, New Castle, and Glenwood Springs are the least affordable, with the cost to rent or own similar housing up to 50% higher (BLM 2006).

Activities on public land in the vicinity of the project area are primarily ranching/farming, hunting, OHV travel, and the development of oil and gas resources. Hunters contribute to the economy because many require lodging, restaurants, sporting goods, guides and outfitting services, food, fuel, and other associated supplies. Big-game hunting, in particular, is viewed as critical to Garfield County, and especially the local community economies that depend on BLM and Forest Service public lands where most hunting occurs (BLM 2006). Expenditures by hunters in the Roan Plateau Planning Area have been estimated to be as much as $1 million annually, with perhaps an additional $1 million annually of indirect and local expenditures (CDOW 1995, cited in BLM 2006).

The growth of the oil and gas industry has been increasingly important to local economies (BLM 2006). Production of natural gas in Garfield County has increased dramatically in the current decade, from 70 trillion cubic feet (TCF) in 2000 to 575 TCF in 2009 (COGCC 2010). Garfield County is experiencing the fastest oil and gas development in Colorado, with 3,000 drilling permits currently approved (COGCC 2009). While the number of workers employed in the mining and extraction industry in Garfield County is reported as only 1.7% of total employment, this number is considered misleading because some oil and

gas employment data are incorporated into construction statistics instead (BLM 2006). For example, in 2005, an estimated 4,000 persons were directly employed by gas development companies and their subcontractors in Garfield County (Garfield County 2009).

The Federal government makes "Payments in Lieu of Taxes" (PILT) to County governments to help offset property tax revenue lost of nontaxable Federal lands within County boundaries (BLM 2006). Payments are based on Federal acreage in the County for all land management agencies, including BLM, USFS, USFWS, and the National Park Service (NPS). The amount may also be adjusted based on population and as appropriated by Congress. By formula, payments are decreased as other Federal funds such as mineral royalty payments increase. PILT received by Garfield County was $1,170,205 in 2004; $808,348 in 2005; $1,065,158 in 2006; and $1,078,087 in 2007.

In addition to PILT payments, BLM shares revenue generated by commercial activities on public lands with State and County governments (BLM 2006). Federal mineral royalties are levied on oil and gas production from Federal mineral leases. Oil and gas lessees pay royalties equal to 12.5% of the wellhead value of oil and gas produced from public land. Half the royalty receipts are distributed to Colorado, and the amount distributed by the State to Garfield County in 2002 was $14.1 million, compared to $5.5 million in 2001 (BLM 2006). These funds are then allocated to fund County services, schools, and local communities.

Property tax revenue from oil and gas development has also become the largest source of public revenue in Garfield County (BLM 2006). In 2007, oil and gas assessed valuation in Garfield County amounted to approximately $1.9 billion, or about 65% of total assessed value. Total tax revenues from property taxes and special district levies were $130 million. Tax dollar distributions in 2007 were Schools 37%, County 30%, Special Districts 13%, Fire Districts 10%, Colleges 8%, and Towns 2%.

The NEPA process requires a review of the environmental justice issues as established by Executive Order 12898 (February 1994). The order established that each Federal agency identify any "disproportionately high and adverse human health or environment effects of its programs, policies, and activities on minority and low-income populations." The Latino community is the only minority population of note in the vicinity of the project area. In 2000, 16.7% of the residents of Garfield County identified themselves as Hispanic or Latino, and this is consistent across the State (17.1%). African Americans, American Indians, and Pacific Islanders account for less than 1% of the Garfield County population, which is below the State levels.

Environmental Consequences

Proposed Action

Oil and gas development of Parcel 6052 would have minor beneficial impacts on the local economies of Garfield County through the creation or retention of job opportunities in the oil and gas industry and in supporting trades and services. In addition, local governments in Garfield County would experience an increase in tax and royalty revenues. Some minor economic loss to private landowners or guides may result from the potential displacement of big game and reduction in big game hunting in the project area.

Oil and gas development could also result in minor negative social impacts, including (1) decrease in the recreational character of the area, (2) reduced scenic quality, (3) increased dust levels, and (4) increased traffic. However, most of these impacts would be minor and limited to the relatively short duration of drilling and completion activities.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, neither adverse nor beneficial effects resulting from development of Parcel 6052 would occur.

Soils

Affected Environment

The project area is located on the valley floor of the Colorado River, at elevations between 5,600 and 5,800 feet elevation, with gradients ranging from less than 0% to greater than 10%. The proposed project is covered by the *Soil Survey of Rifle Area, Colorado* (NRCS 2010, USDA 1985). According to this survey, lease 6052 area would occur on entirely on the Olney Loam soil type. The area is generally characterized deep- well drained, moderately sloping soil on alluvial fans and sides of valleys from 5,000 to 6,500 feet. The gradients range from 6% to 12%, generally flat to gently sloping. This soil is formed in alluvium derived from sandstone and shale. Permeability is moderate, surface runoff is medium and available water capacity is moderate. The erosion hazard is moderate. The uses for this soil are irrigated hay, fruits, and grazing.

Environmental Consequences

Proposed Action

Development of Parcel 6052 would involve possible surface disturbance for access roads, well pads, and pipelines. This development would result in possible short-term vegetation loss and soil compaction and displacement, with a lesser amount long-term loss.

In general, areas potentially affected by the development contain adequate vegetation buffers and low to moderate slopes that would reduce the potential for sediment transport to Colorado River. However, construction activities would cause mixing of soil horizons, slight to moderate increases in local soil loss, loss of soil productivity, and sediment available for transport to surface waters. Noxious weed infestation resulting from disturbance would reduce soil productivity. Potential for such soil loss and transport would increase as a function of slope, feature (pad, road, or pipeline route) to be constructed, and proximity to streams. Such impacts could be adequately mitigated CRVFO's standard COAs related to topsoil handling and reclamation.

Throughout the affected area, the potential would also exist for accidental spills or leaks of petroleum products and hazardous materials during construction. These events would cause soil contamination and may decrease the soil fertility and revegetation potential.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, neither adverse nor beneficial effects resulting from development of Parcel 6052 would occur.

Special Status Species

Federally Listed, Proposed, or Candidate Plant Species

Affected Environment

According to the latest species list from the USFWS, the following Federally listed, proposed, or candidate plant species may occur within or be impacted by actions occurring in Garfield County: Parachute beardtongue (*Penstemon debilis*), DeBeque phacelia (*Phacelia submutica*), Colorado hookless cactus (*Sclerocactus glaucus*), and Ute ladies'-tresses orchid (*Spiranthes diluvialis*).

Environmental Consequences

Proposed Action

Results of a plant survey conducted in April 2011 indicated no habitat for Federally listed, proposed, or candidate plant species in the parcel. Therefore, oil and gas development subsequent to the proposed lease sale of Parcel 6052 is expected to have "No Effect" on these species. Nonetheless, statewide lease stipulation CO-34 would apply:

- Endangered Species Act Section 7 Consultation. The lease area may now or hereafter contain plants, animals, or their habitats determined to be threatened, endangered, or other special status species. The 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. The 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.

No Action Alternative

Because of the lack of potential habitat for any Federally listed, proposed, or candidate plant species in the Parcel 6052, no impacts to these species would result from implementation of the No Action Alternative.

Federally Listed, Proposed, or Candidate Animal Species

Affected Environment

According to the latest species list from the USFWS, the following Federally listed, proposed, or candidate animal species may occur within or be impacted by actions occurring in Garfield County: Canada lynx (*Lynx canadensis*), Mexican spotted owl (*Strix occidentalis), w*estern yellow-billed cuckoo (*Coccyzus americanus occidentalis*), razorback sucker (*Xyrauchen texanus*), Colorado pikeminnow (*Ptychocheilus lucius*), humpback chub (*Gila cypha*), bonytail (*G. elegans*), and greenback cutthroat trout (*Oncorhynchus clarki stomias).*

Aquatic Vertebrates

Of the four species of Federally listed big-river fishes within the Colorado River basin, two species—the razorback sucker and Colorado pikeminnow—have Designated Critical Habitat within the Colorado River and 100-year floodplain west (downstream) from the State Highway 13 bridge at the town of Rifle. This portion of the Colorado River lies about 6 miles west of the project area. The nearest known habitat for the humpback chub and bonytail is within the Colorado River approximately 90 miles downstream from the project area. Only one population of humpback chub, at Black Rocks west of Grand Junction, is known to occur in Colorado.

The greenback cutthroat trout is a subspecies of cutthroat trout native to the eastern slope of Colorado (Platte River drainage). Its documented presence in some streams of Garfield County suggests that either (1) fish were intentionally removed from east-slope waters and stocked in west-slope waters, or (2) the genetics of this species and the Colorado River cutthroat trout (the subspecies native the western slope) are not clearly defined. Because the greenback cutthroat trout is not known or expected to occur within or near the project area, it is not addressed further in this EA.

Terrestrial Vertebrates

None of the Federally listed, proposed, or candidate terrestrial wildlife species that occurs or is potentially present in Garfield County is considered likely to occur in the project area or vicinity due to lack of habitat or negative results of prior surveys in potentially suitable habitat. Hence, these species are not considered further in this document. The bald eagle and peregrine falcon were removed from the listed of threatened or endangered species in August 2007 and August 1999, respectively, and are now classified by BLM as sensitive species (see below). Although no longer protected by the Endangered Species Act, both species remain protected by the Migratory Bird Treaty Act; the bald eagle is also protected by the Bald and Golden Eagle Protection Act.

Environmental Consequences

Proposed Action

No Federally or proposed terrestrial vertebrate animal species present or potentially present in Garfield County are expected to occur in the project vicinity based on habitat types present and documented occurrences. Therefore, future oil and gas development of Parcel 6052 is expected to have “No Effect” on these species. Nonetheless, statewide stipulation CO-34 would be applied to this parcel (see above under discussion of threatened or endangered plants).

The endangered Colorado River fishes could potentially be affected by the consumptive use of water taken from the Colorado River basin to support activities associated with future oil and gas development. Depletions in flows in the Colorado River and major tributaries are a major source of impacts to these fishes due to changes in the flow regime that reduce the availability and suitability of spawning sites and habitats needed for survival and growth of the larvae. Principal sources of depletion in the Colorado River basin include withdrawals for agricultural or industrial uses, withdrawals for municipal water supplies, and evaporative losses from reservoirs. On average, approximately 0.7 acre-feet of Colorado River water is consumed during activities related to each oil and gas well.

In 2008, the BLM prepared a Programmatic Biological Assessment (PBA) addressing water-depleting activities associated with BLM’s fluid minerals program in the Colorado River Basin in Colorado. In response to this PBA, the USFWS issued a Programmatic Biological Opinion (PBO) (ES/GJ-6-CO-08-F-0006) on December 19, 2008. The PBO concurred with BLM’s effects determination of “May Affect,

Likely to Adversely Affect" the Colorado pikeminnow, bonytail, humpback chub, or razorback sucker as a result of depletions associated with oil and gas projects. To offset the impacts, the BLM has set up a Recovery Agreement, which includes a one-time Fee per well to use for site-specific mitigation projects. These funds are used to contribute to the recovery of endangered fish through the restoration of habitat, propagation, and genetics management, instream flow identification and protection, program management, non-native fish management, research and monitoring, and public education.

Other potential impacts to the four endangered Colorado River fishes from oil and gas development include inflow of sediments from areas of surface disturbance and inflow of chemical pollutants related to oil and gas activities on the well pads or ancillary surface facilities or a spill from a haul truck or pipeline into a stream. Stormwater controls required by the State of Colorado for the protection of surface water quality would also provide protection of aquatic organisms. Even if sediment inflow were to occur, including incidental aerial deposition of fugitive dust from roadways and construction areas, these fishes are adapted to the naturally high sediment loads that characterize the Colorado River and its tributaries.

In contrast to inflow of sediments, the inflow of chemical pollutants could impact the endangered big-river fishes if concentrations were sufficient to cause acute effects. The potential for adverse impacts would be limited to the Colorado pikeminnow and razorback sucker, the two species known to occur within the CRVFO area. Spills or other releases of chemical pollutants as a result of oil and gas activities are infrequent in the CRVFO area due to the various design requirements imposed by BLM and the State of Colorado. In the event of a spill or accidental release, all oil and gas operators within the CRVFO area are required to implement a Spill Prevention, Control, and Countermeasures (SPCC) plan, including such cleanup and mitigation measures as required by BLM or the State. In addition, the stormwater controls required and enforced by the CDPHE would reduce the risk of transport of these substances to surface waters, including the Colorado River.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

BLM Sensitive Plant Species

Affected Environment

BLM sensitive plant species with habitat and/or occurrence records in Garfield County include DeBeque milkvetch (*Astragalus debequaeus),* Naturita milkvetch (*Astragalus naturitensis),* Piceance bladderpod (*Lesquerella parviflora*), Roan Cliffs blazing star (*Mentzelia rhizomata*), Harrington's penstemon (*Penstemon harringtonii*), and Cathedral Bluffs meadow-rue (*Thalictrum heliophilum*).

Environmental Consequences

Proposed Action

Results of a plant inventory in April 2011 indicate no BLM sensitive plant species or their habitats in the vicinity of Parcel 6052.

No Action Alternative

Since no BLM sensitive plant species occur in Parcel 6052, no impacts to these species are anticipated. Nonetheless, statewide stipulation CO-34 would be applied to this parcel (see above under discussion of threatened or endangered plants).

BLM Sensitive Animal Species

Affected Environment

BLM sensitive animal species with habitat and/or occurrence records in the portion of the CRVFO that includes the project area and vicinity are listed in Table 6.

Environmental Consequences

Proposed Action

BLM sensitive animal species with habitat and/or occurrence records in the portion of the CRVFO that includes the project area and vicinity are listed in Table 6.

Table 6. The BLM Sensitive Wildlife Species Present or Potentially Present in the Project Area

Common Name	***Habitat***	***Potential for Occurrence***
Fringed myotis	Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats.	Potential (feeding)
Townsend's big-eared bat	Breeds and roosts in caves, trees, mines, and buildings; hunts over pinyon-juniper, montane conifer, and semi-desert shrubland habitats.	Potential (feeding)
Northern goshawk	Predominantly uses spruce/fir forests but will also use Douglas-fir, various pines, and aspens.	No suitable habitat
Bald eagle	Nests and roosts in mature cottonwood forests along rivers, large streams, and lakes.	Present along Colorado River
Brewer's sparrow	Sagebrush shrublands, typically extensive, relative homogeneous stands at lower and middle elevations.	Possible
Midget faded rattlesnake	Cold desert regions dominated by sagebrush and with an abundance of rock outcrops or exposed canyon walls.	No suitable habitat
Great Basin spadefoot	Seasonal streams or pools; feeds in nearby pinyon-juniper woodlands, sagebrush, and semi-desert shrublands	No suitable habitat
Northern leopard frog	Perennial streams and ponds; feeds in nearby riparian and wetland habitats.	No suitable habitat
Colorado River cutthroat trout	Headwaters streams and lakes isolated from populations of non-native trouts, including other subspecies of cutthroat trout.	No suitable habitat
Flannelmouth sucker, bluehead sucker, and roundtail chub	Flannelmouth sucker and roundtail chub generally restricted to rivers and major tributaries. Bluehead sucker also in smaller streams. No habitat for these species within the project vicinity.	Present in Colorado River

Fringed Myotis (*Myotis thysanodes* and Townsend's Big-eared Bat (*Corynorhinus townsendii*) – No caves or other suitable roosting sites occur in the project area. Loss of large trees, potentially also used for roosting, would not be expected to occur. Loss of sagebrush habitat above which the bats could search for aerial prey would occur, and the bats might avoid areas of during nighttime drilling and completion activities. However, this habitat loss would represent a small portion of the feeding range.

Northern Goshawk (*Accipiter gentilis*) – This species is mostly limited to spruce/fir or aspen forests, such as atop the Roan Plateau, Battlement Mesa, and other areas that reach subalpine elevations. These habitats are not present within or near the project vicinity.

Brewer's Sparrow (*Spizella breweri*) – This project vicinity contains limited and marginal habitat for the Brewer's sparrow, which generally is restricted to extensive, uniform stands of sagebrush, primarily sagebrush steppe. If the species were to occur, oil and gas activities occurring with the home range of a nesting pair could cause individuals to shift their feeding patterns and to locate their nests to avoid the disturbance (noise, dust, human activity). However, this impact would be limited to the nesting season and would not be an issue for long-term production and maintenance operations.

Midget Faded Rattlesnake (*Crotalus viridis concolor*) – The midget faded rattlesnake is a small, pale-colored subspecies of the common and widespread western rattlesnake. The midget faded rattlesnake is endemic to a small area of southwestern Wyoming, northeastern Utah, and northwestern Colorado, including western Garfield County. Suitable habitats include sandy and rocky areas in pinyon-juniper and semi-desert shrub. Habitat within Parcel 6052 is not suitable for this species, and no adverse impacts are expected in conjunction with future oil and gas development.

Great Basin Spadefoot (*Spea intermontana*) – This species generally inhabits seasonal pools and ponds in pinyon-juniper woodland, sagebrush, and semi-desert shrubland habitats, mostly below 6,000 feet in elevation. The project vicinity is not suitable for this species, nor has it been discovered in the area. Therefore, impacts to this species are not expected.

Northern Leopard Frog (*Rana pipiens*) – Unlike the spadefoot, the northern leopard frog is limited to perennial waters, including ponds and slow-flowing perennial streams or persistent portions of intermittent streams. The species requires streams with good water quality and abundant aquatic or shoreline vegetation. Suitable habitat occurs along some streams in the general vicinity of the project. However, because the project would not involve habitat disturbance near water sources, impacts to this species are not expected.

Colorado River Cutthroat Trout (*Oncorhynchus clarki pleuriticus*) – Remaining populations of this subspecies of cutthroat trout occur mostly in headwater streams and lakes of the Colorado River drainage. There are no perennial streams within the vicinity of the project area, therefore the Colorado River cutthroat trout would not be affected by the Proposed Action.

Flannelmouth Sucker (*Catostomus latipinnis*), Bluehead Sucker (*C. discobolus*), and Roundtail Chub (*Gila robusta*) – Similar to the endangered Colorado River fishes described previously, these BLM sensitive fish species are vulnerable to alterations in flow regimes in the Colorado River that affect the availability and suitability of spawning sites and habitats needed for development of the larvae. The amount of consumptive water use associated with future oil and gas development of the lease parcel would not be expected to cause discernible impacts to flows in the Colorado River. Also similar to the endangered big-river fishes, these species are adapted to naturally high sediment loads and therefore would not be affected by increased sediment transport to the Colorado River. However, these species are vulnerable to inflow of sediments into smaller streams by smothering the eggs of these species. The potential for adverse impacts from inflow of chemical pollutants is also greater in small streams due less dilution and the presence of larval or juvenile fishes, which are more susceptible to mortality from acute toxicity. The stormwater control measures required and enforced by the State of Colorado for the protection of water quality would minimize the potential for impacts from inflow of sediments or toxicants, as would implementation of the SPCC plan required of all operators in the CRVFO area.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Vegetation

Affected Environment

Parcel 6052 lies within a Wyoming big sagebrush shrubland with scattered greasewood (*Sarcobatus vermiculatus*) shrubs. Dominant forbs and grasses are mostly non-native species such as crested wheatgrass (*Agropyron cristatum*), cheatgrass, redstem filaree, and Russian thistle.

Environmental Consequences

Proposed Action

If Parcel 6052 were leased and developed, vegetation would likely be impacted by subsequent oil and gas exploration and development activities. The extent of the disturbance would depend on the amount of development approved by the BLM. With implementation of the standard COAs applied by the CRVFO to all authorizations for surface-disturbing activities associated with oil and gas, desirable forbs and grasses could be established within 2 to 3 years. However, a substantially longer period, typically more than 5 years, would be required for the establishment of a self-sustaining native plant community that meets reclamation standards for cover and species composition. The CRVFO would apply its standard and site-specific reclamation requirements as COAs attached to any authorizations for surface-disturbing activities. These COAs address seedbed preparation, installation of approved native seed mixes, use of mulch, site protection from grazing, weed control, and monitoring of reclamation success.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be developed and produced; therefore, impacts to vegetation would not occur.

Visual Resources

Affected Environment

Parcel 6052 is located on private land south of the town of Silt. Federal lease terms regarding visual concerns are not applicable. Visual Resource Management (VRM) objectives do not apply to non-BLM lands. Visual values can only be protected at the landowner's discretion. Parcel 6052 is located on nearly flat terrain with little visual variety. The area is visually screened to some extent by the adjacent topography. Surrounding topography is composed of small rounded hills that visually block views to the parcel from primary travel corridors. Existing vegetation is composed of gray-green sagebrush flats and rural agricultural land. Parcel 6052 is visually fragmented by existing development including roads, the WAPA Rifle Substation, a high-voltage electrical transmission corridor, a recently constructed drill pad, and surrounding rural agricultural, residential, and oil and gas development (Figures 2 and 3).

Figure 2. View to north from center of Parcel 6052 toward existing drill and power lines.

Figure 3. View to west from center of Parcel 6052 toward existing Rifle Substation on the parcel.

Environmental Consequences

Proposed Action

Implementation of oil and gas development within Parcel 6052 would create contrasts by removing existing vegetation and exposing bare ground. Contrasts in color, form, line, and texture would be present within the existing landscape in the short term. Visual impacts such as light pollution, dust, and increased traffic from construction, drilling, and completion activities would also occur. In the long-term, interim reclamation of oil and gas development would reduce visual contrasts after two to three growing seasons. Whereas, the visual impacts associated with production activities and traffic related to oil and gas development would continue for the producing life of the wells.

No Action Alternative

The No Action Alternative constitutes a decision to not lease of the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with the development would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Wastes, Hazardous or Solid

Affected Environment

BLM Instruction Memoranda numbers WO-93-344 and CO-97-023 require that all National Environmental Policy Act documents list and describe any hazardous and/or extremely hazardous materials that would be produced, used, stored, transported, or disposed of as a result of a proposed project. The *Glenwood Springs Oil & Gas Leasing & Development Draft Supplemental Environmental Impact Statement* (BLM 1998), Appendix L, Hazardous Substance Management Plan, contains a comprehensive list of materials that are commonly used for oil and gas projects. It also includes a description of the common industry practices for use of these materials and disposal of the waste products. These practices are dictated by various Federal and State laws and regulations, and the BLM standard lease terms and stipulations that would accompany any authorization resulting from this analysis. The most pertinent of the Federal laws dealing with hazardous materials contamination are as follows:

- The Oil Pollution Act (Public Law 101-380) prohibits discharge of pollutants into waters of the US, which by definition would include any tributary, including any dry wash that eventually connects with the Colorado River.
- The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 96-510) provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment. It also provides national, regional, and local contingency plans. Applicable emergency operations plans in place include the National Contingency Plan (40 CFR 300, required by section 105 of CERCLA), the Region VIII Regional Contingency Plan, the Colorado River Sub-Area Contingency Plan (these three are Environmental Protection Agency produced plans), the Mesa County Emergency Operations Plan (developed by the Mesa County Office of Emergency Management), and the BLM Grand Junction Field Office Hazardous Materials Contingency Plan.
- Hazardous spill cleanup activities that fall outside the criteria set forth in CERCLA still require the submission of a Preconstruction Notice to the U.S. Army Corps of Engineers and may be subject to Nationwide Permit Number 38.
- The Resource Conservation and Recovery Act (RCRA) (Public Law 94-580) regulates the use of hazardous substances and disposal of hazardous wastes. Note: While oil and gas lessees are exempt from RCRA, right-of-way holders are not. RCRA strictly regulates the management and disposal of hazardous wastes.

Emergency response to hazardous materials or petroleum products on BLM lands are handled through the BLM Grand Junction Field Office contingency plan. The BLM would have access to regional resources if justified by the nature of an incident.

Environmental Consequences

Proposed Action

Possible pollutants that could be released during the mobilization of the rig include diesel fuel, hydraulic fluid, and lubricants. These materials would be used during rigging up of the drilling rig, refueling and maintaining vehicles and equipment, not for the road, pad, and pipeline because it is existing. Potentially harmful substances used in the operation would be kept onsite in limited quantities and trucked to and from the site as required. No hazardous substance, as defined by 40 CFR 355 would be used, produced, stored, transported, or disposed of in amounts above threshold quantities.

Surface water or groundwater could be impacted as a result of oil and gas development. Pollutants potentially released include hydrocarbon condensate, produced water (if the wells in the area produce water), and glycol (carried to the site and used as antifreeze). While uncommon, an accident could result in the release of any of these materials and contamination of surface water or soil. Improper casing and cementing procedures could result in the contamination of groundwater resources. In the case of any release, the responsible party would be liable for cleanup and damages. Depending on the scope of the accident, any of the above referenced contingency plans would be activated to provide emergency response. At a minimum, the BLM Grand Junction Field Office contingency plan would apply.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Water Quality, Surface and Ground

Surface Water

Affected Environment

Parcel 6052 is located within Colorado River above Rifle Creek USGS 6th code hydrologic unit, which empties directly into the Colorado River approximately 1 mile to the northeast. This area is within the Rifle municipal watershed, which is protected by the City of Rifle as a drinking water supply. According to the *Stream Classifications and Water Quality Standards* (CDPHE, Water Quality Control Commission [WQCC] Regulation No. 37) (CDPHE 2007), unnamed ephemeral drainages that drain most of the project vicinity are within segment 4a , which includes tributaries to the Colorado River from its confluence with the Roaring Fork River to a point immediately below its confluence with Parachute Creek. Following is a brief description of segment 4a.

> *Segment 4a – This segment has been classified aquatic life cold 2, recreation N, water supply, and agriculture. Aquatic life cold 2 indicates that this watercourse is not capable of sustaining a wide variety of cold or warm water biota due to habitat, flows, or uncorrectable water quality conditions. Recreation class N refers to waters that are not suitable or intended to become suitable for primary contact recreation. This segment is suitable for potable water supplies and agricultural purposes that include irrigation and livestock use.*

All streams within segment 4a are on the State of Colorado's *303(d) List of Impaired Waters and Monitoring and Evaluation List* (CDPHE, WQCC Regulation No. 93) (CDPHE 2010) for naturally occurring high levels of selenium. *Colorado's Monitoring and Evaluation List* identifies water bodies where there is reason to suspect water quality problems, but uncertainty also exists regarding one or more factors. Tributaries to the Lower Colorado River, which include the project area, are on the State of Colorado's *Monitoring and Evaluation List* for sediment load (CDPHE, WQCC Regulation No. 93). The USGS has collected limited surface water flow and quality data at sites along Dry Hollow and Mamm Creeks, which flow near the project area (USGS 2007) (Table 7).

No sediment measuring stations are present on the Colorado River or its tributaries near the pad location. The closest downstream station on the Colorado River is near DeBeque, Colorado. A summary of USGS data collected at this station indicates that the mean sediment load was 1,817 tons per day during the

period of 1974 to 1976. The maximum and minimum for this location during the same period was 41,300 and 8 tons/day respectively (USGS 2007).

Table 7. Selected Water Quality Data for Two Sampling Locations near the 36L Pad

Parameter	***Dry Hollow Creek near Silt, CO USGS Site # 393203107392 10/15/03***	***Mamm Creek near Silt, CO USGS Site # 393136107423401 10/16/03***
Instantaneous discharge (cfs)	0.15	0.15
Temperature, water (°C)	10	12
Field pH (standard units)	7.9	8.5
Specific conductance (µS/cm/cm at 25°C)	2700	2260
Total Dissolved Solids (mg/L)	NA	1590
Hardness as CaCO3 (mg/L)	NA	717
Chloride (mg/L)	NA	50

Note: NA is data not available
Source: USGS (2007).

Environmental Consequences

Proposed Action

Development of Parcel 6052 would result in impacts to surface water associated with traffic, waste management, and the use, storage and transportation of fluids (i.e., chemicals, condensate, and produced water). Long- term soil protection could be achieved by continued road and pad maintenance to reduce erosion, remediation of contaminated soils and minimizing the size of the long-term pad footprint through interim reclamation measures. As proposed, these measures would include crowning road surfaces, installing culverts and drainage systems, and applying gravel to all upgraded BLM roads in the project area to a compacted thickness of 6 inches.

Oil and gas waste management practices have the potential to contaminate soils and surface water. Contamination of soils could cause long-term reduction in site productivity resulting in increased erosion and potential sediment and contaminant delivery to nearby waterways during runoff. Use, storage, and transportation of fluids such as produced water, hydraulic fracturing fluids, and condensate have the possibility of spills that could migrate to surface or groundwater. Additionally, tanks used to store produced water and condensate would be required to be placed in secondary containment to prevent offsite release. In the event of an accidental release, produced water and condensate would be confined for cleanup in a containment area and would not migrate to surrounding soils or surface waters. Pipelines associated with the transport of these liquids would be pressure tested to detect leakage prior to use.

The CRVFO would apply standard and site-specific COAs related to protection of water quality to any authorizations for surface-disturbing activities. In addition, because the lease would be located within the City of Rifle municipal watershed, any oil and gas operations would require permits and authorizations from the City prior to any ground-disturbing activities within the watershed would be required.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not

be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Waters of the U.S.

Affected Environment

No waters of the U.S. are contained within lease parcel 6052. Waters of the U.S. located in the project vicinity include the Dry Hollow and Mamm Creeks. Section 404 of the Clean Water Act requires a Department of the Army permit from the U.S. Army Corps of Engineers (USACE) prior to discharging dredged or fill material into waters of the U.S. as defined by 33 CFR Part 328.

Environmental Consequences

Proposed Action

Because the lease does not contain any Waters of the U.S. and an extensive network of roads already exist in the area, no new crossings of waters of the U.S. are anticipated.

Improperly designed crossings of small ephemeral drainages, in particular any undersized or poorly aligned culverts, could result in soil degradation, including erosion at culvert outlets. This could potentially supply sediment to the Colorado River approximately 1.5 mile to the north. However, standard and site-specific surface-use COAs listed above under the discussion of surface water would be implemented to protect the Colorado River, and any other waters of the U.S. potentially impacted by long-distance stormflow transport.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Groundwater

Affected Environment

Groundwater within the proposed development area occurs in both alluvial and sedimentary aquifers. Alluvial fresh-water wells are the most productive, and consist of boulders, cobbles, gravel, sand, silt, and clay. Alluvial well depths are usually less than 200 feet, and water levels typically range between 100 to 150 feet. Most fresh-water wells are drilled in support of rural residences and the numerous agricultural operations found throughout the Piceance Basin.

Two bedrock aquifer units are identified within the Piceance Basin. The Upper and Lower Piceance Basin aquifers are separated by two confining units. The upper unit is found within the Uinta Formation and the upper part of the Parachute Creek Member of the Green River Formation (Robson and Saulnier 1981). The lower Piceance Basin aquifer unit is found within the lower part of the Parachute Creek Member, separated from the upper unit by the Mahogany oil shale interval. South of the Colorado River, these upper Tertiary-age aquifers have largely been eroded off, leaving isolated remnants of these

formations lacking connectivity. Beneath the Upper and Lower Piceance Basin aquifer systems is a confining unit consisting of the lower two members of the Green River Formation, and the Wasatch Formation, both of which are present in surface exposure within the project vicinity. Although considered a confining unit, some fresh-water wells are completed in the discontinuous water bearing sands of the Wasatch Formation. These water-bearing intervals are considered to be localized due to the lenticular nature of the strata.

Below the Wasatch Formation is the Cretaceous-age Mesaverde aquifer. This aquifer consists of sandstone with interbedded shales and coal of the Williams Fork Formation and the marine sands and shales of the Iles Formation. The depth to the top of this aquifer beneath the project area is more than 6,000 feet below ground surface (bgs), far too deep to be considered for production. The water quality of the Mesaverde aquifer is considered poor as well, due to the minerals nahcolite ($NaHCO_3$, sodium bicarbonate), dawsonite ($NaAl(OH)_2CO_3$), and halite (NaCl), with total dissolved solids (TDS) ranging in excess of 10,000 mg/L at that depth in that portion of the basin (EPA 2004).

According to the Colorado Division of Water Resources (DWR), there are 4 permitted fresh water wells located within a 0.5-mile radius of parcel 6052. The nearest fresh water wells are located approximately 1,400 feet southwest. The wells are listed as domestic use, are 100 feet deep, have a water level of 40 feet, and yield 12.5 gpm. The next closest well, 2,200 feet west-southwest, is listed as commercial use, has a depth of 49 feet, a static water level of 24 feet and a discharge rate of 50 gpm. The final well, located east-northeast of the parcel, is listed as a monitoring well, has a depth of 240 feet, a static water level of 110 feet and a pump rate of 0.5 gpm. The surface casing will be set at 1000 feet MD and all potentially useable water zones and potential production zones will be protected. The standard COA should be included, which requires cementing across any usable water zones encountered below the surface casing. Barite and a selection of 'sized' lost circulation materials will be kept on location during drilling operations in the event they may be needed to mitigate any lost circulation that may occur. No additional COAs will be required.

Environmental Consequences

Proposed Action

Potential impacts to groundwater resources from oil and gas development of Parcel 6052 would include contamination of the groundwater with produced water, drilling mud, and petroleum constituents. Hydraulic fracturing would be incorporated to complete the wells, which would include both fresh and produced water mixed with proppants, or propping agents. Typical proppants include sand, aluminum, glass, or plastic beads, mixed with water and minor amounts, less than 1%, of other compounds such as corrosion, friction, and scale inhibitors (EnerMax 2007).

Propping agents are used to keep open the fractures created near the borehole during the hydrofracturing process, allowing the gas trapped within the formation to move freely into and up the borehole, where it is captured. Hydrofracturing would be conducted at greater than 6,000 feet bgs (below ground surface) and is unlikely to cause impacts to groundwater found near the surface. Drilling scenarios are developed to prevent fluids and produced hydrocarbons from migrating upward into fresh-water zones. Geologic and engineering reviews are conducted to ensure that the cementing and casing programs are adequate to protect all downhole resources. The interbedded and impermeable nature of the Williams Fork Formation also creates a series of confining units inhibiting fluids at depth from migrating into near surface zones, as well as preventing shallow groundwater sources from migrating into deeper water zones.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Wildlife, Aquatic

Affected Environment

The well pad is located approximately 1.5 mile south of the Colorado River. The Colorado River contains a variety of fishes, including introduced non-native trout, native and non-native prey (nongame) fishes, and aquatic macroinvertebrates.

Environmental Consequences

Proposed Action

Because development of Parcel 6052 would not involve surface-disturbing activities in proximity to a perennial stream, no direct impacts to aquatic vertebrates or the types of macroinvertebrates on which fishes typically fee would occur. Transport of eroded soil materials to the Colorado River would be addressed through the stormwater control measures required by the Colorado Department of Health and Environment, Water Quality Control Division. The standard COAs described in the section on Surface Water, above, would also reduce the risk of transport of eroded soil materials into the Colorado River. Another potential risk to aquatic organisms is associated with spillage of produced water, condensate, or other chemicals as a result of a truck accident. This occurrence is uncommon, and oil and gas operators are required to have a spill prevention, containment, and cleanup plan in place. A more likely source of pollutant transport into surface waters outside the lease but within the general vicinity is the aerial deposition of fugitive dust resulting from increased vehicular traffic along unpaved access roads.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

Wildlife, Terrestrial

Affected Environment

Terrestrial wildlife habitats in the project vicinity are dominated by Wyoming big sagebrush. This habitat is capable of supporting resident or transient populations of a variety of terrestrial vertebrates typically found in sagebrush or other semi-desert shrublands at similar elevations in much of western Colorado. The following discussions address primarily the species not included in earlier sections on Migratory Birds and Special Status Species.

Large Mammals

The site is located within winter range and severe winter range for both mule deer (*Odocoileus hemionus*) and Rocky Mountain elk (*Cervus elaphus nelsoni*) as mapped by CDOW (available online at http://ndis.nrel.colostate.edu/). Winter range is defined as that part of the overall range of a species within which 90% of the individuals are located during the average five winters out of ten from the first heavy snowfall to spring green-up, or during a site-specific period of winter as defined for each data analysis unit (DAU). Severe winter range is that part of the range of a species where 90 percent of the individuals are located when the annual snowpack is at its maximum and/or temperatures are at a minimum in the two worst winters out of ten. Field surveys indicate that the project area is occupied winter range for elk and that mule deer occupy on a year-round basis.

Two medium-sized carnivores, the coyote (*Canis latrans*) and bobcat (*Lynx rufus*), are also present throughout the region in open habitats and broken or wooded terrain, respectively, where they hunt for small mammals, reptiles, and ground-dwelling birds. Smaller carnivores in habitats similar to those near the project site include the raccoon (*Procyon lotor*) and striped skunk (*Mephitis mephitis*).

Small mammals present in sagebrush shrublands in the vicinity of Parcel 6052 include the least chipmunk (*Tamias minimus*) and desert cottontail (*Sylvilagus audubonii*). Rodents and, to a lesser extent rabbits, are the primary prey base for a variety of avian and mammalian predators.

Reptiles and Amphibians

Species most likely to occur in the project area include the western fence lizard (*Sceloporus undulatus*) and gopher snake (bullsnake) (*Pituophis catenifer*) in xeric shrublands or grassy clearings. More mesic sites may support the western terrestrial garter snake (*Thamnophis elegans*).

Nearby drainages (Dry Hollow and West Mamm creeks) provide potentially suitable for Woodhouse's toad (*Bufo woodhousii*) and the western chorus frog (*Pseudacris triseriata*). Within the CRVFO and vicinity, the spadefoot toad and Woodhouse's toad occur primarily along ephemeral washes that do not support fish and contain pools of water for a period of at least a few weeks every spring. The chorus frog occurs primarily in cattail and bulrush wetlands and along the vegetated margins of seasonal or perennial ponds and slow-flowing streams. Some existing stock ponds and slow-flowing portions of the drainages are potentially suitable for the northern leopard frog, though none have been documented.

Environmental Consequences

Proposed Action

The greatest impact on wildlife, especially big game and raptors, resulting from oil and gas development of Parcel 6052 would be the disturbance caused by increased human activity, equipment operation, vehicle traffic, harassment by any dogs brought to the site by contractors, and noise related to drilling and completion activities. Most species of wildlife are relatively secretive and distance themselves from these types of disturbance or move to different areas screened by vegetation screening or topographic features. This avoidance, referred to as displacement, results in underuse of habitat near the disturbance. Avoidance of forage and cover resources adjacent to disturbance reduces habitat utility and the capacity of the affected acreage to support wildlife populations (BLM 1999a).

The standard COAs applied by the CRFVO for the protection of raptors and other migratory birds in conjunction with oil and gas projects would provide protection for the terrestrial vertebrates addressed in this section.

No Action Alternative

The No Action Alternative would constitute a decision to not lease the Federal mineral estate described in this EA. Under the No Action Alternative, oil and gas resources contained within Parcel 6052 would not be development and produced. Consequently, adverse impacts potentially associated with development of Parcel 6052 would not occur, nor would the benefits associated with production of Federal oil and gas resources contained within the lease boundary.

SUMMARY OF CUMULATIVE IMPACTS

Historically, habitat loss or modification in the CRVFO area was characteristic of agricultural, ranching lands, rural residential, with localized industrial impacts associated with the railroad and I-70 corridors and the small communities. More recently, the growth of residential and commercial uses, utility corridors, oil and gas developments, gravel mining along the Colorado River, and other rural industrial uses has accelerated the accumulation of impacts in the area. Cumulative impacts have included (1) direct habitat loss; (2) habitat fragmentation and decreases in habitat quality and effectiveness; (3) elevated potential for runoff, erosion, and sedimentation; (4) increased potential for pollution from chemicals used for industrial and agricultural applications; (5) expansion of noxious weeds and other invasive species; and (6) increased noise and traffic and reductions in the scenic quality of the area (BLM 1999a: 4-1 to 4-68).

Although none of the cumulative impacts described in the 1999 FSEIS (BLM 1999a) was characterized as significant, and while new technologies and regulatory requirements have reduced the impacts of some land uses, it is nonetheless clear that past, present, and reasonably foreseeable future actions has had and would continue to have adverse affects on various elements of the human environment. The anticipated impact levels for existing and future actions range from negligible to locally major, and primarily negative, for specific resources. The primary reasons for this assessment are twofold: (1) the rate of development, particularly oil and gas development, has until recently been increasing in the area, resulting in an accelerated accumulation of individually nominal effects; and (2) residential and commercial expansion, as well as most of the oil and gas development, has occurred private holdings lands where mitigation measures designed to protect and conserve resources are not in effect.

While development of Parcel 6052 would contribute to the collective adverse impacts for some resources, this contribution would be negligible, since the 12.1-acre lease area would support only a single oil and gas well at the current 10-acre downhole spacing applicable to the area.

PERSONS AND AGENCIES CONSULTED

Susan Starcevich, Western Area Power Administration, Lakewood, Colorado
Michael Warren, Colorado Division of Wildlife, Grand Junction, Colorado

INTERDISCIPLINARY TEAM REVIEW

Table 8 lists the members of the CRVFO Interagency Energy Team who participated in the impact analysis of leasing and development Parcel 6052—including a site visit, review of available resource information, and evaluation of lease stipulations in relation to the types of impacts likely to result from subsequent oil and gas exploration and development.

Table 8. The BLM Interdisciplinary Team Authors and Reviewers		
Name	***Title***	***Areas of Participation***
Allen Crockett	Supervisory Natural Resource Specialist	NEPA Review; Project Coordinator
Julie McGrew	Natural Resource Specialist	Project Natural Resource Specialist; Access and Transportation, Noise, Socio-Economics, Visual Resources
Beth Brenneman	Ecologist	Invasive Non-native Species, Special Status Species
John Brogan	Archaeologist	Cultural Resources, Native American Religious Concerns
Shauna Kocman	Hydrologist	Air Quality, Surface Water, Water Quality, Soils
Sylvia Ringer	Wildlife Biologist	Migratory Birds, Special Status Species, Aquatic and Terrestrial Wildlife
Todd Sieber	Geologist	Fossil Resources, Geology and Minerals, Groundwater

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ATTACHMENT A

Pre-DNA/EA Parcels Proposed for Lease

November 2011 - Colorado Competitive Oil & Gas Lease Sale DRAFT

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Attachment A
Pre-EA Parcels Proposed for Lease
November 2011 - Colorado Competitive Oil & Gas Lease Sale

PARCEL ID: 6052 SERIAL #:

T. 0060S., R 0920W., 6TH PM
Sec. 16: EXHIBIT A M&B DESC; U.S. Interest 100.00%
Sec. 16: SWSW IN EXHIBIT A; U.S. Interest 100.00%

Garfield County
Colorado 12.100 Acres

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.

All lands are subject to Exhibit DOE-09 to protect Western Area Power Administration, Rifle Substation.

All lands are subject to GS-TL-01 to protect use of winter range by deer and elk..

DOE; GJDO: GSRA

PARCEL ID: 6068 SERIAL #:

T. 0080S., R 0970W., 6TH PM
Sec. 10: NE,E2NW,S2;
Sec. 14: W2SW,SESW;
Sec. 15: ALL;
Sec. 23: W2W2;

Mesa County
Garfield County
Colorado 1480.000 Acres

The following lands are subject to Exhibit CO-08 to protect special status plant species:

T. 0080S., R 0970W., 6TH PM
Sec. 14: S2SW;

The following lands are subject to Exhibit CO-15 to protect grouse winter habitat:

T. 0080S., R 0970W., 6TH PM
Sec. 14: NWSW,SESW;

The following lands are subject to Exhibit CO-26 to protect fragile soils:

T. 0080S., R 0970W., 6TH PM
Sec. 14: W2SW,SESW;

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.

The following lands are subject to Exhibit GJ-13EE to protect the Uinta Basin Hookless Cactus:

T. 0080S., R 0970W., 6TH PM
Sec. 10: SWSW;
Sec. 14: S2SW;
Sec. 15: NWNW,SWSW;
Sec. 23: W2NW,NWSW;

The following lands are subject to Exhibit GJ-2GP to protect scenic and natural values in a scenic highway corridor:

T. 0080S., R 0970W., 6TH PM
Sec. 14: W2SW,SESW;
Sec. 15: E2SE;
Sec. 23: W2W2;

The following lands are subject to Exhibit GS-CSU-04 to protect erosive soils and slopes over 30%:

T. 0080S., R 0970W., 6TH PM
Sec. 10: E2,E2SW;
Sec. 14: W2SW,SESW;
Sec. 15: NE,NENW,N2SE,SESE;

The following lands are subject to Exhibit GS-CSU-05 to protect scenic values of Class II visual resource management areas:

T. 0080S., R 0970W., 6TH PM
Sec. 10: E2,E2SW;
Sec. 14: W2SW;
Sec. 15: NE,NENW,N2SE,SESE;

The following lands are subject to Exhibit GS-NSO-12 to protect Threatened and Endangered Species:

T. 0080S., R 0970W., 6TH PM
Sec. 14: W2SW,SESW;
Sec. 15: E2SE;

The following lands are subject to Exhibit GS-NSO-15 to maintain site stability and productivity of slopes greater than 50%:

T. 0080S., R 0970W., 6TH PM
Sec. 14: SESW;

The following lands are subject to Exhibit GS-TL-01 to protect big game winter habitat:

T. 0080S., R 0970W., 6TH PM
Sec. 10: E2,E2SW;
Sec. 14: W2SW,SESW;
Sec. 15: NE,NENW,N2SE,SESE;

BLM; GJDO: GJRA

PARCEL ID: 6069 SERIAL #:

T. 0080S., R 0970W., 6TH PM
Sec. 14: NESW,W2SE;

Mesa County
Colorado 120.000 Acres

All lands are subject to Exhibit CO-15 to protect grouse winter habitat.

All lands are subject to Exhibit CO-26 to protect fragile soils.

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.

The following lands are subject to Exhibit GJ-13EE to protect the Uinta Basin Hookless Cactus:

T. 0080S., R 0970W., 6TH PM
Sec. 14: SWSE;

All lands are subject to Exhibit GJ-2GP to protect scenic and natural values in a scenic highway corridor.

All lands are subject to Exhibit GS-CSU-04 to protect erosive soils and slopes over 30%.

All lands are subject to Exhibit GS-CSU-05 to protect scenic values of Class II visual resource management areas.

All lands are subject to Exhibit GS-NSO-12 to protect Threatened and Endangered Species.

The following lands are subject to Exhibit GS-NSO-15 to maintain site stability and productivity of slopes greater than 50%:

T. 0080S., R 0970W., 6TH PM
Sec. 14: W2SE;

All lands are subject to Exhibit GS-TL-01 to protect big game winter habitat.

BLM; GJDO: GSRA

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ATTACHMENT B

Parcels Available for Lease with Deferred Portions

November 2011- Colorado Competitive Oil & Gas Lease Sale

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Attachment B
Parcels Available for Lease with Deferred Portions
November 2011 - Colorado Competitive Oil & Gas Lease Sale

Available Portions of Parcel ID: 6068 SERIAL #:

None

Deferred All of Parcel ID: 6068

T. 0080S., R 0970W., 6TH PM Parcel deferred to protect special status plants during RMP revision process
Sec. 10: NE,E2NW,S2;
Sec. 14: W2SW,SESW;
Sec. 15: ALL;
Sec. 23: W2W2;

Mesa County
Garfield County
Colorado 1480.000 Acres

BLM; GJDO: GJRA

Available Portions of Parcel ID: 6069 SERIAL #:

None

Deferred All of Parcel ID: 6069

T. 0080S., R 0970W., 6TH PM Parcel deferred to protect special status plants during RMP revision process
Sec. 14: NESW,W2SE;

Mesa County
Colorado 120.000 Acres

BLM; GJDO: GSRA

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ATTACHMENT C

Parcels Available for Lease with Applied Stipulations
November 2011 - Colorado Competitive Oil & Gas Lease Sale
Lease Stipulations

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Attachment C
Parcels Available for Lease with Applied Stipulations
November 2011 - Colorado Competitive Oil & Gas Lease Sale

PARCEL ID: 6052 SERIAL #:

T. 0060S., R 0920W., 6TH PM

Sec. 16: EXHIBIT A M&B DESC;	U.S. Interest 100.00%
Sec. 16: SWSW IN EXHIBIT A;	U.S. Interest 100.00%

Garfield County
Colorado 12.100 Acres

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.

All lands are subject to Exhibit DOE-09 to protect Western Area Power Administration (Western), Rifle Substation

All lands are subject to Exhibit GS-TL-01 to protect use of winter range by deer and elk.

DOE; GJDO: GSRA

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EXHIBIT CO-09

Lease Number: 6052

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:

All lands

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-34

Lease Number: 6052

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:

All lands

EXHIBIT CO-39

Lease Number: 6052

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:

All lands

EXHIBIT DOE-09

Lease Number: 6052

NO SURFACE OCCUPANCY STIPULATION

No surface occupancy or use is allowed on the lands described below (legal description or other description):

All lands

For the purpose of:

Protection of Western Area Power Administration (Western), Rifle Substation.

No well site pad can occur within the boundaries of the fee lands owned by Western and all drilling activity must be outside the perimeter fence.

Since there are overhead transmission lines associated with the substation, any well pad site must be located such that if the drilling rig toppled, it would not hit the approach spans leading into and out of the substation. This stipulation is provided to ensure the safe and reliable operation of the electric power grid. If the drill rig must be located closer to Western's facilities than the safe falling distance, due to environmental, geographic or other legitimate reasons, then Western will require a bond to protect its substation and power lines.

The access road shall not be blocked, damaged or otherwise occupied such that Western linemen and others responsible for the maintenance and operation of the Rifle Substation and approach spans are prevented from completing their work.

If the lessee plans to conduct only exploration drilling to determine the recoverable oil and gas, the drill rig should be a minimum of 100 feet from the outside of the substation fence or a distance equal to the height of the drill rig if higher than 100 feet.

Changes to this stipulation maybe 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.)

EXHIBIT GS-TL-01

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 to April 30

On the lands described below:

All lands

For the purpose of protecting:

Big Game Winter Habitat (includes mule deer, elk, pronghorn antelope and bighorn sheep) which includes severe big game winter range and other high value winter habitat as mapped by the Colorado Division of Wildlife.

Any changes to this stipulation will be made in accordance with the land use plan/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:
Under mild winter conditions, the last 60 days of the seasonal limitation period may be suspended after consultation with the CDOW. Severity of the winter will be determined on the basis of snow depth, snow crusting, daily mean temperatures, and whether animals were concentrated on the winter range during the winter months. This limitation may apply to work requiring a Sundry Notice pending environmental analysis of any operational or production aspects.

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ATTACHMENT D

Title Information for Parcel 6052 (Includes a Determination of Availability of Mineral Resources for Leasing by the BLM – Prepared by the BLM Colorado State Office)

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RIFLE SUBSTATION

Title Information
August 2007

The Western Area Power Administration (Western) Rifle Substation is located on lands transferred to Western from the Bureau of Reclamation under the Organization Act of 1977. It consists of 12.1 acres in the SW¼SW¼ of section 16, Township 6 South, Range 92 West, 6th Principal Meridian, Garfield County, Colorado. (Information added 5/12/11: The Organization Act granted DOE authority to publish regulations under the Mineral leasing Act and the Mineral Leasing Act for Acquired Lands which relate to, among other matters, establishing diligence requirements and setting rates of production. This same act also specifically provided that the Secretary of the Interior "shall be solely responsible for the issuance and supervision of Federal leases and the enforcement of all regulations applicable to the leasing of mineral resources." (42 USC 7153) In the 1982 DOE appropriations act, the provisions of the DOE Organization Act giving DOE certain authority to issue regulations related to rates of production, etc., were repealed. The remaining governing statutory language is as quoted above: i.e., the Secretary of the Interior (BLM)has the authority to issue oil and gas leases on WAPA lands, with the caveat that BLM has to obtain consent from the agency administering the surface).

According to the information in the transfer book, Reclamation acquired the lands from Sweenys, Inc. by Warranty Deed (Contract No. 14-06-400-4498, also Deed of Record, Book 383, Page 447, Garfield County, Colorado) dated December 2, 1966. The fee acquisition included the land for the Rifle Substation and two transmission line approach spans. A separate road easement dated December 2, 1966, provided access to the substation site.

In order to resolve the color of title, Western needs to determine whether the US received 100% of the minerals under the Rifle Substation in 1966, or if the US received some percentage less than 100% (this would mean the Sweenys did not own 100% of the minerals at the time they sold the Rifle Sub lands to the US, because if they had, under the Land Purchase Contract and Deed, the US would have gotten 100% of their ownership, surface and mineral estate both). Unfortunately, based on the incomplete title information provided to us by Reclamation, subsequent deeds for the SWSW of sec. 16 entered into by Sweenys' did not include an exception for the US ownership. It appears the same lands, after 1996, were sold with a ½ interest in minerals retained by Sweenys.

Western needs to determine the actual ownership of the mineral estate beneath the Rifle Substation. Reclamation may have acquired all of the minerals under the subject lands or some portion less than 100%. The answer depends on the Sweenys, Inc.'s actual ownership of the mineral estate at the time Sweeny sold the lands to Reclamation. Any subsequent deed entered into by Sweeny for these lands should have exempted the Rifle Sub lands, and Sweeny should not have reserved a ½ interest in the minerals.

A title search is needed to answer these questions.

1. Did Sweeny own 100% of the surface and mineral estates when the lands were sold to Reclamation?
2. If Sweeny did not own all the minerals, who had ownership in 1966 when the lands were sold to Reclamation?
3. Where Sweeny entered into subsequent sales of these lands, what is the chain of title that allowed Sweeny to reserve ½ of the mineral estate?

Rifle substation chain of title:

U.S. Patent to Oliver P.Y. Burch on Jan 3, 1911, Bk. 79, Pg. 504 (no reservation for mineral rights). Burch granted to his own company – Silt Orchard and Land Company before patent got recorded 504 (no reservation for mineral rights).

Silt Orchard granted back to Burch on 4/16/17, Bk. 78, Pg. 151 (no reservation for mineral rights).

Burch granted to Frank Nickolai, et al, on 9/19/19, Bk. 123, Pg. 53 (no reservation for mineral rights).

Nickolai granted back to Burch on 3/31/1921, Bk. 125, Pg. 386 (no reservation for mineral rights).

There is a gap or missing link from Oliver Burch to Ella Burch. Oliver probably died and Ella inherited property. Western conducted no search of the Probate Court records but there was nothing in the Clerk's records.

Ella Burch sold to Edgar Gwynn on 6/15/34, Bk. 179, Pg. 166 (no reservation for mineral rights).

Edgar Gwynn took out a mortgage (Bk. 147, Pp. 600) and then lost the property per Sheriff's Deed to Federal Land Bank dated Nov. 7, 1941 in Bk. 205, Pg. 380 (no reservation for mineral rights).

Federal Land Bank changed name to Federal Farm Mortgage property then sold per Special W.D. to Ralph Pitman on Feb. 20, 1945, Bk. 213, Pg. 340. **The bank reserved ¼ of all mineral rights in upon and under for a period of 25 yrs from and after March 30, 1944 and as long thereafter as there is production of the premises and they are being operated and developed.**

Pitman sold to Fred Popish on 2/24/45, Bk. 214, Pg. 469, only reference to minerals was what is stated above.

Popish sold to Miss Margaret Sweeny, et al, on March 3, 1945, subject to the mineral reservation referenced above.

Miss Margaret Sweeny, et al, sold an undivided 4/5ths to Miss Margaret Sweeny on 2/5/52, Bk. 263, Pg. 81 and there was no mention at all of the mineral rights.

Miss Sweeny sold to Sweeny Inc.

Sweeny Inc sold to the United States on Dec. 2, 1966. There was no reservation for mineral rights except if any existed to third parties.

Given the above, it appears that Western initially received ownership of at least ¾ of the mineral rights. It also appears that the reservation for the other ¼ was reserved to the Federal Farm Mortgage would have expired and reverted back to the current owner (Western). So it is likely that the U.S. would have 100% of the mineral rights.

<u>According to 30 USC § 352, BLM can lease the minerals on Western's fee-owned lands. This section provides that lands acquired by the US, including land obtained by purchase, may be leased by the Secretary of the Interior under the same conditions as contained in the leasing provisions of the mineral leasing laws</u>.

ATTACHMENT E

Letter from DOE to BLM dated March 29, 2011

Letter Reply from BLM to DOE dated June 3, 2011

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Department of Energy
Western Area Power Administration
P.O. Box 281213
Lakewood, CO 80228-8213

MAR 29 2011

Nancy McCarty, Land Law Examiner
Bureau of Land Management
Colorado State Office
2850 Youngfield St.
Lakewood, CO 80215-7093

2011 MAR 30 PM 2:02
DOI-BLM
CO STATE OFFICE

RE: Concurrence to Lease Minerals Beneath the Rifle Substation

Dear Ms. McCarty:

Western Area Power Administration (Western) is in receipt of the March 11, 2011 letter from Lynn Rust, Deputy State Director, Energy, Lands and Minerals, concerning a request by Antero Resources that the Bureau of Land Management (BLM) offer a 12.01-tract of unleased Federal minerals located in the SW¼ of section 16, Township; 6 South, Range 92 West, 6th Principal Meridian, Garfield County, Colorado at a future competitive oil and gas lease sale. We have also received a copy of the formal request package from Antero to the BLM Colorado State Director.

The specific lands being requested are owned in fee by Western and are currently occupied on the surface by our Rifle Substation, associated overhead powerlines and access road. Therefore, we are pleased to offer the following comments.

Western will concur with the leasing by BLM of unleased Federal minerals beneath the 12.01-acre parcel where the substation is located so long as the following stipulations are included in the lease agreement.

- No well site pad can occur within the boundaries of the fee lands owned by Western and all drilling activity must be outside the perimeter fence (a "no surface occupancy" lease is acceptable).

- Since there are overhead transmission lines associated with the substation (see the enclosed map), any well pad site must be located such that if the drilling rig toppled it would not hit the approach spans leading into and out of the substation. This stipulation is provided to ensure the safe and reliable operation of the electric power grid. If the drill rig must be located closer to Western's facilities then the safe falling distance due to environmental, geographic or other legitimate reasons, then Western will require a bond to protect its substation and powerlines.

- The access road shall not be blocked, damaged or otherwise occupied such that Western linemen and others responsible for the maintenance and operation of the Rifle Substation and approach spans are prevented from completing their work.

- If Antero Resources plans to conduct only exploration drilling to determine the recoverable oil and gas, then the drill rig should be a minimum of 100 feet from the outside of the substation fence or a distance equal to the height of the drill rig if higher than 100 feet.

- If oil and gas will be extracted from beneath the substation, then Western will require a subsidence study to determine what will be the expected subsidence of the ground and the expected zone of influence around the pump. Any relative differential subsidence could affect the operating mechanism of the electric switches or could break rigid connections within the substation. If the study shows that subsidence could result in damage to the switches or other equipment located in the Rifle Substation, then BLM should not offer the parcel at a competitive oil and gas lease sale.

Western appreciates the opportunity to review Antero Resources request to lease the oil and gas minerals lying beneath our Rifle Substation. With this letter we are providing our concurrence to BLM to offer the Federal minerals at an upcoming oil and gas lease sale pending the outcome of the subsidence study and provided that the stipulations provided in this letter are included in the lease agreement.

Please feel free to contact Susan Starcevich at (720) 962-7275 or starcevi@wapa.gov if you need additional information or have any questions.

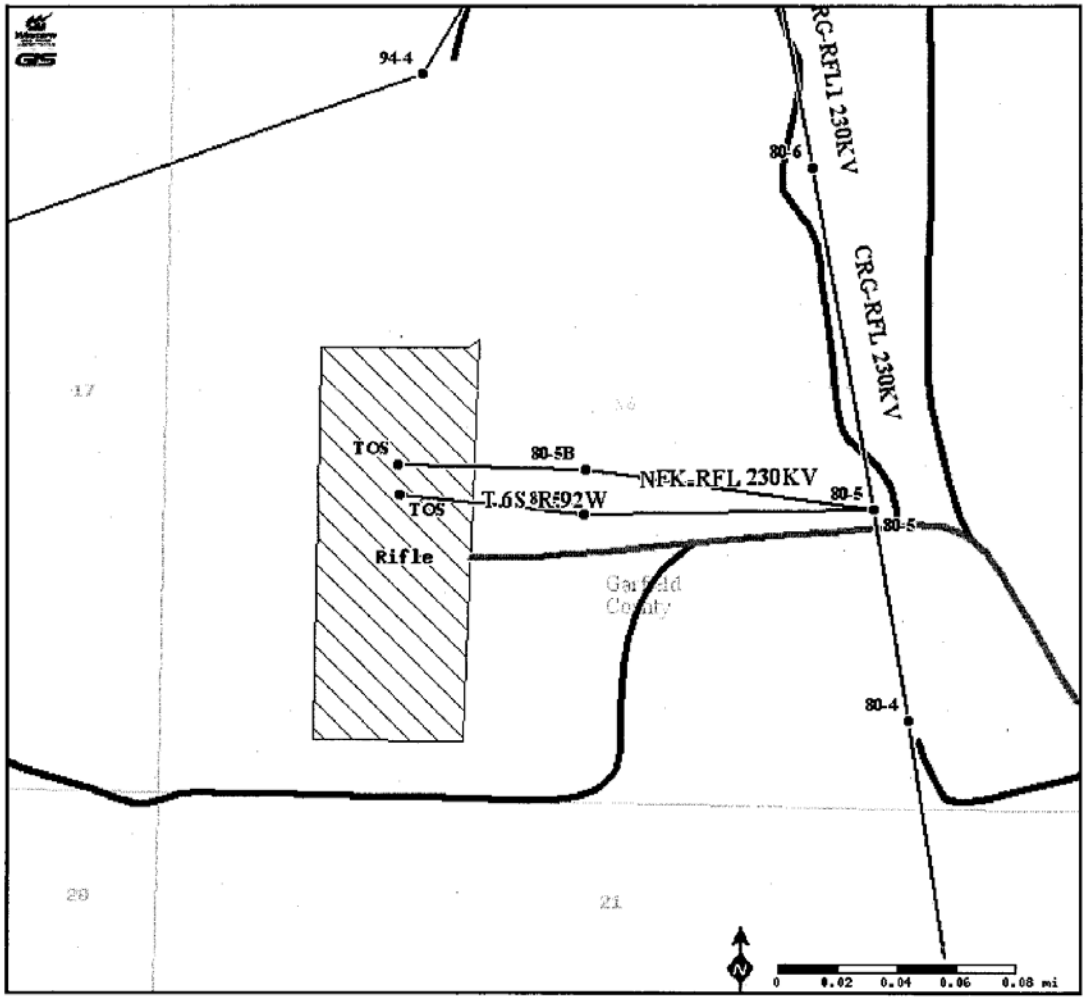
Sincerely,

Steven W. Webber
Lands Team Lead

Enclosures

DOI-BLM
CO STATE OFFICE
COSO MANAGEMENT
2011 MAR 30 PM 2:02

Rocky Mountain Region



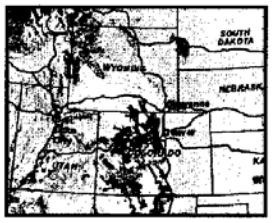
Legend

Map Parameters
UTM ZONE 13, NAD83
Scale 1:3,397

minx: 269404 *maxx:* 270056
miny: 4377783 *maxy:* 4378259

3/22/2011 10:25 A.M.

Western Area Power Administration
An agency of the U.S. Department of Energy



This map and data are the property of WAPA/DOE and are intended for planning and analysis only. No reproduction or copying of this product is allowed without the sole consent of WAPA/DOE. To contact WAPA about this map, please call 1-800-336-7288.

2011 MAR 30 PM 2:02
CO STATE OFFICE
COSO MAIL ROOM
DOI-BLM

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Colorado River Valley Field Office
2300 River Frontage Road
Silt, Colorado 81652
Phone 970-876-9000, Fax 970-876-9090

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
3160/CON040

June 3, 2011

Steven W. Webber
Lands Team Lead
Western Area Power Administration
P.O. Box 281213
Lakewood, Colorado 80228-8213

Dear Mr. Webber:

I am writing in reply to your letter of March 19, 2011, to Nancy McCarty of the BLM Colorado State Office regarding the proposed competitive oil and gas lease sale of a parcel of Federal mineral estate, designated by the BLM as Parcel 6052, located in the SW¼, Section 16, Township 6 South, Range 92 West, Sixth Principal Meridian, Garfield County, Colorado. The parcel underlies a 12.100-acre tract of DOE land that contains the Rifle Substation operated by the Western Area Power Administration.

In your letter, you requested that certain restrictions be attached to the lease sale of that parcel. The final item was a request that BLM conduct, or require the party nominating the parcel for lease sale to conduct, a subsidence study. While the other restrictions requested in your letter have been addressed in the pre-leasing environmental assessment (EA) prepared by BLM's Colorado River Valley Field Office (CRVFO), the BLM has determined that a subsidence study is not needed. Your reference to a "pump" suggests that you may be envisioning a shallow well in which fluids are extracted from relatively near the surface. In the case of fluid minerals within the CRVFO area, however, the target is natural gas at a depth of many thousands of feet beneath the ground surface. The natural gas and associated liquids are not pumped but flow as a result of pressure within the formation. Because of the great thickness of overlying competent rock, no potential exists for subsidence associated with accessing and producing from the targeted strata. However, if Western believes it necessary based on the surface location of a proposed well into Parcel 6052, the CRVFO can require an analysis of possible ground vibrations associated with drilling and completing activities in conjunction with review of the Application for Permit to Drill (APD).

If and when a development proposal is submitted, we will contact you and provide an opportunity for you or other representatives of Western to participate in the planning process, including review of the development proposal and presence at site visits. Please do not hesitate to contact me at 970-876-9005.

Sincerely,

Allen B. Crockett, Ph.D., J.D.
Supervisory Nat. Res. Spec./Phys. Sci.

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ATTACHMENT F

Public Comment Letter and BLM Responses

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Center for Native Ecosystems

Saving endangered plants and wildlife in the Rockies

COLORADO ENVIRONMENTAL COALITION

WILDERNESS WORKSHOP

THE WILDERNESS SOCIETY

July 6, 2011

RE: Comment to DOI-BLM-CO-N040-2011-0075 EA

Submitted Electronically to: crvfo_web@blm.gov

Dear BLM Colorado River Valley Field Office,

Please accept these comments on behalf of Center for Native Ecosystems, Wilderness Workshop, Colorado Environmental Coalition, and The Wilderness Society ("Commenters") concerning the DOI-BLM-CO-N040-2011-0075 EA for leasing parcels in the Colorado River Valley Field Office ("CRVFO") in November 2011. We thank you for the opportunity to provide input on this proposal.

I). Introduction:

a). Commenting parties:

Center for Native Ecosystems ("CNE") works to conserve and recover the native species and ecosystems of the Greater Southern Rockies using the best available science. CNE's staff and members visit, recreate on, and use lands on or near the parcels proposed for leasing. Our staff and members enjoy various activities on or near land proposed for leasing, including viewing and studying rare and imperiled wildlife and native ecosystems, hiking, camping, taking photographs, and experiencing solitude. Our staff and members plan to return to the subject lands in the future to engage in these activities, and to observe and monitor native ecosystems and rare and imperiled species. We are collectively committed to ensuring that federal agencies properly manage rare and imperiled species and native ecosystems. Members and professional staff of CNE are conducting research and advocacy to protect the populations and habitat of rare and imperiled species discussed herein. Our members and staff value the important role that areas of high conservation value should play in safeguarding rare and imperiled species and natural communities, and other unique resources on public land.

The Wilderness Society's mission is to protect wilderness and inspire Americans to care for our wild places. We represent more than a half million members and supporters nationwide who have a great interest in the protection and enhancement of the natural values and recreational opportunities provided by our public lands, including those in the White River Field Office.

Colorado Environmental Coalition ("CEC") works on a variety of issues that span the state and include protecting our public lands, ensuring the quality of the water we drink,

preserving wildlife habitat and opportunities for recreation, advocating for good transportation and growth practices, promoting common sense policies in the state legislature, and providing technology resources to other non-profits.

Wilderness Workshop's mission is to protect and conserve the natural resources of the White River National Forest, the Colorado River Valley Field Office, and adjacent public lands. WW is a non-profit organization that engages in research, education, legal advocacy, and grassroots organizing to protect the ecological integrity of local landscapes and public lands. We focus on the monitoring and conservation of air and water quality, wildlife species and habitat, natural communities and lands of wilderness quality.

b). Commendation

We would like to take this opportunity to commend the Bureau of Land Management ("BLM") on its outstanding implementation of the leasing reforms created by Instruction Memorandum 2010-117 ("IM 2010-117"). By allowing public comment early in the leasing process, the need for future protests has already dramatically diminished. Conducting high quality environmental analysis early in the leasing process generates less controversy, provides more certainty for the industry, and facilitates wise management decisions about which lands are suitable for oil and gas exploration and development and which should be deferred from leasing, in order to complete additional analysis.

CRVFO's diligent scoping process and Environmental Assessment ("EA") was conducted with such high quality and basis in the best available science that we have no specific comments or requests on how CRVFO can better protect wildlife and areas of high conservation value in leasing the proposed parcel. CRVFO is to be commended on its decision to defer leasing parcels 6068 and 6069 in order to protect special status plants during the CRVFO and Grand Junction Field Office ("GJFO") Resource Management Plan ("RMP") revision processes, and parcel 6068 for the additional reason of creating the Shale Ridges and Canyons Master Leasing Plan ("MLP"). Such a decision is an excellent example of BLM upholding the purposes of IM 2010-117, which include to "create more certainty and predictability, protect multiple-use values when the BLM makes leasing decisions, and provide for consideration of natural and cultural resources as well as meaningful public involvement" and to finalize MLPs "prior to new oil and gas leasing."[1]

Per GJFO's Preliminary EA for the November 2011 lease sale, we understand that BLM intends "to conduct public site visits to address resource concerns included in the [Shale Ridges and Canyons MLP] recommendation."[2] As CNE and TWS are the groups that developed and submitted the Shale Ridges and Canyons MLP nomination, we support this approach. We intend to fully participate in the site visits, and would welcome the opportunity to meet with BLM to discuss how and when it intends to conduct those visits.

---

[1] BLM. *Instruction Memorandum No. 2010-117.* Washington, D.C. May 17, 2010. p 1.
[2] BLM GJFO. *November 2011 Competitive Oil and Gas Lease Sale Preliminary Environmental Assessment.* (DOI-BLM-CO-130-2011-0043-EA). p 67.

We further commend BLM for its high caliber analysis of the direct, indirect, and cumulative impacts of leasing parcel 6052. We support BLM's decision to add stipulation GS-TL-01 to the parcel to protect big game winter range. Such decisions and analysis demonstrate an admirable commitment to the BLM's mission to protect multiple-use values and sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

II). Desired Action and Procedural Issues:

a). Overview and Screen

CNE conducts its own screen utilizing the GIS data provided for the proposed parcels and data layers for environmentally sensitive species and habitat. Our screen indicated that no further analysis of the impacts of leasing parcel 6052 would be necessary in the final Environmental Assessment ("EA"). The following list shows the parcel number and the environmental aspect requiring further analysis.

Parcel	Environmental Affects Requiring Analysis
6052	None

b). BLM May Not Sign the FONSI Prior to Finalizing the Lease Sale EA.

BLM attached a signed "finding of no signification impact" ("FONSI") and "decision record" to the draft EA. This is erroneous, because IM 2010-117 specifically directs BLM to provide the public with the opportunity to comment on the draft EA "and *unsigned* FONSI before forwarding the leasing recommendation to the State Director."[3] Furthermore, the decision record—BLM's final decision on whether to issue a lease—is to be signed by the authorized officer at the state office, and can only be issued after issuance of the final EA/FONSI and resolution of any outstanding protests. Thus, by attaching a signed FONSI and decision record to the draft EA, BLM has technically violated IM 2010-117. Moreover, BLM has given the impression that it has predetermined the outcome of the NEPA process, even if this is not the case. In the future, BLM must abide by the IM, and include an unsigned FONSI with the draft EA.

c). Air Quality Analysis

CNE, CEC and TWS further commends CRVFO for seriously considering the potential air quality impacts of the proposed leasing, including short term emissions of fugitive dust, VOC emissions, greenhouse gas emissions, and the regulatory mechanisms currently in place to monitor and control such emissions. However, the EA defers site-specific analysis of air quality impacts of potential development of the leasing parcel until the Application for Permit to Drill

[3] BLM, *supra* note 1, at 12. Emphasis added.

("APD") stage. We would ask BLM to begin analyzing site-specific air quality issues at the leasing stage. For example, in its November 2011 Leasing Proposal EA, the Royal Gorge Field Office conducts analysis that predicts the potential emission of criteria pollutants and greenhouse gases, for scenarios in which development on the parcels proposed for leasing is "high" and "low."[4] This would help BLM and the public to determine if leasing in this area is appropriate.

III). Proposed Alternative:

CNE does not propose any additional alternatives beyond those already assessed in the Preliminary EA.

IV). Conclusion

For the reasons outlined above, we commend BLM on its decision to defer leasing parcels 6068 and 6069 to protect special status plants and to avoid foreclosing future management options pending the revision of the GJFO and CRVFO RMPs and in order to "address[] resource concerns" associated with the Shale Ridges and Canyons MLP. We further commend BLM for its high quality analysis of the impacts of leasing parcel 6052 and for attaching appropriate stipulations to protect big game winter range to the parcel. Lastly, as mentioned above, we would appreciate meeting with you at your earliest possible convenience to learn more about your plans for conducting site visits to the Shale Ridges and Canyons MLP area.

We thank you for the opportunity to comment, and commend the BLM once again on its excellent implementation of the IM 2010-117 leasing reforms.

Sincerely,

Megan Mueller
Staff Biologist
Center for Native Ecosystems
303-546-0214 ext. 6
megan@nativeecosystems.org

Luke Schafer, West Slope Campaign Coordinator
Colorado Environmental Coalition
529 Yampa Avenue
Craig, CO 81625
970-824-5241
luke@ourcolorado.org

[4] BLM, Royal Gorge Field Office. *November 2011 Competitive Oil and Gas Lease Sale Preliminary Environmental Assessment.* (DOI-BLM-CO-200-2011-0057-EA). p 16.

Matt Sandler
Staff Attorney
Center for Native Ecosystems
303-546-0214 ext. 1
matt@nativeecosystems.org

Ti Hays
Associate Attorney, BLM Action Center
The Wilderness Society
303-650-5818 ext. 131
ti_hays@tws.org

Peter Hart
Conservation Analyst/Staff Attorney
Wilderness Workshop
PO Box 1442
Carbondale, CO 81623
O: (970)963-3977
F: (970)963-8447
C: (303)475-4915
peter@wildernessworkshop.org
www.wildernessworkshop.org

BLM Responses to Public Comment Letter

Below are BLM's response to the public comment letter submitted jointly by the Center for Native Ecosystems, Colorado Environmental Coalition, The Wilderness Society, and Wilderness Workshop, dated July 6, 2011.

Comment: *We would like to take this opportunity to commend the Bureau of Land Management ("BLM") on its outstanding implementation of the leasing reforms created by Instruction Memorandum 2010-117 ("IM 2010-117"). By allowing public comment early in the leasing process, the need for future protests has already dramatically diminished. Conducting high quality environmental analysis early in the leasing process generates less controversy, provides more certainty for the industry, and facilitates wise management decisions about which lands are suitable for oil and gas exploration and development and which should be deferred from leasing, in order to complete additional analysis.*

Response: We appreciate the positive feedback.

Comment: *Per GJFO's Preliminary EA for the November 2011 lease sale, we understand that BLM intends "to conduct public site visits to address resource concerns included in the [Shale Ridges and Canyons MLP] recommendation." As CNE and TWS are the groups that developed and submitted the Shale Ridges and Canyons MLP nomination, we support this approach. We intend to fully participate in the site visits, and would welcome the opportunity to meet with BLM to discuss how and when it intends to conduct those visits.*

Response: We assume that you have provided a similar comment to the Grand Junction Field Office (GJFO) and, if not, encourage you to do so. Your participation regarding CRVFO's portion of any such future efforts is welcomed.

Comment: *We further commend BLM for its high caliber analysis of the direct, indirect, and cumulative impacts of leasing parcel 6052. We support BLM's decision to add stipulation GS-TL-01 to the parcel to protect big game winter range. Such decisions and analysis demonstrate an admirable commitment to the BLM's mission to protect multiple-use values and sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.*

Response: Again, we appreciate the positive feedback.

Comment: *Our screen indicated that no further analysis of impacts of leasing parcel 6052 would be necessary in the final Environmental Assessment (EA).*

Response: Thank you for your input.

Comment: *BLM attached a signed "finding of no signification impact" ("FONSI") and "decision record" to the draft EA. This is erroneous, because IM 2010-117 specifically directs BLM to provide the public with the opportunity to comment on the draft EA "and unsigned FONSI before forwarding the leasing recommendation to the State Director." Furthermore, the decision record—BLM's final decision on whether to issue a lease—is to be signed by the authorized officer at the state office, and can only be issued after issuance of the final EA/FONSI and resolution of any outstanding protests.*

Response: This error has been corrected.

Comment: *[T]he EA defers site-specific analysis of air quality impacts of potential development of the leasing parcel until the Application for Permit to Drill ("APD") stage. We would ask BLM to begin analyzing site-specific air quality issues at the leasing stage. For example, in its November 2011 Leasing Proposal EA, the Royal Gorge Field Office conducts analysis that predicts the potential emission of criteria pollutants and greenhouse gases, for scenarios in which development on the parcels proposed for leasing is "high" and "low." This would help BLM and the public to determine if leasing in this area is appropriate.*

Response: The CRVFO is in the process of completing a regional air quality modeling effort conducted in conjunction with the current revision to its Resource Management Plan (RMP). Future pre-leasing EAs within the CRVFO area will include an analysis within the context of that model and lease stipulations selected and implemented through the Record of Decision (ROD) resulting from that process. In the meantime, please note that the small size of Parcel 6052 would allow only a single oil and gas well under the current 10-acre downhole spacing order.

With regard to the suggestion that we add language in the analysis of future pre-leasing EAs to rate the potential for development of the proposed parcels as high or low, we note that the Reasonable Foreseeable Development (RFD) scenario prepared in conjunction with our current RMP revision identified portions of the CRVFO area with high, moderate, or low potential for oil and gas development to help guide the development of alternatives. However, once a parcel is proposed for leasing, we assume that it would be developed if the sale were completed, meaning that we would view the potential for development of any proposed lease parcel as high. If the issue of high or low potential is intended to refer to the future intensity of development, our experience has been that rapid advances in technology and fluctuations in oil and gas prices make that impossible to predict accurately. Based on these considerations, we do not currently anticipate incorporating the suggested rating into pre-leasing EAs.

Comment: *CNE does not propose any additional alternatives beyond those already assessed in the Preliminary EA.*

Response: Thank you for your input.

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FONSI

DOI-BLM-CO-N040-2011-0075-EA

The Environmental Assessment (EA) analyzing the environmental effects associated with leasing and thereby making available for oil and gas development three parcels of Federal mineral estate referred to as Parcels 6052, 6068, and 6069, located in whole or in part within the CRVFO boundaries, and proposed for inclusion in the November 2011 competitive sale of Federal oil and gas leases in Colorado, has been reviewed. The EA supports a Finding of No Significant Impact on the human environment. Therefore, an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) is not necessary to further analyze the environmental effects of the proposed lease sale.

DECISION RECORD

DECISION: It is my decision to approve the lease sale of Parcel 6052 with the lease stipulations described in and attached to this EA. It is also my decision to defer leasing of Parcels 6068 and 6069 to preserve future management options potentially resulting from the current RMP revision for the CRVFO.

RATIONALE: The bases for this decision are as follows:

1. The lease stipulations to be attached to the lease are adequate and appropriate for protection of the associated resources and uses in conjunction with subsequent development of Federal fluid minerals.

2. Approval by the Colorado River Valley Field Office (CRVFO) of any oil and gas development plan subsequent to leasing of Parcel 6052 would require detailed resource surveys, an evaluation of updated information available from the CRVFO's geographic information system (GIS) database and other available sources.

3. Approval by the CRVFO of any surface-disturbing activities or any Applications for Permits to Drill (APDs) for any Federal oil and gas well in Parcel 6052 would require the application and enforcement of any standard and site-specific surface-use and downhole conditions of approval (COAs) determined by the CRVFO to be relevant and appropriate.

4. Adverse environmental impacts could be adequately avoided, minimized, or offset through the application of the lease stipulations, COAs, best management practices identified during the project-specific EA prepared in response to an oil and gas development plan.

MITIGATION MEASURES: Adequate protection of Federal resources and mitigation of adverse impacts would result from the lease stipulations described in and attached to the EA, and through standard and site-specific surface-use and downhole conditions of approval to be attached as COAs during the analysis of any development plan or APD submitted to the CRVFO.

NAME OF PREPARER: Allen B. Crockett, Ph.D., J.D., Supervisory NRS, CRVFO

SIGNATURE OF AUTHORIZED OFFICIAL:

_____

Helen Hankins, State Director

DATE SIGNED: _____