

**U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
220 E Market St  
Meeker, CO 81641**

## **ENVIRONMENTAL ASSESSMENT**

**NUMBER:** DOI-BLM-CO-N05-2014-0124-EA

**CASEFILE/PROJECT NUMBER:** COC-65320A  
COC76717 (Well pad ROW)

**PROJECT NAME:** Koch WRD Federal 25-31 Well

**LEGAL DESCRIPTION:** T. 2N R. 97W SESE 26

**APPLICANT:** Koch Exploration Company

**PURPOSE & NEED FOR THE ACTION:**

The purpose of the action is to allow the development of federal leases on Bureau of Land Management (BLM) surface through the drilling of the proposed well and associated actions in a manner that avoids, minimizes, reduces, or mitigates potential impacts to other resource values. The need for the action is established under the authority of Federal Land Policy and Management Act of 1976 (FLPMA) to respond to the request to develop the federal leases.

**Decision to be Made:** The BLM will decide whether or not to approve the construction, drilling, operation, and maintenance of the WRD Federal 25-31 well and if so, under what conditions.

**SCOPING, PUBLIC INVOLVEMENT, AND ISSUES:**

**Scoping:** Scoping was the primary mechanism used by the BLM to initially identify issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on September 2, 2014. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on September 2, 2014.

**Issues:** How may the proposed action affect air quality? Would drilling allow the migration of gas, water, and oil between formations? How may the proposed action increase soil compaction, removal of native vegetation, exposure of subsoil, mixing of soil horizons, loss of topsoil productivity, and an increase in the susceptibility of soils to wind and water erosion? Would drilling affect groundwater quantity or quality? Surface water quality? Could surface disturbance increase the risk of the spread of noxious or invasive, non-native weeds? Would the proposed

action’s ground disturbance contribute to water quality or quantity impacts to Colorado pikeminnow, other Colorado River fish? How might the surface disturbance affect midget faded rattlesnake dens, migratory bird nests, or big game winter range? Would maintenance activities result in direct mortality to any of these species? Would ground-disturbing activities destroy cultural or paleontological resources or contribute to greater risk of looting or removal? How great would the developments contrast visually with the surrounding terrain? Would the proposed action release hazardous materials into the environment? Affect fire suppression activities beyond the development area? What effects would the operation have on surrounding livestock grazing use or forage? Would the proposed action affect surrounding right-of-way holders? How may the proposed action affect recreational uses within the surrounding area? Access and transportation uses, in general?

**DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:**

**Background/Introduction:** The Application for Permit to Drill (APD) for the WRD Federal 25-31 well was received on December 12, 2013. The onsite field meeting occurred on July 23, 2013, after receiving a Notice of Staking (NOS) on July 8, 2013. After the onsite and seven day letter, the pad location was moved away from the slope of the ridge in order to protect midget faded rattle snake habitat. The snakes were observed by the BLM biologists on a separate trip to the location.

**Proposed Action:**

Koch Exploration Company (Koch) is proposing to drill an exploratory well at T2N R97W NWSW Section 26; the bottom hole for this location would be in the adjacent Section 25 (see Figure 1, page 40). This well pad would be for a single well with the dimensions of 350 feet by 250 feet, for a 3.8-acre well pad disturbance total.

Access to this pad would be off of Rio Blanco County (RBC) Road 72, and maintenance and upgrades would occur on the existing access road to WRD 25-41. The new constructed access road would be approximately 1,420 feet, with an estimated 1.95 acres of disturbance. Thus, the disturbance area would extend beyond the pad dimensions (Table 1). The running surface would have a width of 14 feet and a construction width of 50 feet. The maximum grade on the existing 25-41 road is 13.3 percent, and 12.2 percent on the proposed new access road. At this time there is no proposed surfacing of the road beyond native materials. The proposal is to complete enough of the new construction and upgrades for the drilling rig to have access to the location. The additional upgrades would be completed after well completion, if the well is a producer. This includes portions of the stormwater features. Upgrades and construction include the installation of eight culverts, widened curves and turn outs.

In addition to the pad and access road construction, there is a proposed pipeline that would tie into an existing line nearby, at a distance of 119 feet. This proposed pipeline would have a construction width of 50 feet, for an estimated 0.136 acres. The pipeline would be steel pipe with a four-inch diameter that would be installed at a minimum depth of four feet.

**Table 1:** Table showing the approximate disturbance in acres during the development phases of the well location.

	Proposed Initial	Interim	Final
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	<b>Disturbance</b>	<b>Reclamation</b>	<b>Reclamation</b>
Well Pad Location	3.8 ac	1.0 ac	0.0 ac
Access Road Re-route	1.95 ac	0.5 ac	0.0 ac
Pipeline	0.14 ac	0.0 ac	0.0 ac
<b>Total</b>	<b>5.9 ac</b>	<b>1.5 ac</b>	<b>0.0 ac</b>

Design Features:

The entire Surface Use Plan of Operations (SUPO) is incorporated into the Proposed Action.

**No Action Alternative:** The Application for Permit to Drill would be denied. No well would be drilled, the pad would not be built, pipeline not installed and access road not constructed. However, future development activities may result and will be analyzed under separate NEPA analysis.

**ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD:**

Koch, internally, and prior to submitting an NOS to the BLM, considered the location being placed on the top of the ridge and on the nearby existing location for the WRD Federal 25-41 well. Neither of those locations were feasible to Koch, and the NOS for the original pad location was submitted. The original location submitted in the APD was tucked up against the slope of the ridge; however, after the onsite and additional surveys were completed for midget faded rattle snakes, the location was moved further away from the slope of the ridge to the location in the Proposed Action to avoid impacting the snakes. After consideration by the BLM interdisciplinary team, further resource conflicts were identified, making that location not acceptable. This original proposal is not being carried forward for analysis, as it results in greater disturbances than the current final proposal.

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

Name of Plan: White River Record of Decision and Approved Resource Management Plan (White River ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: “Make Federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values.”

**AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES**

**Standards for Public Land Health:** In January 1997, the Colorado BLM approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, special status species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard

exists for these five categories, a finding must be made for each of them in an environmental analysis (EA). These findings are located in specific elements listed below.

**Cumulative Effects Analysis Assumptions:** Cumulative effects are defined in the Council on Environmental Quality (CEQ) regulations (40 CFR 1508.7) as “...the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” Table 2 lists the past, present, and reasonably foreseeable future actions within the area that might be affected by the Proposed Action; for this project the area considered was the Natural Resources Conservation Service (NRCS) 5<sup>th</sup> Level Watershed. However, the geographic scope used for analysis may vary for each cumulative effects issue and is described in the Affected Environment section for each resource.

**Table 2.** Past, Present, and Reasonably Foreseeable Actions

Action Description	STATUS		
	Past	Present	Future
Livestock Grazing	X	X	X
Wild Horse Gathers	X	X	X
Recreation	X	X	X
Invasive Weed Inventory and Treatments	X	X	X
Range Improvement Projects : Water Developments Fences & Cattleguards	X	X	X
Wildfire and Emergency Stabilization and Rehabilitation	X	X	X
Oil and Gas Development: Well Pads Access Roads Pipelines Gas Plants Facilities	X	X	X
Power Lines	X	X	X
Oil Shale	X	X	X
Seismic	X	X	X
Vegetation Treatments	X	X	X

**Affected Resources:**

The CEQ Regulations state that NEPA documents “must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail” (40 CFR 1500.1(b)). While many issues may arise during scoping, not all of the issues raised warrant analysis in an environmental assessment (EA). Issues will be analyzed if: 1) an analysis of the issue is necessary to make a reasoned choice between alternatives, or 2) if the issue is associated with a significant direct, indirect, or cumulative impact, or where analysis is necessary to determine the significance of the impacts. Table 3 lists the resources considered and the determination as to whether they require additional analysis.

**Table 3.** Resources and Determination of Need for Further Analysis

Determination <sup>1</sup>	Resource	Rationale for Determination
<b>Physical Resources</b>		
PI	Air Quality	See discussion below
PI	Geology and Minerals	The Proposed Action would add to the development of the oil and gas resources within an active oil and gas field. See discussion below.
PI	Soil Resources*	See discussion below
PI	Surface and Ground Water Quality*	See discussion below
<b>Biological Resources</b>		
NP	Wetlands and Riparian Zones*	The nearest riparian community is 1.7 low-gradient, ephemeral channel miles downstream of the Proposed Action, and is a willow-dominated floodplain with scattered stands of narrow-leaf cottonwood associated with the White River. Considering required compliance with State and Federal drilling and reclamation regulations (including storm water containment), and substantial separation of project work from the White River floodplain, there is no foreseeable likelihood that the Proposed Action would contribute sediments or contaminants capable of adversely influencing riparian resources or processes.
PI	Vegetation*	See discussion below.
PI	Invasive, Non-native Species	See discussion below.
PI	Special Status Animal Species*	See discussion below.
NP	Special Status Plant Species*	There are no populations of special status plant species located in the vicinity of the Proposed Action. There is mapped suitable habitat for four BLM sensitive plant species within the project area, but plant surveys from 2014 showed no plants growing on the suitable habitat.
PI	Migratory Birds	See discussion below.
NP	Aquatic Wildlife*	The White River is the nearest aquatic habitat, which is separated from the Proposed Action by 1.9 ephemeral channel miles. The White River and its 100-year floodplain below Rio Blanco Lake (2.3 channel miles upstream of this project) are designated critical habitat for the endangered Colorado pikeminnow and supports a number of additional BLM-sensitive fish (i.e., roundtail chub and mountain, flannelmouth, and bluehead sucker). As mentioned in the Riparian/Wetland section above, the likelihood of the Proposed Action contributing to sediment or contaminant levels capable of adversely influencing these species or their habitats would be remote.
PI	Terrestrial Wildlife*	See discussion below.
NP	Wild Horses	There are no wild horses or designated management areas associated with the project area.
<b>Heritage Resources and the Human Environment</b>		
PI	Cultural Resources	Cultural resources are present in the vicinity but the closest ones are not NRHP eligible, see discussion below.

<b>Determination<sup>1</sup></b>	<b>Resource</b>	<b>Rationale for Determination</b>
PI	Paleontological Resources	The well pad is located in the Wasatch Formation (PFYC) 5, see discussion below.
NP	Native American Religious Concerns	No Native American Religious Concerns are known in the area, and none have been noted by Northern Ute Tribal authorities. Should recommended inventories or future consultations with Tribal authorities reveal the existence of such sensitive properties, appropriate mitigation and/or protection measures may be undertaken.
PI	Visual Resources	See discussion below.
PI	Hazardous or Solid Wastes	See discussion below.
PI	Fire Management	See discussion below.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to the most recent Census Bureau statistics (2000), there are no minority or low income populations within the WRFO.
NP	Lands with Wilderness Characteristics	The closest unit identified as lands with wilderness characteristics is three miles to the north of the Proposed Action.
<b>Resource Uses</b>		
NI	Forest Management	The pad is located near a mapped mature juniper stand, but no trees will be removed for pad construction or access road upgrades.
PI	Rangeland Management	See discussion below.
PI	Floodplains, Hydrology, and Water Rights	No floodplains are located in the Proposed Action area. Hydrology-See Surface and Ground Water Quality discussions below. No water rights issues in the Proposed Action area.
PI	Realty Authorizations	The well pad is off-unit; therefore a right-of-way is required for the off-unit portion of the well pad. See discussion below.
PI	Recreation	See discussion below.
PI	Access and Transportation	See discussion below.
NP	Prime and Unique Farmlands	There are no Prime and Unique Farmlands within the project area.
<b>Special Designations</b>		
NP	Areas of Critical Environmental Concern	The closest Area of Critical Environmental Concern is Blacks Gulch located 3.5 miles to the east of the Proposed Action.
NP	Wilderness	The closest Wilderness Study Area is located 4.5 miles to the east of the Proposed Action.
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers in the WRFO.
NP	Scenic Byways	There are no Scenic Byways within the project area.

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

\* Public Land Health Standard

## AIR QUALITY

*Affected Environment:* The Proposed Action is located more than 10-miles from any non-attainment or special designation airshed. Non-attainment areas are designated by U.S. Environmental Protection Agency (EPA) as having air pollution levels that persistently exceed the National Ambient Air Quality Standards (NAAQS). The closest non-attainment areas are along the Front Range in Colorado and the closest special designation area is the Dinosaur National Monument, located north of the project area (designated Class II airshed with Prevention of Significant Deterioration (PSD) with thresholds for sulfur oxides.

General conformity regulations require that federal activities do not cause or contribute to a new violation of NAAQS; that actions do not cause additional, or worsen existing, violations of the NAAQS; and that attainment of these standards is not delayed by federal actions in non-attainment areas. Projects impacting special designation areas and/or non-attainment areas may require special consideration from the Colorado Department of Public Health and Environment (CDPHE) and the EPA.

The Proposed Action is in Rio Blanco County within the Western Counties Monitoring Region of Colorado (APCD 2010). Local air quality parameters including particulates and ozone are measured at monitoring sites located at Meeker, Rangely, and Dinosaur and near the Flat Tops Wilderness Area. Ozone data have been collected at Federal reference air quality sites located outside Meeker and Rangely and been supported by the BLM since 2010. .

Ozone advisories and alerts were issued in the winter of 2011 and 2013 for Rio Blanco County, based on data collected from the Rangely monitoring site south of this location. Ozone can cause breathing difficulties and worsen respiratory infections especially in the elderly, the young and those with pre-existing ailments, such as asthma. Ozone also affects vegetation and ecosystems, leading to reductions in agricultural crop and commercial forest yields, reduced growth and survivability of tree seedlings, and increased plant susceptibility to disease, pests, and other environmental stresses (e.g., harsh weather). Generation of ozone under stagnate air masses, with continuous snow cover or in regions with soils with a low albedo can increase dramatically. Ozone produced under stagnant air masses can be transported many miles.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The Proposed Action would result in short-term impacts on air quality near the drilling pad, including the emissions of criteria pollutants, hazardous air pollutants (HAPs), and greenhouse gases (GHGs). Air quality would be impacted by engine exhaust from vehicles and any stationary fuel combustion sources during drilling and completion activities. Increases in the following criteria pollutants would occur due to combustion of fossil fuels: carbon monoxide, nitrogen dioxide, sulfur dioxide, and ozone (a secondary pollutant formed photochemically from volatile organic compounds (VOCs) and nitrogen oxides (NO<sub>x</sub>)). Emissions of particulate matter would be generated from construction, drilling and during the production phases.

Particulate matter or dust is made up of a number of components, including acidic aerosols (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). Dust production is most likely during construction and drilling activities, especially when conditions are dry and/or windy. Fine particles (less than 2.5

µm) are efficient in scattering and absorbing light and are the major contributor to visibility problems. The effects of particulates include visibility degradation, climate change, vegetation damage and human health impacts. The chemical composition of PM<sub>2.5</sub> consists of five major components sulfate, nitrate, organic carbon, elemental carbon (also called black carbon), and crustal (rock and soil) material.

The EPA's NAAQS uses NO<sub>2</sub> as an indicator of NO<sub>x</sub> which are generated by the combustion of fossil fuels and therefore would be emitted during drilling, completion and hydraulic fracturing operations, from transportation vehicles during rig moves, maintenance and during production, and from compressors used to manage natural gas pressures for drilling and production operations for the wells. NO<sub>2</sub> forms quickly from cars, trucks and buses, power plants, and off-road equipment emissions. The main effect of NO<sub>2</sub> is that it inflames the lining of the lungs and increases the likelihood of respiratory problems such as wheezing, coughing, colds, flu and bronchitis. People with asthma or heart disease are most at risk.

Additional low, short-term impacts to air quality may occur due to venting or flaring of gas from the well and VOCs from pits, storage and treatment of cuttings, equipment leaks, and from tanks from wells from which disposal fluids will come from. VOCs including hazardous air pollutants (HAPs) commonly associated with oil and gas production (benzene, toluene, ethylbenzene, xylene, and n-hexane) would be released at the nearby water treatment plant during processing and transportation of the disposal fluids. The amount of these releases are difficult to estimate, but are expected to be within CDPHE air permit limits estimated in tons per year. Non-criteria pollutants (NAAQS have not been set for non-criteria pollutants), such as nitric oxide, air toxics (e.g., benzene), and total suspended particulates may experience slight, temporary increases as a result of the Proposed Action.

In summary, soil disturbance resulting from construction of pads and roads and drilling operations are expected to cause increase airborne fine particulate matter in the project area and may contribute to reductions in regional visibility. In addition, increases in the following criteria pollutants: carbon monoxide, VOCs, ozone, nitrogen dioxide, and sulfur dioxide would also occur due to combustion of fossil fuels during drilling and operational activities. Only PM<sub>2.5</sub> and NO<sub>2</sub> are expected to be close to NAAQS and only near the drilling pads. Non-criteria pollutants such as carbon dioxide, methane and nitrous oxides, air toxics (e.g., benzene), total suspended particulates (TSP), and increased impacts to visibility and atmospheric deposition may also increase as a result of the Proposed Action.

Even with these increased pollutants the Proposed Action is unlikely to result in an exceedance of NAAQS or CAAQS, is not likely to be located in future non-attainment area, and it is likely to comply with applicable PSD increments and other impact thresholds.

Cumulative Effects: Air quality in Region 11 (Western Slope of Colorado) is affected by both mobile and stationary emitters of air pollutant (CAPCD 2013). Fugitive dust can come from natural sources that are not preventable, such as volcanic eruptions, large regional dust storms, and wildfires. PM<sub>10</sub> and PM<sub>2.5</sub> are created from windblown dust and soil from fields, agricultural crops, agricultural livestock, paved road re-entrained dust, unpaved roads, construction activities, and mining and quarrying, construction sites, automobile and diesel engine exhaust, waste

burning, soot from wood fires, and sulfates and nitrates from combustion sources such as industrial boilers (CAPCD 2013). Emissions of particulate matter would be generated from construction, drilling, and during the production phase. The following criteria pollutants would be emitted during the combustion of fossil fuels during construction, drilling and operation: CO<sub>2</sub>, NO<sub>2</sub>, SO<sub>2</sub>, and ozone (a secondary pollutant formed photochemically from VOCs and NO<sub>x</sub>).

Downward trends in annual NO<sub>2</sub>, CO, and SO<sub>2</sub> have been measured at air quality monitoring sites in the region and are likely the result of national emissions control programs. For example, between 1990 and 2012, national emissions of NO<sub>x</sub> and VOC emissions have declined 56 percent and 35 percent, respectively (CAPCD 2013). Decreases in SO<sub>x</sub> emissions from diesel fuel and power plants coincides with in a decrease in SO<sub>2</sub> measured at IMPROVE sites and through other air quality monitoring programs. Even though concentrations of these pollutants are low and decreasing, EPA continues to track these pollutants because of their contribution to secondary air pollutants and issues (e.g., ozone, PM<sub>2.5</sub>, and visibility).

In general, air quality within the region is good due to few emission sources, good dispersion characteristics and national trends showing a decrease in some air pollutants. However, some emissions have caused localized or regional level increases in pollution monitoring values such as ozone and PM<sub>2.5</sub> within the past ten years. This has led to an increase in air quality monitoring in the region including the BLM-supported Federal reference air quality monitoring sites in Rangely and Meeker.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: No increase in impacts to air quality would occur from the No Action Alternative.

Cumulative Effects: Impacts for the Western Slope of Colorado would be similar to those described for the action alternative.

*Mitigation:* The following should be added as conditions of approval (COAs):

1. The operator will limit unnecessary emissions from pollution sources and prevent air quality deterioration from necessary pollution sources in accordance with all applicable state, federal and local air quality law and regulation.
2. The operator will treat all access roads with water during construction and drilling activities so that there is not a visible dust trail behind vehicles. The use of chemicals or treated produced water as a dust suppressant on BLM lands will require prior written approval from BLM.

## **GEOLOGY AND MINERALS**

*Affected Environment:* Surficial geology of the well pad location is quaternary alluvium and the Wasatch Formation (Pipiringos). During drilling, potential water, gas, oil, and, coal resources would be encountered from surface to the targeted zone. The 25-31 well pad is located in an area of extensive oil and gas development. This area is identified in the White River ROD/RMP as having high potential for oil and gas and is outside the areas identified as suitable for coal, oil

shale, and sodium leasing. Oil and gas exploration and development within a one mile radius of the proposed well pad consists of 36 wells; 10 plugged and abandoned, and 24 producing, 1 drilling, and 1 drilled and abandoned (COGCC). The bottom hole location and drainage area is within the Ant Hill Participating Area (PA) COC65320A. The well pad surface is off of the PA on oil and gas lease COC0127537 and the bottom hole is located within the PA on oil and gas lease COC55438.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The cementing program of the Proposed Action isolates the formations and would prevent the migration of gas, water, and oil between formations. Development of the well would deplete the hydrocarbon resources within the drainage acreage associated with reservoir characteristics in the targeted formation. There would be no conflicts with other mineral resources, since the well is located outside areas identified in the White River ROD/RMP as available for oil shale, sodium, or coal development.

Cumulative Effects: As stated above, the Colorado Oil and Gas Conservation Commission (COGCC) database identifies 36 oil and gas wells within a 1 mile radius of well pad 25-31. An additional 14 or more wells could be required for full field development (40-acre bottom hole spacing) of the oil and gas resources in the one-mile radius could occur. This would depend on the reservoir drainage characteristics within targeted formations. Full field development could deplete the oil and gas resources of the targeted formations.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: The oil and gas resources in the targeted zones would not be developed at this time and would remain available for future recovery.

Cumulative Effects: There would be no contribution to the recovery of oil gas resources.

*Mitigation:* None.

**SOIL RESOURCES**

*Affected Environment:* The classifications of soils impacted by the Proposed Action are shown in Table 4.

**Table 4.** Soil Classifications within 30 Meters of the Pad and the Centerline of Road (NRCS, 2008):

Soil Classification	Surface Texture	Erosion Hazard	Rutting Hazard	Potentially Impacted (Acres)
Moyerson stony clay loam, 15 to 65 percent slopes	stony clay loam	Severe	Moderate	8
Yamac loam, 2 to 15 percent slopes	loam	Severe	Severe	6

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Direct impacts from the construction of the well pads, access roads, and pipelines would include soil compaction, removal of vegetation, exposure of subsoil, mixing of soil horizons, loss of topsoil productivity, and an increase in the susceptibility of soils to wind and water erosion. Compaction due to construction activities would reduce aeration, permeability, and water-holding capacities of soils in some locations. Removal of vegetation exposes soils to erosion from rainfall, wind and surface runoff. Exposure of subsoil and mixing of soil horizons can change the physical characteristics of subsoil and may reduce the productivity of these soils before reclamation is complete. Loss of topsoil productivity can occur during soil storage, due to nutrient loss through percolation of precipitation through the soils, physical loss and mixing of less productive soil layers during moving, and a loss of structure. An increase in surface runoff and sedimentation could be expected from impacted soils and these soils are likely to be less resilient to erosion from surface runoff after disturbance. Final reclamation on the pipeline would likely be achieved within three to five years after installation.

Unstable road surfaces and road surfaces not adequate for all-weather conditions, especially on roads with steep grades, can rut and rapidly lose drainage features, causing erosion and instability. If the well goes into production, road surfaces would be upgraded to include proper drainage, water erosion control features, and graveled road surface. With proper BMPs for stormwater, engineered access roads, construction, reclamation and mitigation, impacts to soils outside the 30 meter buffer around surface disturbance would not be expected. Of the 14 acres analyzed (surface disturbance plus a 30 meter buffer), no surface disturbance would occur on soils with landslide potential, but impacts may occur to soils having a severe erosion hazard rating, and moderate to severe rutting hazard rating.

These direct impacts from the Proposed Action could result in increased indirect impacts to soils off the construction sites, such as increased runoff and erosion. Implementation of BMPs for stormwater and reclamation would reduce impacts from this project and should limit impacts to construction sites. However, there is still the potential for intense storm events or BMP failures resulting in erosion, off site. This type of erosion would be addressed by mitigation to require a plan to address problems if they develop.

Indirect impacts from this project could result in contamination of surface and subsurface soils due to unintentional leaks or spills from equipment and, if these spills occurred, they would affect the productivity of soils. Impacted soils would be removed or remediated on site and therefore loss of soil productivity would be temporary, possibly for three to five years from initial ground disturbance.

Cumulative Effects: The well pads, access roads, and pipelines are located in the Crooked Wash – White River HUC 5th level drainage. If the exploratory well is successful, it may change to a production well, resulting in additional surface disturbances from well pads, pipelines, roads, and support facilities. In addition to other oil and gas activity, dispersed recreation (hunting) will make use the area east of Rio Blanco County (RBC) Road 72, but use is unlikely due to the land ownership on the access road. Livestock grazing occurs on public and private lands in the area and these activities may reduce canopy cover and lead to localized erosion in some reclamation areas.

In general, soil disturbance in the Proposed Action and other activities are likely to reduce soil productivity in the localized areas of disturbance, but are unlikely to impact overall soil productivity for the long term.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: No impacts to soils would occur.

Cumulative Effects: Impacts would be similar to those described for the action alternative.

*Mitigation:*

1. In order to protect public land health standards for soils, any erosion processes, such as rilling, gulying, piping, and/or mass wasting observed on or adjacent to the surface disturbance will be rectified by contacting the AO and submitting a plan with BMPs to address soil erosion and/or stabilization issues.
2. Use of the proposed access road is limited to those times where soils are not saturated. If at any time during construction, drilling, and reclamation of the proposed development that the soils become saturated, resulting in rutting greater than three inches, work will cease until soils dry, so as to not result in increased rutting and erosion.

*Finding on the Public Land Health Standard #1 for Upland Soils:*

The Proposed Action would impact upland soils in areas of disturbance, resulting in short-term reductions in surface infiltration and subsurface permeability, due to alterations of the soil structure. In the short-term, the loss of soil structure would increase the likelihood of surface sealing and subsequent overland flow, during precipitation events. If unaddressed, overland flow promotes rilling, piping, and/or mass wasting. Any indications of rilling, piping, or mass wasting on, or adjacent to, the surface disturbance would be addressed with identified BMPs. Long-term, post-disturbance reclamation efforts should restore the soil structure returning the infiltration and permeability characteristics to pre-disturbance levels.

**SURFACE & GROUND WATER QUALITY**

*Affected Environment:* The well pads, access roads, and pipelines are located in the Crooked Wash – White River HUC 5<sup>th</sup> level drainage. The ephemeral drainage drains into the White River. Table 5 describes water segments that may be impacted by this project.

Table 5. Water Quality Classification Table (CWQCC 2013)

Segment	Segment Name	Use Protected	Protected Beneficial Uses			
			Aquatic Life	Recreation	Agriculture	Water Supply
7	Mainstream of White River from Miller Creek to Piceance Creek	No	Cold 1	Potential Primary Contact Use	Yes	Yes

9b	All tributaries to White River from Flag Creek to Piceance Creek	No	Cold 2	Not Primary Contact Use	Yes	Yes
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Segment 7, the mainstream of the White River from Miller Creek to Piceance Creek, is protected for cold water aquatic life (Cold 1 – summer water temperatures < 20°C). Segment 9b, tributaries to White River from Flag Creek to Piceance Creek, is protected for cold water aquatic life (Cold 2 – waters not capable of sustaining cold water biota). Segment 7 is protected for existing recreation, water supply, and agriculture. Segment 9b is protected for water supply and agriculture.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Surface Waters: The soil analysis indicated the potential for severe rutting on the access road. Therefore, good road maintenance for drainage features and surfacing the road and the mitigation in the soils section of this document would reduce impacts. Typical road maintenance includes restoring the travel surface shape and road surfacing to maintaining an effective all-weather surface during drilling. This should reduce the risk of increased sedimentation to surface waters.

Disturbances associated with the access road and, to a lesser extent, the well pad, would expose unprotected soil surfaces to erosion processes. The removal of vegetation and compaction/alteration of soil structure would result in increased overland flow and sediment suspension during precipitation events. Stormwater BMPS are designed to reduce the energy generated by overland flow, filter suspended sediments from runoff, and subsequently reduce the amount of soil deposition in drainage features and natural ephemeral drainages. Any sediment deposited and stored downstream of established stormwater BMPs would be available for transport into White River during heavy convective storms.

Groundwaters: As described in the Affected Environment, groundwater, and the baseflow it provides to perennial surface waters, is critical to maintaining the function of surface water systems. The proposed casing and cementing program for each of the wells has been designed to protect and/or isolate all usable water zones. Potential freshwater zones are protected by surface casing and cementing behind the casing. The grade of cement used in the drilling plan has been approved and would be verified during drilling inspections. Cement protects the well casings from leaking, due to deterioration, over the life of the well and allows casings to withstand pressure increases during completion, hydrologic fracturing, and injection activities, without bursting.

Loss of drilling fluids could occur during the drilling process, due to changes in porosity or other properties of the rock being drilled. If this occurs, drilling fluids could be introduced into the surrounding formations, which could be freshwater aquifers. If drilling fluids are lost, aquifers could be contaminated by drilling additives. Using bentonite, freshwater and other additives that cannot contaminate groundwater would mitigate the loss of drilling fluids, since the introduction of these substances to freshwater aquifers would not impact the quality of these groundwater features.

Impacts to groundwater resources could occur due to failure of well integrity, failed cement, surface spills, and/or the loss of drilling, completion and hydraulic fracturing fluids into groundwater. Types of chemical additives used in drilling activities may include acids, hydrocarbons, thickening agents, lubricants, and other additives that are operator- and location-specific. Concentrations of these additives also vary considerably and are not always known, since different mixtures can be used for different purposes in the same well bore. These wells are regulated by the State of Colorado and the well design would be tested with a mechanical integrity test. According to COGCC requirements, all chemicals (greater than 500 pounds) used during drilling, completion, and work-over operations, including hydraulic fracturing treatments, would be disclosed in a chemical disclosure form by well site.

Known groundwater bearing zones in the project area would be protected by the drilling plan and well design, as described in the proposed APD. Groundwater resources (including the contact springs, perched aquifers, and groundwater zones described in the Affected Environment) are all in elevations above the surface casing. With proper drilling and completion practices, contamination of groundwater resources would be unlikely.

Cumulative Effects: Natural gas production wells result in surface disturbance for well pads, pipelines, roads, and support facilities. In addition to other oil and gas activity, dispersed recreation (hunting) will make use of Rio Blanco county roads, BLM roads and 2-track, and private roads, and will add to the wear of the road and increasing siltation throughout the analysis area. Use of the roads during poor conditions could result in failure of drainage features and sedimentation of drainages, necessitating additional road maintenance activities. Livestock grazing occurs on public and private lands in the area and these activities may reduce canopy cover and lead to localized erosion in some reclamation areas, resulting in additional sedimentation.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Neither ground nor surface water quality would be impacted by the No Action Alternative.

Cumulative Effects: Impacts would be similar to those described for the action alternative, but would not include the impacts from the Proposed Action.

*Mitigation:*

1. To protect surface waters below the project area, the operator will keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. The operator will also provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.
2. When drilling to set the conductor and surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment.

3. If excessive livestock grazing in reclamation areas is identified as a cause to failed reclamation, the operator will be required to install fencing to preclude grazing from these areas to allow for reclamation activities to become established.

*Finding on the Public Land Health Standard #5 for Water Quality:* It is unlikely that construction of this well pad and access road or drilling would result in an exceedance of state water quality standards.

## VEGETATION

*Affected Environment:* The proposed WRD Federal 25-31 well pad and new access road are located primarily within a Rolling Loam ecological site. The vegetation community within this site is dominated by cool season bunchgrass species including: bluebunch wheatgrass, Indian ricegrass, prairie junegrass and blue grama, as well as the rhizomatus western wheatgrass. Shrub species include: Gardner saltbush, shadscale, yucca, Wyoming big sagebrush, antelope bitterbrush and greasewood. The invasive annual cheatgrass is found throughout the landscape where the proposed well pad and access road are located.

### *Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Vegetation resources would be directly affected by the construction of this pad and its associated infrastructure on approximately 5.9 acres. Direct effects would involve removal of native vegetation. After successful interim reclamation, the majority of the disturbed area would be reclaimed and re-vegetated. Approximately 25 percent (1.5 acres) would remain un-vegetated for the life of the pad, which is predicted to be approximately 35 years. As identified in the SUPO, interim reclamation would begin within six months after well completion. Soil could be lost and/or damaged during the life of the project due to erosion, mixing of soil horizons, compaction, degradation during storage, and/or contamination. Limiting factors affecting re-vegetation success for affected soils could be exacerbated by operational activities and inadvertently by livestock grazing on unfenced reclaimed areas. Surrounding vegetation has potential to be affected by dust deposited from passing vehicles, reducing its health, vigor, and palatability. Noxious/invasive plant species could become an increased component of plant communities, due to ground disturbance and seed dispersing activity in the area.

Cumulative Effects: The proposed construction of the WRD Federal 25-31 pad and the access road, when added to other projects and developments, in and near the project area, as well as within the White River Dome and Northern Piceance Basin as a whole, would result in an increase in short-term removal of existing vegetation on public land. Long-term changes in plant community composition and structure could also occur on those project sites and on a broader scale from activities such as livestock grazing. Of the total potential vegetation removal near the project area and the surrounding landscape, the proposed project would not result in a noteworthy increase in vegetation disturbance or long-term changes in plant community.

### *Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Denial of the proposed construction activity would result in no additional direct or indirect impacts to vegetation in association with the proposed pad.

Cumulative Effects: Denial of the proposed project would have little impact on the cumulative effects of oil and gas development on the vegetative communities in the Wray Gulch area or in the White River Dome/North Piceance Basin as a whole.

*Mitigation:*

1. For interim reclamation, the BLM recommends Seed Mix #2, outlined in Table 6. The SUPO identifies September or October as timing for seeding. If an alternate date of seeding is requested; the operator must contact the designated Natural Resource Specialist prior to seeding for approval. Final reclamation will be completed using the reclamation practices and seed mixes recommended at that time.

**Table 6.** Seed Mix #2 for Interim Reclamation of the WRD FEDERAL 25-31 pad.

Cultivar	Species	Scientific Name	Application Rate (lbs PLS/acre)
Arriba	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3.5
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. inermis</i>	4
Lodorm	Green Needlegrass	<i>Nassella viridula</i>	2.5
Timp	Northern Sweetvetch	<i>Hedysarum boreale</i>	3
	Sulphur Flower Buckwheat	<i>Eriogonum umbellatum</i>	1.5
Alternates:			
	Needle and Thread	<i>Hesperostipa comata spp. comata</i>	3
	Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.5

2. In the SUPO where it addresses ripping compacted soils, ensure that ripping is completed before spreading topsoil. If topsoil will be stored for more than one year and other resource values can be accommodated, topsoil should be stored in piles with a depth of two feet or less to help retain soil viability.
3. All seed tags will be submitted via Sundry Notice (SN) to the designated Natural Resource Specialist within 14 calendar days from the time the seeding activities have ended. The SN will include the purpose of the seeding activity (i.e., seeding well pad, cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, and, if applicable, the name of the contractor that performed the work, his/her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.
4. Each year by January 1<sup>st</sup>, Koch will submit a Reclamation Status Report to the WRFO that includes the well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad and/or pipeline has been re-vegetated and/or re-contoured, date seeded, photos of the reclaimed site, acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person responsible for developing the report. The report will include maps showing each point (i.e., well pad), polygon, and/or polyline (i.e., pipeline)

feature that was included in the report. The data must be submitted in UTM Zone 13N, NAD 83, in units of meters. In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report when seeding occurred during that year. Internal and external review of the WRFO Reclamation Status Report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report.

5. The operator will meet the following reclamation success criteria, these standards apply to both interim and final reclamation:
  - a) Self-sustaining desirable vegetative groundcover consistent with the site DPC (as defined by the range site, WRFO AIM protocol site data (BLM TN 440), ecological site or an associated approved reference site) is adequately established as described below on disturbed surfaces to stabilize soils through the life of the project.
  - b) Vegetation with eighty percent similarity of desired foliar cover, bare ground, and shrub and/or forb density in relation to the identified DPC. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state.
  - c) The resulting plant community must have composition of at least five desirable plant species, and no one species may exceed 70 percent relative cover to ensure that site species diversity is achieved. Desirable species may include native species from the surrounding site, species listed in the range/ecological site description, the BLM's AIM data, reference site, or species from the BLM approved seed mix. If non-prescribed or unauthorized plant species (e.g., yellow sweetclover, *Melilotus officinalis*) appear in the reclamation site, BLM may require their removal.
  - d) Bare ground does not exceed the BLM's AIM data, range site description and/or if not described, bare ground will not exceed that of a representative undisturbed DPC meeting the Colorado Public Land Health Standards.

*Finding on the Public Land Health Standard #3 for Plant and Animal Communities:* Upland plant communities in the project area currently meet the Standard. With implementation of mitigation measures and successful re-vegetation, the Proposed Action would likely increase vegetative cover and productivity to at least equal or possibly better than the surrounding landscape, due to the application of reclamation measures and monitoring. Overall, with successful reclamation of disturbances, there would be no negative effect on the status of Land Health Standard 3 in the project area or at a landscape scale.

## **INVASIVE, NON-NATIVE SPECIES**

*Affected Environment:* Cheatgrass, a non-native, invasive annual grass species is common in the area of the Proposed Action. Musk thistle, Canada thistle and knapweed also occur in the general area of the Proposed Action. All of these noxious weeds readily invade and establish on disturbed sites such as pads, pipelines, and road shoulders. These species provide minimal resource value and are an impediment to meeting Public Land Health Standards. Successful reclamation is critical in preventing the area associated with the Proposed Action from being invaded by noxious weed species present in the area.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The disturbance associated with the Proposed Action could create new noxious weed problems by importing weed seed on vehicles and equipment or by having suitable conditions present (non-vegetated disturbed areas) for introduction of noxious weeds by other vectors. In addition to noxious weeds, invasive non-native species such as cheat grass could also establish on these areas. Establishment of noxious or invasive weeds would create problems through seed production in proportion to the number of plants and the duration they are reproducing. Increased seed production and presence of noxious or invasive plants could aggressively compete with or exclude desired vegetation during reclamation. If not controlled or eradicated, new infestations of weeds could result in the spread of these plants into the adjacent native plant communities. The applicant has identified measures in the SUPO that will be taken to reduce the potential for introduction or spread of noxious and invasive species including pre disturbance surveys, weed treatment methods, and cleaning of equipment prior to use on public land.

Cumulative Effects: Further development actions within the White River Dome/North Piceance Basin associated with this proposal would create additional opportunity for noxious/invasive weed establishment. Existing roads and development related disturbances throughout the general area are common sources of weeds, so elimination of these species from the general area is unlikely. The extent of infestation and persistence of weeds would be dependent on monitoring and treatment as part of future projects and activities in the general area. Noxious and invasive species management actions identified in the SUPO, including long-term weed control, would reduce the likelihood of long-term negative impacts associated with this proposal.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Noxious and invasive plants would continue to be present within the vicinity of the proposed development and, depending on the aggressiveness of weed treatment activities, may continue to spread.

Cumulative Effects: Cumulative effects would be similar to those from the Proposed Action.

*Mitigation:*

In addition to the weed detection and control measures identified by the applicant in the surface use plan, the following mitigation should be applied:

1. Submit results of the pre-disturbance weed survey to the designated Natural Resource Specialist prior to initiating surface disturbing activities.
2. Identify reclamation success criteria as it pertains to cheatgrass.

**SPECIAL STATUS ANIMAL SPECIES**

*Affected Environment:* The White River and its 100-year floodplain are designated critical habitat for the Colorado pikeminnow from Rio Blanco Lake (2.3 miles upstream of the unnamed

drainage that drains the project locale) downstream to the Green River, though occupied habitat is confined to the White River below Taylor Draw dam, about 44 river miles downstream of Yellow Creek. The White River is also inhabited by a number of BLM-sensitive fish, including roundtail chub and the flannelmouth, bluehead, and mountain sucker, as well as the BLM-sensitive northern leopard frog.

The project area is located on the western edge of a small, isolated tract of overall greater sage-grouse range. The WRFO is aware of a single anecdote by a Colorado Parks & Wildlife (CPW) employee relating of several hundred wintering birds on the eastern edge of this tract during a severe winter in the 1980s. Recorded evidence of breeding/summer use has been sporadic, infrequent, and involves less than a dozen birds. The WRFO is not aware of any evidence of occupation within a mile of the project area and at its nearest point, the project is 4.1 miles from the tract's only known lek (i.e., beyond the normal range of hen dispersal from the lek to nest site).

The midget faded rattlesnake (MFR) is a BLM-sensitive species, as well as a species of special concern for the State of Colorado. This species occurs solely within the Green River Formation in southeast Wyoming, eastern Utah, and western Colorado and is typically associated with bedded sandstone outcrops and fallen midslope slabs on south to southeast facing exposures below 7,000 foot elevation. This species is listed as sensitive due to its limited distribution. In addition, low reproductive potential, low abundance, narrow habitat preferences, patchy distribution, and vulnerability to human-caused mortality and road-kill near the dens make these snakes particularly susceptible to localized extirpation from surface disturbing activities. These snakes emerge from hibernacula (dens) in mid-April. Gravid females and juveniles tend to remain in rock outcrop habitat in close proximity to their dens (20-200 meters) throughout the summer and early fall months, while males and non-reproductive females disperse an average of 1 km from the den. All snakes return to their den sites in mid to late October. During wildlife surveys in July 2013, WRFO staff located a MFR den site along the margin of the original pad proposal. Based on subsequent discussions with the applicant, the pad location was voluntarily moved to its present location to better separate project disturbance from the den site.

There are no water features known to be capable of supporting a breeding population of Great Basin spadefoot within the general project area. The BLM-sensitive Brewer's sparrow is addressed in the Migratory Bird section.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The proposed project area is separated from the nearest critical habitat for Colorado pikeminnow by about 1.9 miles of low-gradient ephemeral channel. Given the limited extent of surface disturbance, required compliance with State and Federal drilling and reclamation regulations, and substantial separation of project work from designated and occupied aquatic habitat, there is no foreseeable likelihood that the Proposed Action would contribute sediments or contaminants capable of adversely influencing downstream aquatic habitat conditions or floodplain processes.

The Proposed Action would indirectly influence critical habitat designated for the endangered Colorado River fish in terms of water depletion alone. In May 2008, the BLM prepared a

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

The Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (initiated in January 1988) serves as the reasonable and prudent alternative to avoid jeopardy and provide recovery to the endangered fishes by depletions from the Colorado River Basin. The PBO addresses water depletions associated with fluid minerals development on BLM lands, including water used for well drilling, hydrostatic testing of pipelines, and dust abatement on roads. The PBO includes reasonable and prudent alternatives developed by the FWS, which allow BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. As a reasonable and prudent alternative in the PBO, FWS authorized the BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in the amount equal to the average annual acre-feet depleted by fluid minerals activities on BLM lands. Water use attributable to this project, estimated at about 2.5 acre-feet for the single well, would be entered into the WRFO fluid minerals water depletion log, which is submitted to the Colorado State Office at the end of the Fiscal Year.

Based on prior surveys and the subsequent discovery of two MFR den sites, the applicant voluntarily agreed to relocate the well pad to increase lateral separation from the dens and reduce the risk of mortality during construction and vehicle access. As proposed, the Proposed Action is now situated 325 meters from the primary den site and 175 meters from the secondary site in variable density sagebrush stands with intermixed grassland. The location was moved away from rocky cover along the ridge's toe-slopes where the movements of gravid females and young would be more likely confined. Since these segments of the population tend to remain within 200 meters of den locations, the modified position of the pad, pipeline, and access would be expected to minimize any direct mortality attributable to short-term well development and through the long-term well production and maintenance phase.

The location is within appropriate habitat and the normal range of activity for adult, non-reproductive MFR (average 1,000 meters from den). Vegetation clearing and pad/access/pipeline construction operations conducted while the snakes are active and away from the den site (June through mid-October) may result in inadvertent mortality of these snakes. Further, because these snakes display remarkably rigid habitat use patterns, habitat modification within suitable habitat may be expected to result in reduced fitness of individual snakes.

Cumulative Effects: Incremental flow depletions from the Upper Colorado River system contribute to cumulative reductions in flow volume that affect seasonal fluctuations in flow, water quality, and channel/floodplain structure as important determinants of endangered fish

habitat. However, the consequences of depletion were considered and conservation measures applied in the context of basin-wide water use in previous section 7 consultation with the FWS.

Although mortality of individual MFR may occur, it is expected that those risks associated with the Proposed Action, as conditioned, would be substantially minimized and reduced to the point that this population would remain viable in the long term. By providing the means for this population's persistence through time, the cumulative influences on any associated metapopulation would be minor.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: There would be no immediate action authorized that would influence special status species, though it is likely that an alternative action would be proposed.

Cumulative Effects: There would be no action authorized that would contribute immediately to water depletions or pose a risk to midget faded rattlesnakes, as individuals or subpopulations.

*Mitigation:*

1. To prevent entrapment and mortality of dispersing snakes, pipeline trenching that remains open overnight during the summer and fall months (June 1 to October 15) should be minimized to the extent possible and inspected for entrapped snakes by a qualified biologist prior to backfilling.
2. In the event well development activities takes place from June 1 through October 15, acreage affected by vegetation clearing and pad/access/pipeline construction must be surveyed and cleared by a qualified biologist to reduce incidents of inadvertent destruction of snakes that have dispersed from the den.
3. To deter subsequent vehicle use along the pipeline corridor that extends NNE to the former Chesapeake 8-26 location and thereby help minimize snake mortality attributable to vehicles, steep embankments should be reestablished on both banks of the channel crossings located about 990 feet and 1,450 feet south of the former Chesapeake # 8-26 well location (approved as Condition of Approval in DOI-BLM-CO-110-2013-0050-EA). It shall be understood that no interpad access is authorized along the pipeline corridor between these well pads.

*Finding on the Public Land Health Standard #4 for Special Status Species:* Water depletion effects attributable to fluid mineral development would be detrimental to Colorado pikeminnow from the population and habitat perspectives, and by nature and definition, are considered cumulative. These influences were thoroughly analyzed in the programmatic consultation cited above and resulted in the determination that BLM water depletions from the Colorado River Basin, as conditioned by the implementation of the reasonable and prudent alternative, are not likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, or razorback sucker, and that BLM water depletions are not likely to destroy or adversely modify designated critical habitat.

## **MIGRATORY BIRDS**

*Affected Environment:* The proposed location, associated pipeline and access are located in a basin composed primarily of variable density Wyoming big sagebrush and grassland. Migratory birds typically associated with this habitat include lark and vesper sparrow, horned lark, western meadowlark, and the BLM-sensitive species Brewer's sparrow. These birds nest principally from mid-May through mid-July (15 May to 15 July) with an estimated overall nest density of 0.5 nests per acre. Brewer's sparrows are widely distributed in all sagebrush habitats at appropriate densities throughout the Piceance Basin and northwest Colorado.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Vegetation clearing and earthwork associated with well, access, and pipeline development are potential sources of nest destruction and nestling mortality (a violation of the Migratory Bird Treaty Act) if conducted during the nesting season (i.e., 15 May through 15 July). Vegetation clearing attributable to the Proposed Action would total about 5.3 acres, including about 4 acres of sagebrush. The availability of shrubland nest substrate would be reduced by that amount for several decades, but such loss would be considered relatively minor relative to that locally available. Shrublands that would be affected by the Proposed Action would not be expected to support more than one or two Brewer's sparrow nests during the nesting season.

Additionally, more intensive forms of development activity, including vehicle use associated with access to a location, tend to be avoided by birds and have been found to reduce migratory bird nest density within 100 meters of a road or pad by about 50 percent. Based on site-specific terrain and vegetation character, indirect habitat loss attributable to avoidance would be expected to involve about six additional acres of nest habitat. This land base would be expected to be capable of supporting no more than a half dozen nesting attempts during the breeding season (no more than three Brewer's sparrows). Nesting bird density and distribution are likely to approach pre-disturbance patterns once substantial reductions in vehicle traffic occur after well development/reclamation and through the productive life of the location.

Scheduling development of the location outside the core nesting season would minimize impacts to nesting birds and would be a measure consistent with implementation of the BLM policy (MOU WO-230-2010-04 with FWS) to promote the conservation of migratory birds and Executive Order 13186 on Protecting Migratory Birds.

Cumulative Effects: Although adverse effects on nest habitat attributable to the Proposed Action would be minor in light of site-specific circumstances, the Proposed Action would contribute incrementally to long-term habitat modification and disturbance-induced disuse of nesting habitat associated with fluid mineral development in the Piceance Basin. Based on projections in the Draft Oil and Gas Development RMP Amendment /DEIS (Chapter 4, Section 4.3.2.4.4 Migratory Birds Alternative C), "At any given time, well development activity (prior to successful interim or final reclamation) would be expected to reduce the effective utility of adjacent nesting habitat equivalent to an additional 5-7 percent of those habitats' base." Migratory bird effects attributable to the Proposed Action would be integral with effective habitat losses on the order of five or seven percent in the Piceance Basin located to the south.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: There would be no action authorized that would influence migratory bird nest activity or habitat.

Cumulative Effects: None.

*Mitigation:*

1. To minimize disruption of migratory bird nesting functions, construction of the pad and its access would not be permitted between 15 May and 15 July.
2. Utilizing remote monitoring and controls technology on these and surrounding areas would further reduce the indirect impacts over the life of the well pad by reducing vehicle trips along the access road.
3. Use of the existing pipeline as an interconnect between this road and the neighboring wells will be prohibited to limit the indirect impacts associated with the development.

## **TERRESTRIAL WILDLIFE**

*Affected Environment:* The project location is broadly encompassed by big game (mule deer) severe winter range and winter concentration area. Severe winter ranges possess attributes that moderate metabolic and physiological demands on deer under the most severe climatic conditions (e.g., deep, heavy snowpacks, prolonged low temperatures) and offer forage opportunities that accelerate recovery of deer from the nutritional deficits of winter and, by definition, support 90 percent of the animals in any given herd unit during the worst two winters out of 10. These ranges are used by big game primarily from October through April.

The location is situated in a 400-acre lower elevation sagebrush-saltbush basin, within 0.4 mile and line-of-sight of the Rio Blanco County land fill and lying between 2 producing pads, 145 and 290 meters to either side.

Potential woodland raptor nest substrate is limited in extent and suitability in areas subject to development-related disturbance. Historical records and WRFO wildlife staff visits to the site indicated that supplemental surveys were not necessary.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Direct and long-term forage loss attributable to new road construction, pipeline, and pad would amount to about 5.3 acres. The availability of woody winter forage (sagebrush) would be reduced by about four acres for several decades or more. Herbaceous forage would redevelop on reclaimed portions of the pad and partially to fully offset this loss in the short term. In the context of forage availability in the general project area, reductions to forage resources are considered minor.

The tendency for big game animals to avoid human disturbance has been demonstrated widely since the 1970's and has been more precisely defined with recent GPS technology. Avoidance of

human activity, regardless of form, can have important ramifications on big game energetics (e.g., avoidance movements, heightened state of alert) and nutrition (e.g., reduced time foraging and access to available forage, displacement from preferred foraging sites) that, in turn, have consequences on fitness and performance (e.g., survival, reproduction) at the individual and population level. While big game are contending with the nutritional challenges (declining quality and access to forage) and elevated energy requirements of winter (maintaining homeothermy, reducing energy expenditures to extend fat stores), human disturbance and displacement divert from time and energy that would otherwise be expended in more efficient procurement of forage and managing energy expenditures (e.g., reducing heat loss, reducing travel across steep slopes or heavy snowpack).

The access networks and vehicle traffic that supports well development and production are thought to represent the aspect of oil and gas activity that most broadly influences big game and their habitat. Big game avoidance response tends to increase as the duration, frequency, and intensity of road use increases and its effect on landscape-level habitat suitability becomes more pronounced as the density and distribution of the road network across affected habitats expands. The proposed project would add little to the existing route network (about 0.25 mile), but well access would carry substantially more frequent vehicle use during pad and well development. Considering terrain and vegetation characteristics of the project site, avoidance response would be expected to be most pronounced on about 60 acres of land surrounding the operation. Once activity subsided to production level intensity, residual avoidance effects would be expected to be relatively minor additions to the existing disturbance regime. (Note: this analysis is predicated on the assumption that the pipeline corridor between this pad and the nearest downstream well pad (former Chesapeake 8-26) does not develop into a vehicle thoroughfare—it is not being used for vehicle access between well pads at present).

The Proposed Action is situated such that it involves little, if any, potential to influence raptor nesting habitat.

Cumulative Effects: The Proposed Action represents a small but incremental contribution to direct and indirect forms of big game habitat loss that is associated primarily with anticipated fluid mineral development in the Piceance Basin (projected up to 14 percent of land base). The project would not affect habitat or features that are known to support raptor nesting activity and would not contribute measurably to cumulative declines in the availability or utility of suitable nest habitat.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: The No Action Alternative would have no immediate influence on local big game habitat, but in the event the Proposed Action was not authorized, it is possible and likely that alternative locations would be more disruptive to big game, involve raptor nest habitat, and require more substantial additions to the local road network.

Cumulative Effects: None in the short term, but alternative siting could elevate this project's short and long-term contribution to cumulative effects on big game and raptor habitat.

*Mitigation:*

1. As a means of reducing cumulative impacts on big game severe winter ranges, pad, pipeline, and access construction, drilling, and completion operations would not be allowed between the dates of January 1 and April 30.
2. In order to reduce the cumulative expense of severe winter ranges adversely influenced by fluid mineral development, it is important that measures be employed by the applicant to deter vehicle traffic along the pipeline corridor between the proposed pad and the nearest downstream well pad (former Chesapeake 8-26). See Special Status Animal Species section above.

*Finding on the Public Land Health Standard #3 for Plant and Animal Communities:* The general project area continues to support big game use during the winter season without serious impairment from ongoing mineral development. The Proposed Action, as proposed and conditioned, would not add appreciably to existing patterns and intensity of mineral development or human activity and would be consistent with continued meeting of the standard. The No Action Alternative would have no immediate influence on the standard, but in the event this proposal were not authorized, it is possible that alternative locations would be more disruptive to big game and raptors and involve more substantial additions to the local road network.

## **CULTURAL RESOURCES**

*Affected Environment:* The proposed pad location is covered by two inventories at the Class III (100 percent pedestrian) level (Thatcher 2014 compliance dated 10/20/2014, Yentsch *et. al.* 2014, compliance date 11/18/2014). The inventories identified one Isolated Find at the northern most boundary of the inventory parcel and what appear to be two very eroded potential hearths that lack any features, other than a few apparently burned rocks, or artifacts. None of these resources are intact or complete enough to qualify for nomination to the National Register of Historic Places (NRHP).

### *Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: There are no currently known Historic Properties, as defined by regulation, within the proposed project area. However, there is a small potential for previously unidentified Historic Properties, or identifiable Historic Properties using surface inventory techniques, within the project area, where soils might be deeper. If there are subsurface remains present that have not been previously identified, there could be an adverse effect on historic properties, depending on the extent and nature of the subsurface remains.

Indirect impacts to cultural resources within some 1,000 feet (305 meters) are possible due to the improved access into the area and the increase in human activity in the area. The loss could include, but not necessarily include loss of artifacts and artifact contexts. Should collectors excavate into the sites, the loss would be much more severe as a larger proportion of the context would be adversely impacted.

Cumulative Effects: There would be no new impacts to important, National Register-eligible cultural resources under the Proposed Action. However, should previously undetected resources

be impacted, it could represent a loss to the regional cultural database. It is currently not possible to quantify the potential loss of data from any subsurface remains, should they be present.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: There would be no new impacts to any known cultural resources under the No Action Alternative. However, indirect impacts to other cultural resources in the vicinity would likely continue as they have for many years. Indirect impacts involve livestock grazing and human activity in the area, not all of which are necessarily related to oil and gas development.

Cumulative Effects: Cumulative impacts cannot be quantified at this time, as baseline data is not available to determine the rate of loss of artifacts and contextual data from resources in the proposed project vicinity.

*Mitigation:*

1. Koch Exploration Company, LLC, is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
2. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. Koch Exploration Company LLC, will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. Koch Exploration Company LLC, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
3. Pursuant to 43 CFR 10.4(g), the Koch Exploration Company LLC, and/or any of its field agents must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), Koch Exploration Company LLC, and/or any of its field agents must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

## **PALEONTOLOGICAL RESOURCES**

*Affected Environment:* The proposed well pad location is in an area generally mapped as the Wasatch Formation (Tweto 1979), which the BLM has categorized as a Potential Fossil Yield Classification (PFYC) 5 formation, indicating that it is known to produce scientifically noteworthy fossil resources (c. f. Armstrong and Wolny 1989, Doi 1990)

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: If it becomes necessary, at any time during pad development, to excavate into the underlying geologic formation for leveling the pad or excavating any reserve/blooi/cuttings pits or burying any well tie pipelines, there would be the potential to adversely impact scientifically noteworthy fossil resources. Fossils in the Wasatch formation can be quite small and easily crushed and/or displaced from their contexts, destroying any environmental data that may have been associated with the fossils. There would also be a potential for some unlawful collection of larger fossils, due to increased and improved access into the area, which could result in increased human activity in the area, even after drilling and completion of the well has been accomplished.

Indirect impacts would be likely as a result of erosion on any surfaces that are exposed and not reclaimed and rehabilitated as soon as possible after drilling and completion. Erosion would displace smaller fossils, possibly causing their total destruction as a result of the tumbling that often results from water movement of the material.

Cumulative Effects: Cumulative effects to fossil resources would depend, to some extent, on the surface area and depth of any excavations into the underlying sedimentary rock formation that occur as a result of pad development. Any new losses would be additive to those that have already occurred in the area.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Under the No Action Alternative, there would be no new development-related impacts to fossil resources in the Wasatch Formation on the WRD unit. However, the normal slow geologic process of weathering, along with any impacts that might be occurring as a result of livestock grazing in the area would continue as before. The geologic weathering and erosion process is slow enough that it is not generally considered unacceptable. The impacts from livestock grazing are harder to evaluate, since there is no baseline data for comparison.

Cumulative Effects: Under the No Action Alternative, a slow, cumulative loss of fossils and related paleontological and paleo-environmental data would continue as it has for many centuries. Generally, the current slow rate of loss is not considered to be unacceptable.

*Mitigation:*

1. The Koch Exploration Company, LLC is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
2. If any paleontological resources are discovered as a result of operations under this authorization, the Koch Exploration Company, LLC or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make

every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.

3. Any excavations into the underlying native sedimentary rock must be monitored by a permitted paleontologist. The monitoring paleontologist must be present before the start of excavations that may impact bedrock.

## **VISUAL RESOURCES**

*Affected Environment:* Visual resources are the visible physical features of a landscape that convey scenic value. The BLM developed the Visual Resource Management system to identify and evaluate an area's scenic value. The visual resource inventory (VRI) process described in BLM Manual H-8410-1 establishes VRI classes, which are used to assess visual values for areas of the landscape. VRI classes II, III, and IV are determined by using a combination of three components: scenic quality, sensitivity level, and distance zones, with Class II having a higher level of value and Class IV having the least visual value. VRI Class I areas are assigned to special management areas, such as Wilderness Study Areas, which are the most valued landscapes. The VRI classes are the baseline from which environmental effects are measured. The Proposed Action is located in Visual Resource Inventory Class III area, which means this area is a moderate to lesser valued scenic landscape with some visible management activities in the area. The area of the landscape where the Proposed Action is located was placed into VRI Class III as a result of a composite of the three above mentioned components. The area received a moderate Scenic Quality scoring of B (A, B, and C type rating). The Sensitivity Level rating as moderate value to the public (high, moderate, and low type rating), and the project is proposed to be located in a Distance Zone of Foreground-Middleground (Foreground-Middleground, Background, and Seldom Seen type rating).

The BLM also maintains four Visual Resource Management (VRM) classes used to describe the level of acceptable change allowable at a given location. Scenic values in the BLM White River Resource Area have been classified according to the Visual Resource Management (VRM) system into four Visual Resource Management Classes (I-IV), and corresponding VRM objectives were established in the 1997 White River ROD/RMP. VRM Class I are the most restrictive, and VRM Class IV are the least restrictive for the amount of allowable change to occur on the landscape. The Proposed Action is located within a VRM Class III management area. The objective of the VRM III classification is to partially retain the existing character of the landscape. The level of change to the characteristic landscape in VRM III areas should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

The Proposed Action is located approximately one mile north of the White River and State Highway 64 in an area with low topographic relief. The form element of the area is comprised of undulating hills with short, but steeply eroded side hills and relatively flat ridge tops and valley bottoms. The color element, the most dominant element, for the area largely comes from the exposed buff, gray, and light brown exposed soils mixed with sparse light and dark green vegetation. The texture element is derived from the exposed rocky soils and bands of pinyon-juniper along the ridge tops.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The proposed construction of the access road, pipeline corridor, and well pad includes a total ground disturbance of 5.9 acres. These areas of ground disturbance would be reduced to 1.5 acres after interim reclamation has been completed. The Proposed Action would only be viewed by casual observers if they travel off-route and cross country from RBC Road 72 from the east or BLM Road 1755 from the west. The exposed soils created by this construction activity and associated linear road disturbance would create noticeable contrast to the landscape color and form characteristics from the construction start until interim reclamation. However, because the area consists of extensive exposed soils, this is likely to be a minor and temporary impact to those that view this project during the construction phase and before interim reclamation has been completed. The unnatural color contrast of all above ground structures could cause moderate long term impacts to casual observers. However, to reduce this impact, the applicant has committed that all permanent above ground structures (on-site for six months or longer), including tanks, associated production equipment, and any piping and valves, will be painted Covert Green, according to the BLM Standard Environmental Chart CC-001: June 2008. This color should best serve to blend these structures with the surrounding landscapes when viewed from a distance. Overall, the implementation of the Proposed Action would not change the Visual Resource Inventory Class III rating and would meet the Visual Resource Management class III objective of partially retaining the existing character of the landscape in this area.

Cumulative Effects: Combined with other historic and foreseeable oil and gas development activities in the area and any expansion of the county landfill to the north of the Proposed Action, this Proposed Action would begin to contribute to a somewhat impacted visual landscape.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: By not implementing the Proposed Action there would be no new impacts to visual resources or casual observers in this area and there would be no changes to visual resource inventory class ratings.

Cumulative Effects: None have been identified as a result of this alternative.

*Mitigation:* None.

## **HAZARDOUS OR SOLID WASTES**

*Affected Environment:* This location is approximately one-half mile from the Rio Blanco County Landfill. Other than the nearby landfill, no hazardous materials are known to have been used, stored, or disposed of at sites included in the project area.

*Environmental Consequences of the Proposed Action:* The proposed activities could use regulated materials and would generate some solid and sanitary wastes. The potential for harm to human health or the environment is presented by the risks associated with spills of fuel, oil and/or hazardous substances used during oil and gas operations. Other accidents and mechanical breakdowns of machinery would also be possible.

Direct and Indirect Effects: The proposed activities could pose direct and indirect impacts to soil, water, air, and biological resources that occur in close proximity to individual disturbance features. Impacts to these resources could also occur at farther distances from individual disturbance features, though it is assumed that these impacts would be reduced because of proximity to the point source. Accidents and mechanical breakdown could also have direct and indirect effects to resources, depending on the type of accidents or mechanical breakdown and when and where they occur temporally and spatially.

Cumulative Effects: Effects to soil, water, air, and biological resources as a result of cumulative release of hazardous materials into the environment are unknown. Because some hazardous substances persist in the environment, it is reasonable to assume that multiple activities that could occur throughout the project area that result in the release of individual hazardous material spills or discharge events, could cumulatively result in impacts to soil, water, air, and biological resources. Substances used in the hydraulic fracturing process could be harmful to human health or the environment. However, freshwater-bearing formations and other resources suitable for human use or consumption would be isolated from man-made materials used in oil and gas operations through the use and cementing of surface casing. For further information, see 43 CFR 3162.5-2(d).

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: No hazardous or other solid wastes would be generated under the No Action Alternative.

Cumulative Effects: Cumulative effects would be the same as those analyzed in the Proposed Action in terms of the type of disturbance. In terms of duration and extent, however, this alternative would most likely result in reduced cumulative impacts because of the existing development in the project area, rather than the new proposed well pad.

*Mitigation:*

1. Comply with all Federal, State and/or local laws, rules, regulations, statutes, standards and implementation plans. This includes but is not limited to, Onshore Orders, Surface Use Plans, State and Rio Blanco County permits.

2. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.
3. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment (e.g., cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls).
4. All substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to produced water, shall be stored in appropriate containers and in secondary containment systems at 110% of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries shall be lined with a minimum 24 mil impermeable liner.
5. Lessee/Operators and ROW holders will report all emissions, releases, spills, leakages, blowouts, fires that may pose a risk of harm to human health or the environment, regardless of the substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.
6. As a reasonable and prudent lessees/operator and/or ROW holder in the oil and gas industry, acting in good faith, all lessees/operators and ROW holders will provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any substance that may pose a risk of harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where the lessee/operator or ROW holder fails, refuses or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface and/or ground) and soils at the lessee/operator's expense. Such action will not relieve the lessee/operator of any liability or responsibility.

## **FIRE MANAGEMENT**

*Affected Environment:* The Proposed Action is located within the B4 Crooked Wash/Indian Valley fire management unit. This polygon consists of Wyoming big sagebrush and pinyon juniper woodlands. A modified suppression strategy may be utilized where the potential to burn less than 200 acres of sagebrush exists. This strategy may promote a vegetation mosaic representing a spectrum of successional stages in continuous sagebrush stands. Local preparedness levels and proximity to infrastructure may limit fire management strategies to direct control by full suppression. The fire regime/condition class for this fire management polygon is currently at a two, or is land considered to have been moderately altered from its historical fire return interval.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: During a wildfire event, the primary objective is firefighter and public safety. While in the construction phase of the proposed project, the appropriate management response could be full suppression. Stock piled vegetation, which is stored on site for future purposes, creates jack pots of fuel that are susceptible to fire brands. A direct effect of the proposed project would be the temporary suspension of the use of naturally ignited fire to meet multiple resource management objectives. Once the project is complete, the man-made vegetation breaks would alter the behavior of wildfires in the area, and help to create areas that may be suitable for use as fire breaks to help control wildfires.

Cumulative Effects: A continued increase in oil and gas infrastructure within the area may cause difficulties in full implementation of the Northwest Colorado Fire Program Area Fire Management Plan. Only when drilling operations decrease would fire and resource managers allow naturally ignited fire to create a vegetation mosaic representing various plant communities in different successional stages.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: No vegetation alteration or construction would occur under this alternative. Due to the known frequency of natural fire ignitions in the area of the proposed project, fire may again impact the site in 35 to 100 years. This natural return interval could return the site to a fire regime/condition class one.

Cumulative Effects: Without new oil and gas development and infrastructure, there would be less human related vegetation breaks, which when combined with natural mosaic vegetation patterns, have been used to contain fires in the past. This could lead to increased future fire suppression costs.

*Mitigation:*

1. When working on lands administered by the BLM WRFO, notify Craig Interagency Dispatch (970-826-5037) in the event of any fire.
  - a) The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information.
  - b) The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
  - c) The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not endangered and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used the applicant must notify incoming fire resources on extinguisher type and the location of use.
  - d) Natural ignitions caused by lightning will be managed by Federal fire personnel. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.
  - e) Piled vegetation retained for reclamation as part of forest management mitigations shall be located at least twenty five feet from other receptive fuels.

## **RANGELAND MANAGEMENT**

*Affected Environment:* The proposed WRD Federal 25-31 pad location is within the Wray Gulch pasture of the Little Toms Draw (#06603) allotment. The Wray Gulch pasture consists of 2,031 federal acres and 800 private acres. Authorized livestock use within the Little Toms Draw allotment totals 936 active AUMs. While the grazing schedule within the allotment is currently being revised, grazing use under the proposed revision within the Wray Gulch pasture would rotate between spring use occurring between 4/15-5/31 and fall use occurring between 10/15-11/30 on a three year rotation.

Rangeland Improvements: There are no range improvement projects which would be impacted by implementation of the Proposed Action.

There are no range trend monitoring sites nearby that would be affected by the implementation of the Proposed Action.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: If construction occurs during the period livestock are permitted in this area, they would likely avoid the area adjacent to the proposed development during the period of intense noise and activity levels. During this period, there is increased risk of injury to livestock. After construction is complete, livestock would likely be minimally affected or even unaffected by the presence of production facilities.

Construction of the WRD Federal 25-31 pad would remove up to 5.9 acres of vegetation. Until construction disturbance is successfully reclaimed and re-vegetated, there would be a loss of less than one AUM for the life of the pad in the Wray Gulch pasture. After successful interim and final reclamation, there would likely be a slight increase in forage production. The short-term forage loss within this pasture would be less than the annual fluctuation in forage production and would not be expected to result in any need for changes in livestock numbers or grazing period.

Cumulative Effects: Agriculture, road development, oil and gas development, and associated infrastructure development that have the potential to impact livestock grazing and rangeland management would continue to occur within the Wray Gulch pasture. The Proposed Action would have minimal effect on forage in the allotment listed above. After project construction has been completed and grass/forb communities have recovered from construction related disturbance, the Proposed Action would contribute to a small and temporary grass/forb dominated site, providing additional forage for livestock in the area.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: There would be no direct and/or indirect effects to rangeland management under the No Action Alternative.

Cumulative Effects: Activities associated with agriculture, road development, oil and gas development, and associated infrastructure development would continue to occur in the area, which has the potential to impact livestock grazing and rangeland management by removal of forage, impacts to range improvements, etc.

*Mitigation:* None

## REALTY AUTHORIZATIONS

*Affected Environment:* The bottom hole for the WRD 25-31 well is located in T2N, R97W, section 25; however most of the well pad for the WRD 25-31 well would be constructed in T2N, R97W, section 26. The portion of the proposed well pad and associated access road located in section 26 is off-unit; therefore, a right-of-way (ROW) would be required for the well pad and associated access road. Existing ROWs near the Proposed Action are described in Table 7.

**Table 7.** Existing ROWs in the Project Area

Case File	Holder	Authorized Use
COC20887	Public Service Company of Colorado	Natural gas pipeline
COC55578	Rio Blanco County	County Road 72
COC57822	White River Electric Association	Power line
COC70672	Koch Exploration Company	Natural gas pipeline
COC76059		Water pipeline

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The off-unit portion of the well pad (COC76717) would be 475 feet long, 315 feet wide, and contain approximately 3.43 acres. The off-unit portion of the associated access road would be 230 feet long, 35 feet wide, and contain approximately 0.18 acres. Damage to the facilities or rights of existing ROW holders could occur if construction activities are not properly planned and other ROW facilities are not properly identified prior to construction. If accurate “as built” mapping is not provided to BLM, conflicts may develop in the future with other ROW holders.

Cumulative Effects: As the number of ROW holders in the project area increases, so would competition for suitable locations for facilities. Increased ROW densities would also lead to a higher probability of conflict between ROW users.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Failure to authorize the proposed project would not result in any increased impacts to realty authorizations in the area.

Cumulative Effects: There would not be any cumulative effects from not authorizing the proposed project.

*Mitigation:*

1. The holder will effectively coordinate with existing ROW holders prior to construction activity.
2. The holder shall provide the BLM AO with data in a format compatible with the WRFO’s ESRI ArcGIS Geographic Information System (GIS) to accurately locate and identify the

ROW and all constructed infrastructure, (as-built maps) within 60 days of construction completion. Acceptable data formats are: (1) corrected global positioning system (GPS) files with sub-meter accuracy or better; (2) ESRI shapefiles or geodatabases; or at last resort, (3) AutoCAD .dwg or .dxf files. Option 2 is highly preferred. In ALL cases the data must be submitted in Universal Transverse Mercator (UTM) Zone 13N, NAD 83, in units of meters. Data may be submitted as: (1) an email attachment; or (2) on a standard compact disk (CD) in compressed (WinZip only) or uncompressed format. All data shall include metadata, for each submitted layer, that conforms to the Content Standards for Digital Geospatial Metadata from the Federal Geographic Data Committee standards. Questions should be directed to WRFO BLM GIS staff at (970) 878-3800.

3. Construction activity should take place entirely within the areas authorized in the ROW grant.
4. At least 90 days prior to termination of the ROW, the holder shall contact the AO to arrange a joint inspection of the ROW. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final recontouring, spreading of topsoil, and seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.
5. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
6. Boundary adjustments in Oil and Gas lease/unit COC65320A shall automatically amend this right-of-way to include that portion of the facility no longer contained within the above described lease/unit COC65320A. In the event of an automatic amendment to this right-of-way, the prior on-lease/unit conditions of approval of this facility will not be affected even though they would now apply to facilities outside of the lease/unit as a result of a boundary adjustment. Rental fees, if appropriate shall be recalculated based on the conditions of this grant and the regulations in effect at the time of an automatic amendment.

## **RECREATION**

*Affected Environment:* The Proposed Action would occur within the White River Extensive Recreation Management Area (ERMA). The BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use. The project site is located in the Recreation Opportunity Spectrum (ROS) classification area of Semi-Primitive Motorized. Areas within this classification are characterized by a largely natural appearance and are accessible by foot, horseback, bike or motor vehicle generally on native-surfaced roads or gravel. Interaction with other visitors is relatively low. There are minimum on-site controls and restrictions, and the area provides for a moderate probability of experiencing isolation, remoteness, and closeness to nature. The primary recreation activity in this area is a low amount upland big game hunting

from late August through December of each year with peak use from mid-October through mid-November. The Proposed Action is located within the Colorado Parks and Wildlife (CPW) Game Management Unit (GMU) 11 and overall is a somewhat popular big game hunting area where hunters have good opportunities to pursue both mule deer and elk. There are two Special Recreation Permits (SRPs) for commercially outfitting and guiding for big game hunting permitted on extensive public lands in this area. There are 15 Special Recreation Permits (SRPs) for commercially outfitting and guiding for mountain lion hunting which are permitted for all BLM lands within the WRFO.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: Due to the Proposed Action, there would be a direct disturbance of approximately 5.9 acres of public land currently available for dispersed recreation activities during the initial construction period, which will be reduced to 1.5 acres after interim reclamation has been completed. Some displacement of recreationists may occur during construction, particularly to those seeking a more primitive-oriented backcountry recreation experience. If construction and drilling activities coincide with some of the various big game hunting seasons (late August through December), there may be a disruption to those seeking a primitive hunting experience in these localized settings during these activities. Because this proposal is located in an area within extensive public lands, it is likely that those seeking big game hunting opportunities in this area would be able to find similar hunting and camping opportunities on nearby public lands. Operational activities during the production phase would be much less disruptive to dispersed camping in the area and big game hunting. Because this area does not provide a system of connected routes conducive to Off-Highway Vehicle recreational riding, it is unlikely that the construction of the access road would result in unauthorized use of this road or the creation of other unauthorized routes in this area. Overall, the Proposed Action would result in relatively small impact in size and time for recreational opportunities and experiences in this area.

Cumulative Effects: Combined with other foreseeable oil and gas development and mining development activities in the area, the Proposed Action could begin to contribute to a somewhat modified landscape with slightly reduced recreational opportunities and undesired recreational experiences, and impacts to some localized recreational settings.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Because the well pads, access road, and pipeline would not be constructed, there would be no new impacts to recreational opportunities and experiences as a result of this alternative.

Cumulative Effects: None identified as a result of this alternative.

*Mitigation:* None.

## **ACCESS AND TRANSPORTATION**

*Affected Environment:* Access to the Proposed Action from Rangely, CO includes traveling along State Highway 64 approximately 36.9 miles to the junction of this road and RBC Road 72

to the North; Turn left and proceed in a northerly, then northeasterly direction approximately 0.9 miles to the junction of this road and the existing access for the WRD Federal 25-41 to the west; Turn left and proceed in a westerly, southwesterly direction approximately 0.2 miles to the existing WRD Federal 25-41 location and the beginning of the proposed access road to the northwest; follow road flag in a northwesterly, then northerly direction approximately 734 feet to the proposed location. Total distance from Rangely, Colorado to the existing location is approximately 38.1 miles. All road work would be done according to BLM Manual 9113 standards. The roads closer to the Proposed Action are traveled primarily by oil and gas employees, local ranch operators, big game hunters, and other recreationalists. According to the White River ROD/RMP, motorized vehicle travel is restricted to the existing roads and trails from October 1 through April 30 of each year. The primary users of RBC Road 72 include county residents and employees accessing the county landfill, which is located approximately 0.5 miles north of the proposed access road.

*Environmental Consequences of the Proposed Action:*

Direct and Indirect Effects: The Proposed Action would be expected to result in a minor incremental increase in traffic and potentially an increase in travel times on RBC Road 72, especially during the construction and drilling periods. These impacts would be expected to be temporary in duration and the applicant has committed to maintaining and upgrading routes used in conjunction with the Proposed Action to current conditions or better throughout the life of the proposed project according to BLM Manual 9113. The applicant has also committed to ceasing all construction and drilling activity when soils are saturated to a depth of three inches, unless otherwise approved by the Authorized Officer and not mud blading the access road. These measures should prevent any degradation of the transportation system in this area. Because the access route is authorized for the applicants use only and not the general public, there is not increase or decrease in access to public lands as a result of this Proposed Action. In order to achieve completion of final reclamation, the applicant has committed to recontouring all disturbed areas to their approximate original land form, ripping compacted soils, and establishing vegetation in these areas. This would result in the Proposed Action having minor to negligible overall long term impacts to the BLM transportation system.

Cumulative Effects: Combined with the existing vehicle traffic on RBC Road 72, the Proposed Action would be likely to result in an increase in traffic volumes and potentially travel times during the construction and drilling phase of the Proposed Action. After this phase, the Proposed Action would be likely to contribute an insignificant amount of traffic on the road.

*Environmental Consequences of the No Action Alternative:*

Direct and Indirect Effects: Because the well pads, access roads, road upgrades, and pipelines would not be constructed, there would be no new impacts to the transportation system or public access as a result of this alternative.

Cumulative Effects: None identified as a result of this alternative.

*Mitigation:* None.

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 2014 Class III Cultural Resource inventory for the WRD Federal 25-31 Well Location, Access, and Pipeline Located in NESE Section 26, T2N, R972W, Rio Blanco County, Colorado. (14-21-02: OAHP # RB.LM.R1386)

Tweto, Ogden  
 1979 Geologic Map of Colorado. United States Geologic Survey, Department of the Interior, Reston, Virginia.

Yentsch, Andrew, T., Suzanne B. Easkanazi, Naia George, and Heather M. Weykmnouth  
 2014 A Cultural Resources Inventory for Six White River Dome Wells, Rio Blanco County, Colorado. Environmental Planning Group, Salt lake City, Utah. (14-193-01: OAHP # RB.LM.R1382)

**INTERDISCIPLINARY REVIEW:**

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>	<b>Date Signed</b>
Jessie McGill	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils	10/15/2014
Heather Woodruff	Ecologist	Areas of Critical Environmental Concern; Special Status Plant Species, Forest Management, Wild Horse Management	10/9/2014

<b>Name</b>	<b>Title</b>	<b>Area of Responsibility</b>	<b>Date Signed</b>
Michael Selle	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	11/18/2017
Tyrell Turner	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	10/15/2014
Ed Hollowed	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Wetlands and Riparian Zones	9/22/2014
Ryan Snyder	Natural Resource Specialist	Hazardous or Solid Wastes	12/1/2014
Aaron Grimes	Outdoor Recreation Planner	Wilderness; Visual Resources; Access and Transportation; Recreation,	9/24/2014
Kyle Frary	Fire Management Specialist	Fire Management	9/23/2014
Paul Daggett	Mining Engineer	Geology and Minerals	9/22/2014
Stacey Burke	Realty Specialist	Realty	9/22/2014
Ryan Snyder	Natural Resource Specialist	Project Lead – Document Preparer	12/1/2014
Joseph David	Planning & Environmental Coordinator	NEPA Compliance	12/11/2014

**ATTACHMENTS:**

Figure 1: Map of the Project

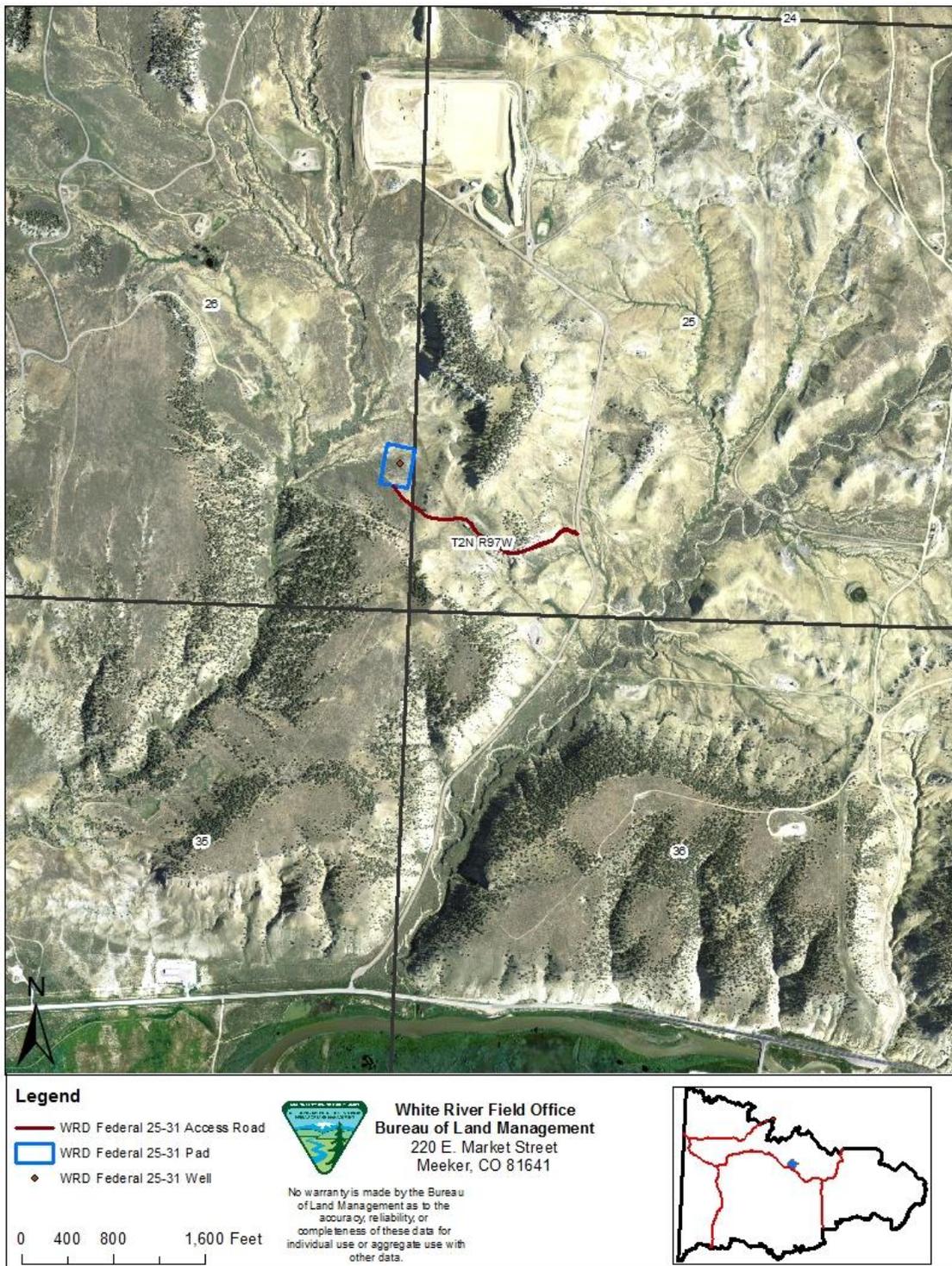


Figure 1: Map depicting the location of the Proposed Action.

**U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
220 E Market St  
Meeker, CO 81641**

**Finding of No Significant Impact (FONSI)  
DOI-BLM-CO-N05-2014-0124-EA**

**BACKGROUND**

The Application for Permit to Drill (APD) for the WRD Federal 25-31 well was received on December 12, 2013. The onsite field meeting occurred on July 23, 2013, after receiving a Notice of Staking (NOS) on July 8, 2013. After the onsite and seven day letter, the pad location was moved away from the slope of the ridge in order to protect midget faded rattle snake habitat. The snakes were observed by the BLM biologists on a separate trip to the location.

Access to this pad would be off of Rio Blanco County (RBC) Road 72, and maintenance and upgrades would occur on the existing access road to WRD 25-41. The new constructed access road would be approximately 1,420 feet, with an estimated 1.95 acres of disturbance. Thus, the disturbance area would extend beyond the pad dimensions (Table 1). The running surface would have a width of 14 feet and a construction width of 50 feet. The maximum grade on the existing 25-41 road is 13.3 percent, and 12.2 percent on the proposed new access road. At this time there is no proposed surfacing of the road beyond native materials. The proposal is to complete enough of the new construction and upgrades for the drilling rig to have access to the location. The additional upgrades would be completed after well completion, if the well is a producer. This includes portions of the stormwater features. Upgrades and construction include the installation of eight culverts, widened curves and turn outs.

In addition to the pad and access road construction, there is a proposed pipeline that would tie into an existing line nearby, at a distance of 119 feet. This proposed pipeline would have a construction width of 50 feet, for an estimated 0.136 acres. The pipeline would be steel pipe with a four-inch diameter that would be installed at a minimum depth of four feet.

**FINDING OF NO SIGNIFICANT IMPACT**

Based upon a review of the EA and the supporting documents, I have determined that the Proposed Action will not have a significant effect on the quality of the human environment, individually or cumulatively with other actions in the general area. No environmental effects meet the definition of significance in context or intensity, as defined at 40 CFR 1508.27 and do not exceed those effects as described in the White River Resource Area Proposed Resource Management Plan and Final Environmental Impact Statement (1996). Therefore, an environmental impact statement is not required. This finding is based on the context and intensity of the project as described below.

## **Context**

The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance. The lease area has been developed for purposes of oil and gas exploration, extraction and development, and anthropogenic disturbance (e.g., well pads, pipeline corridors, and other oil and gas infrastructure) are the dominant disturbance within the lease.

## **Intensity**

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

### **1. Impacts that may be both beneficial and adverse.**

The depletion of the subsurface petroleum reservoir in general is a beneficial impact that adds to domestic energy reserves. Potential surface adverse impacts would be short-term and of low intensity, and proposed mitigation, which will be brought forward as Conditions of Approval, should minimize surface impacts.

### **2. The degree to which the Proposed Action affects public health or safety.**

With the proposed mitigation, which will be brought forward as Conditions of Approval, there would be no impact to public health and safety.

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

No prime farmlands, parklands, ecologically critical areas or scenic rivers occur in the project area.

### **4. Degree to which the possible effects on the quality of the human environment are likely to be highly controversial.**

No comments or concerns have been received regarding possible effects on the quality of the human environment. No scientific controversy has been identified regarding the effects of the Proposed Action on the quality of the human environment.

### **5. Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risk.**

No highly uncertain or unknown risks to the human environment were identified during analysis of the Proposed Action.

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

The Proposed Action neither establishes a precedent for future BLM actions with significant effects nor represents a decision in principle about a future consideration. Similar proposals to drill wells with associated pipelines and access roads have been evaluated and decided upon, so authorization to drill the proposed well would not set a precedent for future actions.

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

Rangeland used for livestock grazing has been described as populated with some cheatgrass; implementation of the Proposed Action alone would not substantially contribute to the quality of the rangeland resources.

**8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

The proposed well pad location and access route have been inventoried at the Class III level of cultural surveys, which did not identify any eligible sites that could be directly impacted by development.

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

No special status plant species concerns have been identified. Cumulative water depletions from the Colorado River Basin are considered likely to jeopardize the continued existence of the Colorado pikeminnow, humpback chub, bonytail, and razorback sucker and result in the destruction or adverse modification of their critical habitat. In 2008, BLM prepared a Programmatic Biological Assessment (PBA) that addressed water depleting activities associated with BLM's fluid minerals program in the Colorado River Basin in Colorado, including water used for well drilling, hydrostatic testing of pipelines, and dust abatement on roads. In response, the U.S. Fish and Wildlife Service (FWS) prepared a Programmatic Biological Opinion (PBO) that addressed water depletions associated with fluid minerals development on BLM lands. The PBO included reasonable and prudent alternatives which allowed BLM to authorize oil and gas wells that result in water depletion while avoiding the likelihood of jeopardy to the endangered fishes and avoiding destruction or adverse modification of their critical habitat. The reasonable and prudent alternative authorized BLM to solicit a one-time contribution to the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program) in an amount based on the average annual acre-ft depleted by fluid minerals activities on BLM lands. This contribution was ultimately provided to the Recovery Program through an oil and natural gas development trade association. Development associated with this project would be entered into the WRFO fluid minerals water depletion log that is submitted to the Colorado State Office at the end of each Fiscal Year.

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

Neither the Proposed Action nor impacts associated with it violate any laws or requirements imposed for the protection of the environment.

**SIGNATURE OF AUTHORIZED OFFICIAL:**



Field Manager

**DATE SIGNED:**

12/12/2014

**U.S. Department of the Interior  
Bureau of Land Management  
White River Field Office  
220 E Market St  
Meeker, CO 81641**

**DECISION RECORD**

**PROJECT NAME:** Koch WRD Federal 25-31 Well

**ENVIRONMENTAL ASSESSMENT NUMBER:** DOI-BLM-CO-N05-2014-0124-EA

**DECISION**

It is my decision to implement the Proposed Action, as mitigated in DOI-BLM-CO-N05-2014-0124-EA, authorizing the construction, operation, and maintenance of the WRD Federal 25-31 well APD and ROW and associated road and pipeline ROWs.

**Mitigation Measures**

1. The operator will limit unnecessary emissions from pollution sources and prevent air quality deterioration from necessary pollution sources in accordance with all applicable state, federal and local air quality law and regulation.
2. The operator will treat all access roads with water during construction and drilling activities so that there is not a visible dust trail behind vehicles. The use of chemicals or treated produced water as a dust suppressant on BLM lands will require prior written approval from BLM.
3. In order to protect public land health standards for soils, any erosion processes such as rilling, gullyng, piping, and/or mass wasting observed on or adjacent to the surface disturbance will be rectified by contacting the AO and submitting a plan with BMPs to address soil erosion and/or stabilization issues.
4. Use of the proposed access road is limited to those times where soils are not saturated. If at any time during construction, drilling, and reclamation of the proposed development that the soils become saturated resulting in rutting greater than three inches work will cease until soils dry so as to not result in increased rutting and erosion.
5. To protect surface waters below the project area, the operator will keep road inlet and outlet ditches, sediment retention basins, and culverts free of obstructions, particularly before and during spring run-off and summer convective storms. The operator will also provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.
6. When drilling to set the conductor and surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment.

7. If excessive livestock grazing in reclamation areas is identified as a cause to failed reclamation the operator will be required to install fencing to preclude grazing from these areas to allow for reclamation activities to become established.
8. For interim reclamation, the BLM recommends Seed Mix #2, outlined in Table 6. The Surface Use of Operation (SUPO) identifies September or October as timing for seeding. If an alternate date of seeding is requested; the operator must contact the designated Natural Resource Specialist prior to seeding for approval. Final reclamation will be completed using the reclamation practices and seed mixes recommended at that time.

**Table 6.** Seed Mix #2 for Interim Reclamation of the WRD FEDERAL 25-31 pad.

<b>Cultivar</b>	<b>Species</b>	<b>Scientific Name</b>	<b>Application Rate (lbs PLS/acre)</b>
Arriba	Western Wheatgrass	<i>Pascopyrum smithii</i>	4
Rimrock	Indian Ricegrass	<i>Achnatherum hymenoides</i>	3.5
Whitmar	Bluebunch Wheatgrass	<i>Pseudoroegneria spicata ssp. inermis</i>	4
Lodorm	Green Needlegrass	<i>Nassella viridula</i>	2.5
Timp	Northern Sweetvetch	<i>Hedysarum boreale</i>	3
	Sulphur Flower Buckwheat	<i>Eriogonum umbellatum</i>	1.5
Alternates:			
	Needle and Thread	<i>Hesperostipa comata spp. comata</i>	3
	Scarlet Globemallow	<i>Sphaeralcea coccinea</i>	0.5

9. In the SUPO where it addresses ripping compacted soils, ensure that ripping is completed before spreading topsoil. If topsoil will be stored for more than one year and other resource values can be accommodated, topsoil should be stored in piles with a depth of two feet or less to help retain soil viability.
10. All seed tags will be submitted via Sundry Notice (SN) to the designated Natural Resource Specialist within 14 calendar days from the time the seeding activities have ended. The SN will include the purpose of the seeding activity (i.e., seeding well pad, cut and fill slopes, seeding pipeline corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, and, if applicable, the name of the contractor that performed the work, his/her phone number, the method used to apply the seed (e.g., broadcast, hydro-seeded, drilled), whether the seeding activity represents interim or final reclamation, the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.
11. Each year by January 1<sup>st</sup>, Koch will submit a Reclamation Status Report to the WRFO that includes the well number, API number, legal description, UTM coordinates, project description (e.g., well pad, pipeline, etc.), reclamation status (e.g., interim or final), whether the well pad and/or pipeline has been re-vegetated and/or re-contoured, date seeded, photos

of the reclaimed site, acres seeded, seeding method (e.g., broadcast, drilled, hydro-seeded, etc.), and contact information for the person responsible for developing the report. The report will include maps showing each point (i.e., well pad), polygon, and/or polyline (i.e., pipeline) feature that was included in the report. The data must be submitted in UTM Zone 13N, NAD 83, in units of meters. In addition, scanned copies of seed tags that accompanied the seed bags will be included with the report when seeding occurred during that year. Internal and external review of the WRFO Reclamation Status Report and the process used to acquire the necessary information will be conducted annually, and new information or changes in the reporting process will be incorporated into the report.

12. The operator will meet the following reclamation success criteria, these standards apply to both interim and final reclamation:
  - a) Self-sustaining desirable vegetative groundcover consistent with the site DPC (as defined by the range site, WRFO AIM protocol site data (BLM TN 440), ecological site or an associated approved reference site) is adequately established as described below on disturbed surfaces to stabilize soils through the life of the project.
  - b) Vegetation with eighty percent similarity of desired foliar cover, bare ground, and shrub and/or forb density in relation to the identified DPC. Vegetative cover values for woodland or shrubland sites are based on the capability of those sites in an herbaceous state.
  - c) The resulting plant community must have composition of at least five desirable plant species, and no one species may exceed 70 percent relative cover to ensure that site species diversity is achieved. Desirable species may include native species from the surrounding site, species listed in the range/ecological site description, the BLM's AIM data, reference site, or species from the BLM approved seed mix. If non-prescribed or unauthorized plant species (e.g., yellow sweetclover, *Melilotus officinalis*) appear in the reclamation site, BLM may require their removal.
  - d) Bare ground does not exceed the BLM's AIM data, range site description and/or if not described, bare ground will not exceed that of a representative undisturbed DPC meeting the Colorado Public Land Health Standards.
13. Submit results of the predisturbance weed survey to the designated Natural Resource Specialist prior to initiating surface disturbing activities.
14. Identify reclamation success criteria as it pertains to cheatgrass.
15. To prevent entrapment and mortality of dispersing snakes, pipeline trenching that remains open overnight during the summer and fall months (June 1 to October 15) should be minimized to the extent possible and inspected for entrapped snakes by a qualified biologist prior to backfilling.
16. In the event well development activities takes place from June 1 through October 15, acreage affected by vegetation clearing and pad/access/pipeline construction must be surveyed and cleared by a qualified biologist to reduce incidents of inadvertent destruction of snakes that have dispersed from the den.

17. To deter subsequent vehicle use along the pipeline corridor that extends NNE to the former Chesapeake 8-26 location and thereby help minimize snake mortality attributable to vehicles, steep embankments should be reestablished on both banks of the channel crossings located about 990 feet and 1,450 feet south of the former Chesapeake # 8-26 well location (approved as Condition of Approval in DOI-BLM-CO-110-2013-0050-EA). No interpad access is authorized along the pipeline corridor between these well pads.
18. To minimize disruption of migratory bird nesting functions, construction of the pad and its access would not be permitted between 15 May and 15 July.
19. Utilizing remote monitoring and controls technology on these and surrounding areas would further reduce the indirect impacts over the life of the well pad by reducing vehicle trips along the access road.
20. Use of the existing pipeline as an interconnect between this road and the neighboring wells will be prohibited to limit the indirect impacts associated with the development.
21. As a means of reducing cumulative impacts on big game severe winter ranges, pad, pipeline, and access construction, drilling, and completion operations would not be allowed between the dates of January 1 and April 30.
22. Koch Exploration Company, LLC, is responsible for informing all persons who are associated with the project that they will be subject to prosecution for knowingly disturbing archaeological sites or for collecting artifacts.
23. If any archaeological materials are discovered as a result of operations under this authorization, activity in the vicinity of the discovery will cease, and the BLM WRFO Archaeologist will be notified immediately. Work may not resume at that location until approved by the AO. Koch Exploration Company LLC, will make every effort to protect the site from further impacts including looting, erosion, or other human or natural damage until BLM determines a treatment approach, and the treatment is completed. Unless previously determined in treatment plans or agreements, BLM will evaluate the cultural resources and, in consultation with the State Historic Preservation Office (SHPO), select the appropriate mitigation option within 48 hours of the discovery. Koch Exploration Company LLC, under guidance of the BLM, will implement the mitigation in a timely manner. The process will be fully documented in reports, site forms, maps, drawings, and photographs. The BLM will forward documentation to the SHPO for review and concurrence.
24. Pursuant to 43 CFR 10.4(g), the Koch Exploration Company LLC, and/or any of its field agents must notify the AO, by telephone and written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), Koch Exploration Company LLC, and/or any of its field agents must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

25. The Koch Exploration Company, LLC is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for disturbing or collecting vertebrate or other scientifically important fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.
26. If any paleontological resources are discovered as a result of operations under this authorization, the Koch Exploration Company, LLC or any of his agents must stop work immediately at that site, immediately contact the BLM Paleontology Coordinator, and make every effort to protect the site from further impacts, including looting, erosion, or other human or natural damage. Work may not resume at that location until approved by the AO. The BLM or designated paleontologist will evaluate the discovery and take action to protect or remove the resource within 10 working days. Within 10 days, the operator will be allowed to continue construction through the site, or will be given the choice of either (a) following the Paleontology Coordinator's instructions for stabilizing the fossil resource in place and avoiding further disturbance to the fossil resource, or (b) following the Paleontology Coordinator's instructions for mitigating impacts to the fossil resource prior to continuing construction through the project area.
27. Any excavations into the underlying native sedimentary rock must be monitored by a permitted paleontologist. The monitoring paleontologist must be present before the start of excavations that may impact bedrock.
28. Comply with all Federal, State and/or local laws, rules, regulations, statutes, standards and implementation plans. This includes but is not limited to, Onshore Orders, Surface Use Plans, State and Rio Blanco County permits.
29. Where required by law or regulation to develop a plan for the prevention of releases or the recovery of a release of any substance that poses a risk of harm to human health or the environment, provide a current copy of said plan to the BLM WRFO.
30. When drilling to set the surface casing, drilling fluid will be composed only of fresh water, bentonite, and/or a benign lost circulation material that does not pose a risk of harm to human health or the environment (e.g., cedar bark, shredded cane stalks, mineral fiber and hair, mica flakes, ground and sized limestone or marble, wood, nut hulls, corncobs, or cotton hulls).
31. All substances that pose a risk of harm to human health or the environment shall be stored in appropriate containers. Fluids that pose a risk of harm to human health or the environment, including but not limited to produced water, shall be stored in appropriate containers and in secondary containment systems at 110% of the largest vessel's capacity. Secondary fluid containment systems, including but not limited to tank batteries shall be lined with a minimum 24 mil impermeable liner.
32. Lessee/Operators and ROW holders will report all emissions, releases, spills, leakages, blowouts, fires that may pose a risk of harm to human health or the environment, regardless

of the substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.

33. As a reasonable and prudent lessees/operator and/or ROW holder in the oil and gas industry, acting in good faith, all lessees/operators and ROW holders will provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any substance that may pose a risk of harm to human health or the environment, regardless of that substance's status as exempt or non-exempt. Where the lessee/operator or ROW holder fails, refuses or neglects to provide for the immediate clean-up and testing of air, water (surface and/or ground) and soils contaminated by the emission or release of any quantity of a substance that poses a risk of harm to human health or the environment, the BLM WRFO may take measures to clean-up and test air, water (surface and/or ground) and soils at the lessee/operator's expense. Such action will not relieve the lessee/operator of any liability or responsibility.
34. When working on lands administered by the BLM WRFO, notify Craig Interagency Dispatch (970-826-5037) in the event of any fire.
  - a) The reporting party will inform the dispatch center of fire location, size, status, smoke color, aspect, fuel type, and provide their contact information.
  - b) The reporting party, or a representative of, should remain nearby, in a safe location, in order to make contact with incoming fire resources to expedite actions taken towards an appropriate management response.
  - c) The applicant and contractors will not engage in any fire suppression activities outside the approved project area. Accidental ignitions caused by welding, cutting, grinding, etc. will be suppressed by the applicant only if employee safety is not endangered and if the fire can be safely contained using hand tools and portable hand pumps. If chemical fire extinguishers are used the applicant must notify incoming fire resources on extinguisher type and the location of use.
  - d) Natural ignitions caused by lightning will be managed by Federal fire personnel. The use of heavy equipment for fire suppression is prohibited, unless authorized by the Field Office Manager.
  - e) Piled vegetation retained for reclamation as part of forest management mitigations shall be located at least twenty five feet from other receptive fuels.
35. The holder will effectively coordinate with existing ROW holders prior to construction activity.
36. The holder shall provide the BLM AO with data in a format compatible with the WRFO's ESRI ArcGIS Geographic Information System (GIS) to accurately locate and identify the ROW and all constructed infrastructure, (as-built maps) within 60 days of construction completion. Acceptable data formats are: (1) corrected global positioning system (GPS) files with sub-meter accuracy or better; (2) ESRI shapefiles or geodatabases; or at last resort, (3) AutoCAD .dwg or .dxf files. Option 2 is highly preferred. In ALL cases the data must be submitted in Universal Transverse Mercator (UTM) Zone 13N, NAD 83, in units of meters. Data may be submitted as: (1) an email attachment; or (2) on a standard compact disk (CD) in compressed (WinZip only) or uncompressed format. All data shall include metadata, for

each submitted layer, that conforms to the Content Standards for Digital Geospatial Metadata from the Federal Geographic Data Committee standards. Questions should be directed to WRFO BLM GIS staff at (970) 878-3800.

37. Construction activity should take place entirely within the areas authorized in the ROW grant.
38. At least 90 days prior to termination of the ROW, the holder shall contact the AO to arrange a joint inspection of the ROW. The inspection will result in the development of an acceptable termination and rehabilitation plan submitted by the holder. This plan shall include, but is not limited to, removal of facilities, drainage structures, and surface material (e.g., gravel or concrete), as well as final recontouring, spreading of topsoil, and seeding. The Authorized Officer must approve the plan in writing prior to the holder's commencement of any termination activities.
39. No surface disturbing activities shall take place on the subject right-of-way until the associated APD is approved. The holder will adhere to special stipulations in the Surface Use Program of the approved APD, relevant to any right-of-way facilities.
40. Boundary adjustments in Oil and Gas lease/unit COC65320A shall automatically amend this right-of-way to include that portion of the facility no longer contained within the above described lease/unit COC65320A. In the event of an automatic amendment to this right-of-way, the prior on-lease/unit conditions of approval of this facility will not be affected even though they would now apply to facilities outside of the lease/unit as a result of a boundary adjustment. Rental fees, if appropriate shall be recalculated based on the conditions of this grant and the regulations in effect at the time of an automatic amendment.

#### **COMPLIANCE WITH LAWS & CONFORMANCE WITH THE LAND USE PLAN**

This decision is in compliance with the Endangered Species Act, and the National Historic Preservation Act. It is also in conformance with the 1997 White River Record of Decision/Approved Resource Management Plan.

#### **ENVIRONMENTAL ANALYSIS AND FINDING OF NO SIGNIFICANT IMPACT**

The Proposed Action was analyzed in DOI-BLM-CO-N05-2014-0124-EA and it was found to have no significant impacts, thus an EIS is not required.

#### **PUBLIC INVOLVEMENT**

Scoping was the primary mechanism used by the BLM to initially identify external and internal issues related to the Proposed Action. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on September 2, 2014. External scoping was conducted by posting this project on the White River Field Office's (WRFO's) on-line National Environmental Policy Act (NEPA) register on September 2, 2014. As of December 1, 2014 no comments have been received.

**RATIONALE**

Analysis of the Proposed Action has concluded that there are no significant negative impacts and that it meets Colorado Standards for Public Land Health. Additionally, authorization to drill the proposed well would allow for the development of an oil and gas lease.

**ADMINISTRATIVE REMEDIES**

**State Director Review**

Under regulations addressed in 43 CFR 3165.3(b), any adversely affected party that contests a decision of the Authorized Officer may request an administrative review, before the State Director, either with or without oral presentation. Such request, including all supporting documentation, shall be filed in writing with the BLM Colorado State Office at 2850 Youngfield Street, Lakewood, Colorado 80215 within 20 business days of the date such decision was received or considered to have been received. Upon request and showing of good cause, an extension may be granted by the State Director. Such review shall include all factors or circumstances relevant to the particular case.

**Appeal**

Any party who is adversely affected by the decision of the State Director after State Director review, under 43 CFR 3165.3(b), of a decision may appeal that decision to the Interior Board of Land Appeals pursuant to the regulations set out in 43 CFR Part 4.

This decision shall take effect immediately upon the date it is signed by the Authorized Officer and shall remain in effect while any appeal is pending unless the Interior Board of Land Appeals issues a stay (43 CFR 2801.10(b)). Any appeal of this decision must follow the procedures set forth in 43 CFR Part 4. Within 30 days of the decision, a Notice of Appeal must be filed in the office of the Authorized Officer at White River Field Office, 220 East Market St., Meeker, CO 81641 with copies sent to the Regional Solicitor, Rocky Mountain Region, 755 Parfet St., Suite 151, Lakewood, CO 80215, and to the Department of the Interior, Board of Land Appeals, 801 North Quincy St., MS300-QC, Arlington, VA, 22203. If a statement of reasons for the appeal is not included with the notice, it must be filed with the Interior Board of Land Appeals at the above address within 30 days after the Notice of Appeal is filed with the Authorized Officer.

**SIGNATURE OF AUTHORIZED OFFICIAL:**



Field Manager

**DATE SIGNED:**

12/12/2014