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-110-2012-0114-EA

CASEFILE/PROJECT NUMBER: COC66241

PROJECT NAME: Yates' Blair Mountain Federal #1 Well

LEGAL DESCRIPTION: T. 2 N., R. 99 W., Sec. 20, 6th P. M.

APPLICANT: Yates Petroleum Corporation (Yates)

PURPOSE & NEED FOR THE ACTION: The purpose of the Proposed Action is to manage the exploration and development of mineral resources on Public Lands in a manner that avoids, minimizes, reduces, or mitigates potential impacts to other resource values.

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. 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 Blair Mountain Federal #1 exploratory 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 11/6/2012. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 11/15/2012.

Issues: No issues were identified during public scoping.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Proposed Action: Yates Petroleum Corporation (Yates) proposes to construct, drill, operate and maintain the Blair Mountain Federal Unit #1 well and associated road infrastructure (Figure 1). Construction of the well pad (including installation of storm water features) would require approximately 4 acres of initial surface disturbance during construction. The well pad would be reclaimed to approximately 1 acre within six months of well completions. In addition, Yates proposes to construct 554 feet of new access and initial construction (with a 50 feet construction width) would result in approximately 0.6 acres of initial disturbance. The road would be reclaimed down to a 16 feet visible surface during the production phase. The road would result in approximately 0.2 acres of surface disturbance after the construction corridor is reclaimed to leave only the traveling surface of the road.

Table 1. Anticipated surface disturbance at various phases of the proposed operation to construct, drill from, and reclaim the Yates' well pad.

	Disturbance in acres during Construction Phase	Disturbance in acres during Production Phase	Disturbance in acres following Abandonment
554ft for access road (50 foot disturbance width)	0.6	0.2	0.0
well pad with storm water features installed	4.3	1.4	0.0
Total	4.9	1.6	0.0

Design Features specific to the Proposed Action are detailed in the Surface Use Plan of Operations (SUPO) that was submitted with the Application for Permit to Drill (APD) for the proposed well.

No Action Alternative: The Application for Permit to Drill would be denied. No well would be drilled, no pad would be built, and no access road constructed.

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: 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) 5th 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 1. 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
Wind Energy Met Towers			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[1]	Resource	Rationale for Determination
Physical Resources		
PI	Air Quality	See discussion below.
PI	Geology and Minerals	See discussion below.
PI	Soil Resources*	See discussion below.
PI	Surface and Ground Water Quality*	See discussion below.
Biological Resources		
NP	Wetlands and Riparian Zones*	There are no systems that support riparian vegetation that would have the potential to be influenced by the Proposed Action. Yellow Creek, the nearest system which supports riparian vegetation, is separated from the proposed location by approximately 0.80 miles of ephemeral channel (East Greasewood Creek). This also makes its highly unlikely that any sedimentation from construction would make it from the proposed site to Yellow Creek as East Greasewood Creek is inundated at relatively infrequent and low volume amounts.
PI	Vegetation*	See discussion below.
PI	Invasive, Non-native Species	See discussion below.
PI	Special Status Animal Species*	See discussion below.
PI	Special Status Plant Species*	See discussion below.
PI	Migratory Birds	See discussion below.
NP	Aquatic Wildlife*	There are no systems that support aquatic wildlife or provide habitat for aquatic species that would have the potential to be influenced by the Proposed Action. The nearest system which supports higher order aquatic vertebrate species is Yellow Creek and it is separated from the proposed location by approximately 0.80 miles of ephemeral channel.
PI	Terrestrial Wildlife*	See discussion below.
PI	Wild Horses	See discussion below.
Heritage Resources and the Human Environment		

Determination[1]	Resource	Rationale for Determination
PI	Cultural Resources	See discussion below.
PI	Paleontological Resources	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.
NI	Fire Management	This is within the C5 Greasewood Creek Polygon. During initial construction a full suppression strategy would be considered.
NI	Social and Economic Conditions	There would not be any substantial changes to local social or economic conditions.
NP	Environmental Justice	According to recent Census Bureau statistics (2000), there are no minority or low income populations within the WRFO.
PI	Lands with Wilderness Characteristics	See discussion below.
	Resource Uses	
NP	Forest Management	No woodlands are present in the area impacted by the Proposed Action.
PI	Rangeland Management	See discussion below.
PI	Floodplains, Hydrology, and Water Rights	See discussion below.
NI	Realty Authorizations	Rights-of-way are located in the Proposed Action area; however, they are not affected by pad and access road construction. The access road is located on unit and thus no right-of-way is required.
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.
	Special Designations	
NP	Areas of Critical Environmental Concern	Lower Greasewood Gulch is approximately 0.8 aerial miles northeast of the Proposed Action. Due to the distance from disturbance, there are no associated concerns.
NP	Wilderness	There are no designated wilderness areas or wilderness study area near 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.

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

* Public Land Health Standard

AIR QUALITY

Affected Environment: The Proposed Action is an attainment area for national and state air quality standards, based on the list of designated non-attainment areas for criteria pollutants (EPA 2013). The Proposed Action is also located more than 10-miles from any special designation airsheds or non-attainment area. 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 (NAAQ) standards. Projects that could impact 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 closest special designation areas are Dinosaur National Monument which is located northwest of the project area (designated Class II airshed with Prevention of Significant Deterioration (PSD) with thresholds for sulfur oxides and visibility), and the Mount Zirkel and Flat Tops Wilderness Areas located east of the Proposed Action (designated Class I areas). The closest non-attainment area in Colorado is along the Front Range corridor and it is non-attainment for ozone. General conformity regulations require that federal activities do not cause or contribute to a new violation of NAAQ standards; that actions do not cause additional or worsen existing violations of the NAAQ standards; and that attainment of these standards is not delayed by federal actions in non-attainment areas.

The Proposed Action is in Rio Blanco County within the Western Counties Monitoring Region of Colorado (APCD 2010). Local air quality parameters including particulates are measured at monitoring sites located at Meeker, Rangely, Dinosaur, and Ripple Creek Pass near the Flat Tops Wilderness Area. Ozone data have been collected in Meeker and Rangely since 2010. The closest location for an Interagency Monitoring of Protected Visual Environments (IMPROVE) site is near the Flat Tops Wilderness, northeast of the Project Area. IMPROVE sites measure visibility impairment from air borne particles.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would result in low and short-term impacts on air quality during construction, drilling, completion and, to a lesser extent, from vehicles and gas processing and compression facilities during the production phase. Increases in the following criteria pollutants would occur due to combustion of fossil fuels during construction activities: carbon monoxide, ozone (secondary pollutant formed photochemically from volatile organic compounds (VOCs) and nitrogen oxides (NOx)), nitrogen dioxide, and sulfur dioxide. 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. Ozone can cause breathing difficulties and worsen respiratory infections especially in the elderly, the young, and those with pre-existing ailments such as asthma.

Additional low, short-term impacts to air quality may occur due to venting or flaring of gas from wells and VOCs from equipment, storage and treatment of cuttings, and from tanks during drilling and completion activities. Venting and/or flaring of natural gas is typically done for short periods of time in order to determine potential production amounts and characterize the quality

of the gas. If the exploratory well is successful, VOCs including hazardous air pollutants (HAPs) commonly associated with oil and gas production (e.g., benzene, toluene, ethylbenzene, xylene, and n-hexane) will be released from tanks, and separation equipment. The amount of these releases are difficult to estimate, but would likely be within CDPHE air permit limits estimated in tons per year. Non-criteria pollutants (NAAQ standards 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.

Soil disturbance resulting from construction, heavy equipment, and drill rigs is expected to cause increases in fugitive dust and inhalable particulate matter, specifically particulate matter (PM) 10 microns (μm) or less (PM_{10}) and particles 2.5 μm or less ($PM_{2.5}$). Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. More than 70 percent of PM_{10} (coarse particles) are created from windblown dust and soil from roads, fields, and construction sites. A smaller percentage of coarse particles comes from automobile and diesel engine exhaust, soot from wood fires, and sulfates and nitrates from combustion sources such as industrial boilers (CAQCC 2011). Dust production is the most likely during the construction and drilling phases, especially when conditions are dry and/or windy. Particulate matter is the major contributor to reductions in visibility, due to particulates' ability to scatter or absorb light. Particulate matter can also have human health impacts.

Fugitive dust emissions would likely cause low, short-term impacts to local air quality, specifically visibility. Once the well pad goes into interim reclamation topsoil removed during road construction would be redistributed and stabilized alongside the road and the pad would be recontoured and stabilized. As vegetation establishes in the reclaimed areas, dust production will occur only when vehicles travel on the access roads to service the wells. The increase in airborne particulate matter from this project is not expected to exceed CAAQ or NAAQ standards on an hourly, 8-hour average or daily basis.

It is unlikely that Yellow Creek where the Proposed Action is located would be in a future non-attainment area for ozone. This is due to the distance from Rangely; that Yellow Creek is not likely to be impacted by emissions from the Uinta and Yampa River Basins; and local climate conditions which favor dispersion of pollutants that form ozone.

In summary, soil disturbance resulting from construction of pads and roads and drilling is expected to cause increases in fugitive dust and inhalable particulate matter in the immediate vicinity of 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 occur due to combustion of fossil fuels during exploration and production activities. 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 NAAQ and Colorado ambient air quality (CAAQ) standards, and is likely to comply with applicable PSD increments and other significant impact thresholds.

Cumulative Effects: The cumulative impacts area for the Proposed Action is the two-county area (Rio Blanco and Garfield Counties). Principal air pollution sources in the two-county area include emissions from motor vehicles, oil and gas development, coal-fired power plants, coal mines, sand and gravel operations, windblown dust, and wildfires and prescribed burns (CAQCC 2011). Facility emissions in the two-county area are dominated by emissions related to oil and gas exploration, processing, or transportation. Due to emission sources in the Piceance, White River and in the nearby Uinta and Yampa River Basins, VOCs, nitrogen oxides, and dust (particulate matter) are likely to increase into the future. With the exception of ozone, overall air quality conditions in Rio Blanco and Garfield Counties are likely to continue to be in attainment of NAAQ standards due to effective atmospheric dispersion.

Since 2010, the Rangely and Dinosaur areas in Northwestern Colorado have measured high values of ozone during static air events. High ozone values are likely due in part to VOCs and nitrogen oxides emitted by oil and gas development in the Uinta basin, near Rangely and from power plants in Utah. The Rangely air quality monitoring site has measured 8-hour values for ozone above the NAAQ ozone standard of 75 ppb since data have been collected at the site. However, until this year these values have not been high enough to lead to an exceedance of NAAQ standards. Maximum 8-hour average ozone values measured at Rangely in January and February of 2013 are likely to result in exceedance of the NAAQ standards, since the fourth highest value for 2013 is already 91 ppb and the average of the fourth highest values from 2011-2013 is currently 77 ppb. Additional regulation of emissions will likely be applied to BLM permitted oil and gas development within a future designated non-attainment area. As described above EPA and CDPHE are responsible for designating non-attainment areas and would likely require performance standards and practices in this area to ensure future compliance with NAAQ standards. These would have the effect of lowering emissions non-attainment areas, but are unlikely to have an impact on air quality in Yellow Creek.

The Proposed Action is unlikely to contribute to the exceedance of NAAQ standards for ozone in the Rangely and Dinosaur areas since the predominant wind patterns in Yellow Creek and Piceance Creek basins generally blow from southwest to northeast. The Meeker air quality site to the northeast of the Proposed Action has not measure an exceedance of NAAQ standards and the average of the fourth highest value for 8-hour ozone for 2010-2012 was 64 ppb. Therefore this action is unlikely to lead to a violation of NAAQ standards for ozone or contribute to the air quality conditions leading to the exceedance of standards measured in Rangely or Meeker.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Impacts to air quality would not occur from the No Action Alternative.

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

Mitigation: The following should be added as COAs:

1. Yates will limit unnecessary emissions from point or nonpoint 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. Yates will treat all access roads with water and/or a chemical dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. Any technique other than the use of freshwater 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 overlying the Uinta Formation (Hail). Structurally it is located on the southwestern flank of the Red Wash Syncline and approximately 0.1 miles north of mapped graben fault (Hail). During drilling potential water, oil shale, coal, oil, and gas resources would be encountered from surface to the targeted zone. Fresh water aquifer zones that may be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove, and dissolution surface in the Green River formation. These geologic zones along with upper portion of the Wasatch are known for difficulties in drilling and cementing. The well and pad are located in the Blair Mountain Federal Oil and Gas Exploratory Unit COC-75548X on Federal Oil and Gas Lease COC66241. The Blair Mountain Unit borders the Barcus Creek Unit on the south and the Fletcher Gulch Unit on the west. No oil and gas exploration has occurred within a three mile radius of the proposed well pad (COGCC). The nearest evidence of oil and gas activity is a plugged and abandoned well over three miles northeast of the proposed well and the closest producing well is over four miles to the south of the well. The proposed well would recover oil and gas resources from Federal Oil and Gas Lease COC66241 and the Blair Mountain Unit.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: There is potential for commingling of the aquifer zones, however, the cementing procedure of the Proposed Action isolates the formations and would prevent the migration of gas, water, and oil between formations including the oil shale zones. Development of the well would deplete the hydrocarbon resources 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 mentioned above, the COGCC database does not identify any oil and gas activity within a three mile radius of the proposed well pad. An additional 450 wells for full development of the oil and gas resource within this three mile radius could be required if bottom hole spacing of 40 acres is necessary for the recovery of the resources.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: The natural gas resources in the targeted zones will not be developed at this time. The potential of the oil and gas resources in this undeveloped area would remain uncertain.

Cumulative Effects: There would be no contribution to conflicts between recovery of oil shale, sodium, and natural gas resources.

Mitigation: None.

SOIL RESOURCES

Affected Environment: The classifications of soils within 30 meters of the proposed pad and centerlines of the access road, within the WRFO and that could be impacted by the Proposed Action, are shown in Table 4.

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

Soil Classification	Range Site	Erosion Hazard (Roads/ Trails)	Rutting Hazard	Potentially Impacted (Acres)
Barcus channery loamy sand, 2 to 8 percent slopes	Foothill Swale	Moderate	Slight	9
Glendive fine sandy loam	Foothill Swale	Moderate	Severe	2

Of the 11 acres analyzed, none of soils are classified as fragile or with landslide potential; this is due to the location of the pad on an alluvial fan from a tributary to East Greesewood Creek. The pad is mostly in Barcus channery loamy sand soils and it has a moderate erosion rating with the potential for slight soil rutting. A portion of the southwestern corner of the pad will be in Glendive fine sandy loam soils that also have a moderate erosion hazard, but a severe rutting hazard. The access road will be surfaced to provide an all-weather access and comes in on the Barcus channery loamy sand soils.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Direct impacts from the construction of the well pad and access road 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, mixing of less productive soil layers, and a loss of structure. An increase in surface runoff and sedimentation could be expected from impacted soils.

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. With proper BMPs for stormwater, construction, reclamation and mitigation, impacts to soils outside the 30 meter buffer around surface disturbance is not expected. Other indirect impacts from this project may include contamination of surface and subsurface soils due to unintentional leaks or spills from construction equipment, storage tanks production equipment and if these spills occurred they would affect the productivity of soils.

Cumulative Effects: Well pads in the general area 5th-Level Hydrologic Unit Code named Yellow Creek are within the Mesaverde Play Area and are likely to have 2-3 multi-well pads per section. Multi-well natural gas pads include surface disturbance for well pads, roads and support facilities. Livestock grazing and dispersed recreation 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. Oil shale research and development and nacholite mining occur within the Yellow Creek watershed. Cumulative impacts can be expected from other oil and gas development, oil shale, nacholite mining, livestock and recreational use can be expected in Yellow Creek watershed. 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.

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: None.

Finding on the Public Land Health Standard #1 for Upland Soils: This action is unlikely to reduce the productivity of soils on public lands.

SURFACE & GROUND WATER QUALITY

Affected Environment: Surface Water: This project is within East Greasewood; a tributary to Yellow Creek and the White River. Table 5 describes water segments that may be impacted by this project.

Table 5. Water Quality Classification Table (WQCC 2013)

Segment	Segment Name	Use Protected	Protected Beneficial Uses			
			Aquatic Life	Recreation	Agriculture	Water Supply
13b	Tributaries to Yellow Creek	No	Warm 2	Not Primary Contact Recreation	Yes	No
13c	The mainstem of Yellow Creek from Barcus Creek to the White River	No	Warm 2	Not Primary Contact Recreation	Yes	No

Segment 13b and 13c, Stewart Creek is protected for warm water aquatic life (Warm 2). The warm designation means the classification standards would be protective of aquatic life normally found in waters where the summer weekly average temperatures frequently exceed 20 °C. The Warm 2 designation means that it has been determined that these waters are not capable of sustaining a wide variety of warm water biota.

Segment 13b is listed on the Monitoring and Evaluation list for aquatic life in Duck Creek. Duck Creek is upstream and not tributary to East Greesewood. Yellow Creek is listed on the impaired list for aquatic life and total recoverable iron. This is downstream and East Greesewood is tributary to this listed stream segment.

Groundwater: A portion of annual precipitation infiltrates to deeper bedrock aquifers that contribute to groundwater springs. Springs and ground water inputs generally occur in both bedrock and alluvial aquifers along valley bottoms. Contact springs are common in the area and are often the result of upper bedrock aquifers consisting of fractured, lean oil shale zones and siltstones of the Green River Formation above and below the Mahogany Zone. Perched groundwater zones occur locally when saturated zones contact differences in permeability and solubility of individual formations.

Lambert Springs located where Greesewood Creek joins Yellow Creek are the most directly down gradient springs in relation to the proposed drilling pad. There are a combination of perched, contact, and bedrock derived springs in this Lambert Springs complex. Stinking Water Spring in Yellow Creek is directly east of the project and its source is likely from deep groundwater sources. These springs have all been inventoried by the BLM in 1983 and again in 2010-2012 and are very prolific for this area. The BLM also holds water rights on these springs as stock and wildlife watering sources.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Surface Waters: Clearing, grading, and soil stockpiling activities associated with the Proposed Action would alter overland flow and natural infiltration patterns. Potential direct impacts include surface soil compaction caused by construction equipment and vehicles, removal of vegetation and disturbance of surface soils, which would increase rain-splash erosion and reduce the soil's ability to absorb water and increase the volume and rate of surface runoff, which in turn would increase surface erosion. Stormwater measures and best management practices including periodic monitoring of any erosion problems would be essential to avoid indirect impacts such as off-site erosion.

Yates estimates that 55,000 barrels of fresh water would be used during construction and drilling activities. The White River Field Office uses an estimate of 2.62 acre-feet of fresh water use per well to estimate depletions and this value was used for a programmatic agreement with the US Fish and Wildlife for depletions (See Special Status Animals Species). This programmatic agreement will be used for this project. The freshwater use estimate is 7.0 acre-feet which is above the typical depletion amount. It is typical for single exploratory well to use more water than the average, since there is not as ready an opportunity for recycling of produced water or the re-use of water from another drilling operation.

Surface runoff associated with storm events may increase sediment loads in surface waters down gradient of disturbed areas. Sediment can be deposited and stored in minor drainages where it would be moved into the White River during heavy convective storms. Surface erosion for this project is most likely during the construction and early production phases of the project and would be mitigated using BMPs for stormwater.

Groundwaters: As described in the Affected Environment, aquifers in the Project Area include the Tertiary Uinta-Animas aquifer, and the Cretaceous Mesaverde aquifer. The Uinta-Animas aquifer consists of portions of the Green River and Uinta formations and is generally divided into upper and lower units by the Mahogany zone of the Parachute Creek Member of the Green River Formation, which retards water movement vertically.

There are two zones of potential water (A-groove and the B-groove) in the Parachute Member of the Green River formation; the deepest of these zones is estimated at not more than 1,028 feet below the surface according to logging information from the Barodynamics B72-1 well located near the proposed pad locations. These potential freshwater zones will be protected by surface casing since casing will be 1,500 feet below the surface, cementing behind this casing will be carried to the surface. The grade of cement used will vary but drilling practices will be employed and checked by the BLM to eliminate gaps between cement. 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 and hydrologic fracturing activities without bursting.

Loss of drilling fluids may occur at any time in the drilling process due to changes in porosity or other properties of the rock being drilled. When this occurs, drilling fluids may be introduced into the surrounding formations which could include freshwater aquifers. If drilling fluids are lost, groundwater aquifers may be contaminated by drilling additives. Using bentonite, freshwater and other additives that cannot contaminate groundwater mitigates the loss of drilling fluids that can be common during drilling since the introduction of these substances 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 gas development and even in the same well bore. According to COGCC requirements, all chemicals (greater than 500 pounds) used during drilling, completion, and work-over operations, including hydraulic fracturing treatments will be disclosed in a chemical disclosure form by well site. Also, chemicals and additives used for hydraulic fracturing will be disclosed on the public web site set up for this purpose.

Hydraulic fracturing is designed to change the producing formations' physical properties by increasing the flow of water and gas around the well bore. Hydraulic fracturing may also introduce chemical additives into the producing formations. Chemical additives used in completion activities will mostly be pumped back to surface tanks before production. Left over fluids will be injected in a Class II injection well.

Known groundwater bearing zones in the project area would be protected by drilling plan as described. 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 the exception of the deeper groundwater formations that feed Stinking

Springs, these are at unknown depths. With proper drilling and completion practices contamination of groundwater resources is unlikely.

Cumulative Effects: Well pads in the general area of the Yellow Creek 5th-Level Hydrologic Unit Code are within the Mesaverde Play Area and are likely to have 2-3 multiple well pads per section. Extensive development of natural gas is foreseeable in this area. Livestock grazing and dispersed recreation 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. No other impacts other than oil and gas development, livestock and reclamation are expected in Yellow Creek. In general, soil disturbance in the Proposed Action and other activities may lead to increased erosion and increased salt or sedimentation loading.

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: The following should be added as COAs:

1. To protect surface waters below the project area, 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. Provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.

2. Install culverts and low-water crossings with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.

3. Locate drainage dips and drainage ditches in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or dips.

4. 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 (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).

Finding on the Public Land Health Standard #5 for Water Quality: It is unlikely that construction of these well pads and access roads or drilling would result in an exceedence of state water quality standards.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The proposed well pad and access road are located within a Foothill Swale ecological site. Vegetation cover within this ecological site is comprised primarily basin wildrye (*Leymus cinereus*), slender wheatgrass (*Elymus trachycaulus*), native bluegrass (*Poa spp.*), squirreltail (*Elymus elymoides*), bluebunch wheatgrass (*Pseudorogneria spicata*), western wheatgrass (*Agropyron smithii*), big sagebrush (*Artemesia tridentata*), rabbitbrush (*Chrysothamnus spp.*), fourwing saltbush (*Atriplex canescens*), and scarlett globemallow (*Sphaeralcea coccinea*).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The proposed project would disturb approximately 4.9 acres. The principal impact to vegetation would be complete removal of vegetation for construction of the well pad and access road and the earthen disturbance associated with removing vegetation. In terms of plant community composition, structure, and function, the principal impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas associated with well pad and access road construction. If revegetation is prompt and effective, there likely would be no long term impact to vegetation communities within the project area. The applicant has included a grass seed mix and a forb/shrub seed mix to be used after successful establishment of the grass seed mix. The grass seed mix does not include basin wildrye a dominant key species within the foothill swale ecological site.

Cumulative Effects: The Proposed Action would not add substantially to current or future disturbances within the project area. This project area currently has healthy and diverse plant community composition; therefore the removal of 4.9 acres of vegetation is not expected to have any measurable influence on the overall plant community.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no action authorized that could influence the upland vegetation on these sites.

Cumulative Effects: There would be no additional contribution to previous, existing, or future disturbances under this alternative.

Mitigation:

1. In addition to the design features included in the Proposed Action, the applicant shall use seed that is certified and free of noxious weeds. All seed tags will be submitted to the *designated Natural Resource Specialist* within 14 calendar days from the time the seeding activities have ended via Sundry Notice (SN). The sundry will include the purpose of the seeding activity (i.e., seeding well pad cut and fill slopes, seeding the road corridor, etc.). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his or 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, an

estimate of the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.

2. BLM recommends removing Inland saltgrass from the proposed seed mixture in the Surface Use Plan and replacing with Basin wildrye (*Leymus cinereus*) at a drill seed rate of 3.5 lbs pure live seed per acre or utilizing BLM standard seed mix #5 listed below.

Seed Mix	Cultivar	Common Name	Scientific Name	Application Rate (lbs PLS/acre)
5	Magnar	Basin Wildrye	Leymus cinereus	3.5
	Rosana	Western Wheatgrass	Pascopyrum smithii	3.5
	San Luis	Slender Wheatgrass	Elymus trachycaulus ssp. trachycaulus	3
	Critana	Thickspike Wheatgrass	Elymus lanceolatus ssp. lanceolatus	3
	Timp	Northern Sweetvetch	Hedysarum boreale	4.5
	Maple Grove	Lewis Flax	Linum lewisii	1
	Alternates:*			
	Sodar	Streambank Wheatgrass	Elymus lanceolatus ssp. psammophilus	3
		Scarlet Globemallow	Sphaeralcea coccinea	0.5

3. Application rates included in the proposed seed mix are recommended for drill seed application. If drill seeding method cannot be implemented, seed should be broadcast at double the rate specified. Broadcast seed should be covered by harrowing or raking to ensure germination and establishment. Seeding should occur between September 1 and March 15.

4. Stripped topsoil shall be stockpiled for subsequent reclamation of unused areas on the well pad where it was originally removed. Properly store topsoil to protect it from erosion and compaction, assure that it remains readily identifiable (i.e., signed), viable, and available for redistribution during reclamation. Topsoil piles that will be stored for more than one month should be seeded with an approved BLM seed mix, stabilized with certified weed free erosion fabric or mulch, and may require fencing. When topsoil will be stored for more than one year and other resource values can be accommodated, topsoil will be stored in piles with a depth of two feet or less.

5. Applicant shall be responsible for reclamation of unused portions of well pads, including revegetation with a BLM-approved seed mix. Seed mixes planned for use in reclamation are provided as a design feature in the Proposed Action and are based on the ecological site defined by the soil map units within the project area.

6. If necessary to achieve successful reclamation, livestock shall be excluded from reclaimed areas. Fences, cattle guards, and gates (all built to BLM specifications per BLM manual H-1741-1) will be installed, maintained, and removed by the operator upon approval by the WRFO BLM. In specific and predetermined instances, livestock exclosures may be retained for extended periods to meet other resource objectives.

7. Upon final abandonment of well pads, 100 percent of all disturbed surfaces, including access roads, shall be restored to pre-construction contours to the extent practicable and revegetated. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding, planting) and non-vegetative (material not harmful to wildlife, including straw bales and wattles, woody debris, biodegradable fabric) techniques. Monitoring and additional reclamation efforts shall persist until reclamation is proven successful, as determined by the BLM.

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: Upland plant communities in the project area currently meet the Standard and are expected to meet the Standard in the future following project implementation and successful reclamation of disturbed areas, as described in the Surface Use Plan which has been incorporated in to the Proposed Action of this document.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Affected Environment: Noxious and invasive weed species known to occur within the project area include: houndstounge, Canada thistle, common mullein, halogeton, and cheatgrass. Cheatgrass and halogeton are annual, invasive/noxious weed species know to readily establish within disturbed areas such as along roads and in areas of unvegetated earthen disturbance.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would create approximately 4 acres of new earthen disturbance; which if not revegetated with desirable species and /or treated with herbicides to eradicate invasive, non-native species, would likely be invaded and dominated by undesirable species, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project sites to surrounding native rangelands resulting in a long term negative impact. The resulting increase of noxious weeds/cheatgrass could perpetuate a downward cycle of environmental degradation that would be largely irreversible. There would be a low likelihood of long term negative impact if the design features included in the surface use plan are followed, and prompt successful reclamation with desirable native vegetation species is achieved.

Cumulative Effects: The Proposed Action would contribute to incremental fragmentation of native plant communities, which puts these areas at greater risk for establishment and spread of noxious and invasive weed species. If noxious weeds establish in these plant communities the health of the upland plant communities and the associated ecological function would decline. With timely and successful reclamation the risk of weed establishment and the effects of fragmentation would be minimized.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no action authorized that would influence the native vegetation of this area.

Cumulative Effects: There would be no additional contribution to previous, existing, or future disturbances under this alternative.

Mitigation: The following should be added as COAs:

1. All equipment that may act as a vector for weeds shall be cleaned before entering the project area.

2. All seed placed on BLM lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and shall be certified by a qualified Federal, State, or county office as free of noxious weeds.

3. All straw, mulch, or other vegetative material used on site (e.g., for site stability or rehabilitation) shall be certified by a qualified Federal, State, or county office as free of noxious weeds or weed seed.

4. All sites shall be monitored and treated for noxious weeds on an annual basis for the life of the project until Final Abandonment has been approved by the BLM.

5. Application of herbicides shall comply with the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environments Impact Statement* (EIS), and the WRFO Integrated Weed Management Plan (DOI-BLM-CO-110-2010-0005-EA).

6. Pesticide Use Proposals (PUPs) shall be submitted to and approved by the BLM before applying herbicides on BLM lands. The PUP will include target weed species, the herbicides to be used, application rates and timeframes, estimated acres to be treated, as well as maps depicting the areas to be treated and known locations of weeds.

7. All disturbed areas shall be revegetated as outlined in the mitigation measures related to *Vegetation,* and as directed by the AO.

SPECIAL STATUS ANIMAL SPECIES

Affected Environment: There are no threatened, endangered or candidate animal species that are known to inhabit or derive important use from the project area. The only listed species that has potential to be indirectly influenced by the Proposed Action is the Colorado pikeminnow. While the species occurs in the White River below Taylor Draw Dam and Kenney Reservoir (approximately 2 valley miles from the project area), the White River and its 100-year floodplain from Rio Blanco Lake to the Utah state line are designated critical habitat for the pikeminnow. The White River in Colorado does not appear to support spawning activity, young-of-year nurseries, or juvenile concentrations areas for the Colorado pikeminnow. Additionally, while the listed bonytail, humpback chub, and razorback sucker do not occur in the White River, water depletions in the White River adversely affect these species' downstream habitats in the Green River.

Several BLM-sensitive animal species are known to inhabit or may be indirectly influenced by the Proposed Action, including Brewer's sparrow, northern goshawk, bald eagle, Townsend's big-eared bat, big free-tailed bat, spotted bat, fringed myotis, flannelmouth sucker, mountain sucker, roundtail chub, and bluehead sucker.

BLM sensitive aquatic species: The roundtail chub and bluehead sucker are confined to the White River. Additionally, flannelmouth and mountain sucker inhabit the White River but also occur in small numbers at the confluence (and up to one mile upstream) of the White River and Crooked Wash.

Northern Goshawk: It is unlikely the open-canopied, shorter stature, even-aged woodlands surrounding the project area provide suitable nest substrate for woodland raptors, particularly northern goshawk. This species typically prefers to nest in contiguous aspen or mixed coniferous forests. Based on the BLM's experience, goshawks nest at low densities throughout the Basin in mature PJ woodlands above 6,500 ft and Douglas-fir and aspen stands. The WRFO has about six recent records of goshawk nesting in the Piceance Basin, the nearest being over 14 miles from the project area.

BLM-sensitive bat species: Although the distribution of bats in the WRFO is incompletely understood, recent acoustic surveys in the Piceance Basin and along the lower White River have documented the localized presence of Townsend's big-eared and big free-tailed bats along larger perennial waterways. These bats typically use caves, mines, bridges, and unoccupied buildings for night, nursery, and hibernation roosts, but in western Colorado, single or small groups of bats use rock crevices and tree cavities. Rock outcrops and mature components of PJ which may provide temporary daytime roosts for small numbers of bats are limited in the immediate vicinity of the project area. Relatively extensive riparian communities are available along the White River (approximately 2 miles from project area) and Yellow Creek (Approximately 0.82 river valley miles from project area). There are no underground mines or known caves or unoccupied buildings in the vicinity of the project area. Birthing and rearing of young for these bats occur in May and June, and young are capable of flight by the end of July. The big free-tailed bat is not known to breed in Colorado.

Brewer's sparrow: Brewer's sparrows are common and widely distributed in virtually all big sagebrush, greasewood, saltbush, and mixed brush communities throughout the resource area. These birds are typically one of the most common members of these avian communities and breeding densities generally range between 10-40 pairs per 100 acres. Although most abundant in extensive stands of sagebrush, the birds appear regularly in small (one to two acre) sagebrush parks scattered among area woodlands and it is extremely likely that the sagebrush communities surrounding the project area provide nesting habitat for this species. Typical of most migratory passerines in this area, nesting activities normally take place between mid-May and mid-July.

Bald eagle: The White River corridor is the hub for seasonal bald eagle use of the White River valley. Particularly during the late fall and winter months, several dozen bald eagles make regular foraging use of open upland communities along the river and its larger tributaries. These foraging forays from nocturnal roosts along the White River are dispersed and opportunistic. The nearest known nest location (last successful in 2010) is over 24 miles from the project area. The

nearest known historic nest location (not active in recent years) is over three miles from the project area.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects:

Endangered Colorado River fish and BLM-sensitive fish species: 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, the BLM prepared a Programmatic Biological Assessment (PBA) that addressed water depleting activities associated with the 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 the 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. Implementation of State and federally-imposed design measures to control erosion and spills would limit the risk of contaminants migrating off-site and degrading water quality in the White River.

Northern goshawk/BLM-Sensitive Bat Species: Due to the limited amount of suitable habitat involved, the Proposed Action is not expected to have any conceivable influence on BLM-sensitive bat species and northern goshawk breeding activities, nor would it directly involve habitats that support nesting/roosting functions of these species. Raptor surveys were conducted by a WRFO wildlife biologist on June 13, 2013. (See additional discussion in the Terrestrial Wildlife section). No nests were observed within the woodland habitats nor were any woodland raptors observed.

Brewer's sparrow: The Proposed Action would remove roughly 4.9 acres of greasewood and low density sagebrush habitats. Due to the minimal amount of sagebrush involved and utilization of the area by livestock, the project area likely supports less than the average 1- 4 breeding pairs per acre of Brewer's sparrow and it is unlikely that the Proposed Action would have any short or long term effects on Brewer's sparrow populations.

Bald eagle: Bald eagle foraging use is dispersed and opportunistic across the entire White River Resource Area. The nearest known nest/roost location is more than three miles from the project area. Disturbance/activity associated with the Proposed Action is not anticipated to have any conceivable influence on local bald eagle populations.

Cumulative Effects: Cumulative effects would be similar to those discussed in the Migratory Bird and Terrestrial Wildlife sections.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to special status animal species under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances that would potentially impact special status animal species or important habitats under the No Action Alternative.

Mitigation: See Migratory Bird section.

Finding on the Public Land Health Standard #4 for Special Status Species: The Land Health Standards for special status animal communities are currently being met in the project area. Neither the Proposed nor No Action Alternatives are expected to detract from continued meeting of these standards.

SPECIAL STATUS PLANT SPECIES

Affected Environment: The proposed project is located approximately 3.3 miles south of the White River in the bottom of the Greasewood Creek drainage. Vegetative communities surrounding the proposed project include sagebrush, greasewood, and grazed grassland communities in the Greasewood Creek drainage; and pinyon/juniper, mixed desert shrub, sagebrush, and predominantly-barren communities along the hills above Greasewood Creek. Soils near the proposed project consist of Glendive fine sandy loam and Barcus channery loamy sand within the Greasewood Creek drainage and Rentsac channery loam and Torriorthents-rock outcrop complex on the hills and outcrops above Greasewood Creek. Outcrops of the Green River and Uinta Formations are present along the hillsides above Greasewood Creek, indicating the potential presence of the federally listed plant species *Physaria obcordata* and *Physaria congesta*. The area surrounding the project has been impacted historically by mineral extraction, transportation corridors, livestock grazing, and erosion.

Surveys were performed by Grasslands Consulting, Inc. on May 22 and 23 of 2013. Grasslands reported that no individuals of *Physaria obcordata* or *Physaria congesta* were documented during the field survey. The nearest known *P. obcordata* occurrence is located approximately 6 miles southeast of the proposed well pad in the Yellow Creek drainage. The nearest known *P. congesta* occurrence is located approximately 8.5 miles southeast of the proposed well pad in the Yellow Creek drainage. Approximately 96 acres were mapped as Moderate habitat, 206 acres were mapped as Marginal habitat, and the remaining 73 acres were observed to be non-habitat (Grasslands 2013).

The 100-meter survey area for BLM-sensitive species covers approximately 27 acres. No BLM sensitive plant species were documented within this area. Narrow-stem gilia (*Gilia stenothrysa*) had previously been documented in the Greasewood Creek drainage approximately 1 mile

northeast of the proposed well pad. *Gilia stenothrysa* was documented to occur on the south-facing slopes of three drainages approximately 400-700 meters north of the proposed well pad.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Due to the distance from occupied special status plant species habitat there should be no conceivable direct impacts. Construction of the pad and associated access route may potentially remove pollinator habitat and nesting sites causing indirect impacts to the species. Most pollinators that visit the twinpod are generalists that are not likely to travel more than 0.6 miles from the nesting site (Tepedino 2009). Fugitive dust may also indirectly impact the pollinator species by negatively affecting plant reproduction through stigma competition. Dust inhibits pollen transfer by coating the stigma. Finally, if the *Physaria* species were to colonize any of the suitable habitat near the Proposed Action, the fragmentation of the surrounding vegetative communities may impact the new populations. Some impact may include an increase in non-native species invasion, fragmentation of pollinator habitat, and possible increase of human disturbance because of easier access on roads used by energy proponents.

Cumulative Effects: The construction of this well pad and associated access road will cumulatively increase the fragmentation of the natural communities by 4.3 acres. However, there is very little existing disturbance within 600 meters of the Proposed Action. With ground and vegetation disturbance there may be the potential in an increase of a non-native or exotic plant species in the project area. Habitat of the *Physaria* species is limited to specific geologic formations and any invasions of non-native species could potentially negatively impact suitable habitat. There is a high potential for *Gilia stenothrysa* to expand its' range into the project area if disturbance were not to occur.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to special status plant species or associated habitats under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances under the No Action Alternative.

Mitigation: If the project is not initiated within 3 years of the biological survey, all suitable habitat must be re-surveyed. The results of the survey must be provided to the BLM before further ground disturbing activities occur. If occurrences of either federally threatened *Physaria* plant species are found to occur with 600 m of the Proposed Action, then Section 7 consultation with the U.S. Fish and Wildlife Service must be initiated. The results of the consultation may require further mitigation measures to be implemented in the project design.

Finding on the Public Land Health Standard #4 for Special Status Species: The proposed and No-Action Alternatives are not expected to affect populations or habitats of plants associated with the Endangered Species Act or BLM sensitive species if mitigation measures are followed and should have no influence on the status of applicable Land Health Standards.

MIGRATORY BIRDS

Affected Environment: The proposed well pad and access road are broadly encompassed by a greasewood and low density sagebrush community surrounded by pinyon-juniper woodlands on the adjacent hillsides. These communities provide nesting habitat for a number of bird species during the breeding season (typically mid-May through mid-July).

The BLM lends increased management attention to migratory birds listed by the FWS as Birds of Conservation Concern (BCC). These are bird populations that monitoring suggests are undergoing range-wide declining trends and are considered at risk for becoming candidates for listing under the Endangered Species Act if not given due consideration in land use decisions.

Three PJ associated species which likely occur in the project area and are considered BCC include juniper titmouse, Cassin's finch, and pinyon jay. The titmouse and finch occur widely in virtually all available woodlands, but at relatively low densities. Pinyon jays are loosely colonial nesters and are patchily distributed throughout the WRFO's woodlands. This species is reportedly an aggressive and persistent re-nester. Birds of Conservation Concern associated with the greasewood and sagebrush habitats is limited to the BLM-sensitive Brewer's sparrow, which is addressed in the Special Status Animal Species section.

The development of reserve pits that contain drilling fluids have attracted migratory bird use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would initially remove approximately 4.9 acres of greasewood and low density sagebrush communities with minor pinyon-juniper involvement. Following natural succession regimes, these communities would take anywhere from 20-30 years (greasewood and sagebrush) and up to 100 – 400 years (depending on age of PJ) to return to preconstruction conditions following reclamation. Prompt and effective pad reclamation would likely enhance forage and cover availability for certain species.

Impacts to migratory birds would vary depending on construction timeframes. Construction during the winter months would effectively avoid any direct impacts to nesting activities. If drilling activities extend into the spring or summer months returning birds would select nest sites in the face of ongoing activities. Should construction activities be initiated during the nesting season (typically mid-May through mid to late-July) there would be greater potential to influence nesting activities/outcomes including bird displacement, nest abandonment, and possible nestling mortality. Activities (pad construction, drilling, increased vehicle traffic) which take place during the breeding season may indirectly influence an additional 32 acres (area within 100 meters of the proposed pad and access road) of functional forage and nesting habitats due to reductions in nest densities and avoidance of habitats associated with increased human activity, vehicle traffic, and construction activities.

It has been brought to the BLM's attention that in certain situations migratory birds have contacted drilling or frac fluids (i.e., stored in reserve pits) during or after completion operations

and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with frac and drilling fluids that may pose a problem.

Cumulative Effects: The Proposed Action is not anticipated to add substantially to existing or proposed disturbances. Currently, there is very little oil and gas-related disturbance in or around the project area. The nearest well pad is separated from the Proposed Action by an intervening ridge and approximately 6.5 miles. The project area is already heavily utilized by livestock, which has most likely already contributed to a decrease in nest densities in the area through understory degradation and trampling. The loss of roughly 4.9 acres of greasewood and sagebrush habitats is not anticipated to have a measureable influence on local bird populations as there is considerable suitable habitat adjacent to the project area. Following interim reclamation, only 1.6 acres would remain disturbed for the long-term. Prompt and effective reclamation would promote a healthier, diverse plant community which may potentially benefit local wildlife populations as a whole.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to migratory bird species or important habitats under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances under the No Action Alternative.

Mitigation:

1. Vegetation removal associated with well pad and access road will take place outside the migratory bird nesting season of May 15 through July 15.
2. Although reserve pits are not planned with this project, in the event that they are built the operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to migratory waterfowl, shorebirds, wading birds and raptors during completion and after completion activities have ceased. Methods may include netting or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the methods that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion.

TERRESTRIAL WILDLIFE

Affected Environment: The lower elevation PJ and sagebrush/greasewood communities that encompass the project area are categorized by Colorado Parks and Wildlife as big game winter range. This area typically receives the heaviest use by big game from October through April.

Mature components of PJ woodlands and rock outcrops which surround the proposed pad location may provide suitable nest substrate for woodland raptors (accipitrine and buteo species, long-eared and saw-whet owls) and golden eagles. Much of the woodlands surrounding the proposed location are open-canopied, even-aged stands which typically provide less than adequate nesting habitat.

The distribution and abundance of small mammal populations are poorly documented within the Resource Area. Recent trapping efforts undertaken throughout Piceance Basin indicate a high tendency in both sagebrush and PJ communities for more generalized species such as deer mouse and least chipmunk and it is suspected that these species would be relatively abundant in the project area. There are no small mammal species that are narrowly endemic or highly specialized species known to inhabit the project area.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action would remove approximately 4.9 acres of predominately greasewood and low density greasewood communities that provide forage and cover resources for local wildlife populations. Following interim reclamation 1.6 acres would remain disturbed for the life of the project. With successful reclamation the greasewood and sagebrush communities could take up to 30 years and pinyon-juniper could take up to 100 - 400 years to return to preconstruction conditions.

Should construction activities take place during the winter months there would be greater potential to displace big game as both deer and elk tend to congregate in the surrounding lower elevation PJ and grassland/sagebrush habitats during these time frames. Increased vehicle traffic, noise and human activity, particularly during the construction and drilling phase would have the greatest potential to displace local wildlife (contributing to increased energetic demands); however, due to the limited amount of activity in the surrounding area, it is suspected that local big game populations would have adequate forage and cover resources available. Local wildlife would be expected to return to the area once drilling has ceased. Of greater consequence is the fact that the Proposed Action represents a new intrusion in an otherwise undeveloped area, particularly in important big game winter ranges. While development of this one well pad will not likely have substantial influence on local big game populations, future increased and expansive development throughout the area has the potential to negatively impact big game.

PJ woodlands and rock outcrops within 0.25 miles (PJ) and 0.5 miles (cliffs) of the project area and access routes were surveyed for raptor use on June 13, 2012. A dilapidated unknown raptor nest was located in a rock out crop 1.3 from the proposed site approximately 150 meters from the road. Although this nest is located along the access route, the condition of the nest suggests the area has not been utilized by nesting raptors recently. Further, the distance for the nest from the road and availability of adjacent nesting sites, limits impacts to nesting raptors. An active golden eagle nest was located approximately two miles from the proposed pad location and a quarter mile from County Road 89 (the proposed access route from State Highway 64) high on the cliffs adjacent to the road. Due to the distance of the project area form the nest and that access follows an existing road, it is unlikely that construction-related activity would negatively impact the behavior of the adults at the nest. Activities taking place during the winter months would have no direct influence on raptor nesting activities. Should drilling activities extend into early spring,

returning birds would select nest sites in the face of ongoing activity. However, this may indirectly influence site selection as birds would likely tend to avoid functional habitats in close proximity to disturbances.

Cumulative Effects: The Proposed Action in and of itself is not anticipated to contribute substantially to existing or proposed disturbances, nor is expected to have any measureable influence on local wildlife populations. While this would represent an incremental loss in big game winter range, there is extremely limited development in the vicinity of the project area (the nearest well pad is separated from the Proposed Action by an intervening ridge and approximately 6.5 miles) and the area is already heavily utilized by grazing livestock. Although unknown at this time, the potential for future development is probable. Important big game wintering ranges throughout the Piceance Basin are currently experiencing heavy oil and gas-related development. Increased and expansive development in this area would be expected to contribute to reductions in important big game wintering habitat with potential negative consequences for local big game populations.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no direct or indirect impacts to terrestrial wildlife species under the No Action Alternative.

Cumulative Effects: There would be no contribution to previous or existing disturbances that would potentially impact terrestrial wildlife species or habitats under the No Action Alternative.

Mitigation: None.

Finding on the Public Land Health Standard #3 for Plant and Animal Communities: The Land Health Standards for animal communities are currently being met in the project area. Neither the Proposed nor No Action Alternatives are expected to detract from the continued meeting of the Land Health Standards.

WILD HORSES

Affected Environment: This Project Area is located in the Greasewood Gulch portion of the Piceance-East Douglas Herd Management Area (HMA). The project consists of approximately 5 acres of initial disturbance in the 190,130 acre HMA. This portion of the HMA, which contains prime year-round wild horse habitat is primarily comprised of the following grass species: basin wildrye; slender, bluebunch, streambank and western wheatgrasses; native bluegrasses; bottlebrush squirreltail, and needle and thread. Additionally, this area is primarily comprised of the following shrub species: big sagebrush, rabbitbrush, and fourwing saltbush. Further, this area is primarily comprised of the following forb species: western yarrow, bladderpod, daisy fleabane, scarlet globemallow, Indian paintbrush, buckwheats, and scarlet gilia. The project is located in the valley bottom but pinyon-juniper woodlands are further up the side slopes and out on the ridge tops. Pinyon-juniper woodlands provide cover habitat required by wild horses. Use of this cover type is more predominant during the summer months for shade and during severe

winter storms. Forage competition between wild horses, livestock, and wildlife species exists throughout the Project Area.

The movement of wild horses in the HMA is largely influenced by seasonal factors, fences, access to water supplies, and available forage. Wild horses tend to concentrate on windswept ridges and south-facing slopes during periods of deep snow. During summer and early fall, water availability influences wild horse movement. Fences used to control livestock or built as exclosures can deter the free-roaming behavior of the herd and are not allowed.

The Appropriate Management Level (AML) range for the HMA is 135-235 wild horses. Based on a partial inventory in 2012 and population models for the herd a current estimated population for this herd is around 300 animals. To maintain the AML, the BLM occasionally gathers wild horses and offers them to the public through an adoption program. The next wild horse gather for this HMA may occur in the fall of 2015.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The proposed well location and associated access road could affect this wild horse herd; however, the Proposed Action is not expected to impact the herd population to drop to levels below the AML range of 135-235 wild horses. Impacts to wild horses from oil and gas development have not been widely studied or documented. Inferences regarding potential impacts to wild horses utilizing the portion of the HMA associated with this Project Area are largely based on anecdotal information and observations of the effects of oil and gas activities on the herd, and on known impacts to other large mammals (e.g., mule deer and cattle) that are dependent upon similar habitats and also forage within the Project Area.

Implementation of the Proposed Action could result in direct and indirect impacts to wild horses in the Project Area. Surface-disturbing activities associated with the proposed well and access road would result in the direct impact of the initial loss of approximately 5 acres of forage in the portion of the HMA in the Project Area. For horses that do not avoid development activities, cattle guards, where installed, could increase the potential for injuries to wild horses (e.g., hooves and legs caught in or through the brace assembly). Further, increased traffic on access roads in the Project Area could also raise the potential for harassment of, and vehicle collisions with, wild horses. Increased traffic on Project Area roads could also result in young foals becoming dislocated from their mares. Impacts to wild horses would likely be greatest if increased human presence associated with construction, drilling, and completion activities were to take place during the foaling period (March 1 through June 15) or during the next potential gather. The Proposed Action would result in short-term displacement of resident wild horses (bands) during project activities, however, no long-term effect of the Proposed Action on distribution or normal drift/movement is expected to occur.

Successful interim reclamation would be realized on about all but 2 acres (or 40 percent) of the estimated 5 acres of total initial surface disturbance. Successful final reclamation on the remaining acreage would restore the lost wild horse habitat and forage in the long-term.

Cumulative Effects: Combined with other ongoing development activities, the Proposed Action may begin to contribute to an increasing impacted wild horse herd within the HMA.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Under the No Action Alternative, impacts to wild horses resulting from ongoing energy development activities under this Proposed Action would remain unchanged from current levels and trends.

Cumulative Effects: No cumulative impacts have been identified.

Mitigation:

1. Prior to surface-disturbing activities, Yates and/or their contractors should determine if wild horses are present in the vicinity of proposed development sites. During the spring foaling period, between March 1 and June 15, if BLM determines wild horses are in the vicinity of proposed development, development activities may be delayed for a specified 60-day period from within the window of March 1 through June 15, as outlined by the White River ROD/RMP, to reduce impacts during this sensitive time period.

2. Further, project activities may need to be adjusted around a wild horse gather if scheduled during the same time as the gather.

3. The lessee may also be required to perform special conservation measures within this area including: a) habitat improvement projects in adjacent areas, if development displaces wild horses from critical habitat; b) replacement of disturbed watering sites with an equal source of water having equal utility; and c) activity/improvements providing for unrestricted movement of wild horses between summer and winter ranges.

4. To minimize the incidents of foals becoming dislocated from their mares the employees associated with this project would be required to slow or stop when wild horses are encountered thereby allowing bands to move away at a pace slow enough that the foals can keep pace and are not separated.

CULTURAL RESOURCES

Affected Environment: The proposed well pad access road and well pad have been inventoried at the Class III (100 percent pedestrian) level (Darlington 2012, compliance dated 10/5/2012) resulting in re-evaluation of five known sites, or linear site segments plus identification of one new site. Two sites were officially determined to be ineligible for nomination to the National Register of Historic Places (NRHP), one site was determined to be eligible for nomination to the NRHP and three were determined potentially eligible pending further evaluative testing. The proposed access road is also marked as Rio Blanco County Road 89 which receives some annual maintenance by the county.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: One site is completely avoided by all aspects of the proposed access road and well pad and there will be no impacts to it. Two sites are partially overlain by modern road and agricultural developments and it does not appear likely that they will be

impacted by any oil and gas related developments. Three sites appear to be adjacent to the planned access to the well pad however; they do appear to be avoided by the proposed access road.

The increased human presence and activity in the area could potentially result in impacts to cultural resources from unauthorized collection of surface artifacts or possible some hole excavations as visitors look for artifacts.

Cumulative Effects: These impacts would be long term, irreversible and irretrievable and constitute an overall loss to the regional archaeological database.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no new development related impacts to any cultural resources in the projects area of potential effect (APE) under the No Action Alternative. Any new loss of archaeological values would be the result of the natural weathering processes in the area.

Cumulative Effects: Cumulative effects would be limited to whatever losses occur as a result of natural weathering or any unauthorized collecting that might occur as a result of casual use of the area. These losses are likely slow but are irreversible and irretrievable for the regional archaeological database.

Mitigation:

1. The operator 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. The operator 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. The operator, 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 operator 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), the operator 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 access route and well pad will intersect geologic formations as mapped by the United States Geologic Survey. The access route in Township 2 North, Range 98 West, Sections 4, 9 and 17 will cross Quaternary alluviums. A small portion of the access route in T 2 N, R 98 W, Sections 15 and 16 will cross the Parachute Creek Member of the Green River Formation. The well pad location and the rest of the access road will be in the Uintah Formation (Tweto 1979). Within the BLM, WRFO Quaternary alluviums are classified as a Potential Fossil Yield Classification (PFYC) level 1 formation meaning that they are not known for producing fossils, whereas the Parachute Creek member of the Green River Formation is a PFYC 5 formation and the Uintah Formation is also a PFYC 4/5 formation. PFYC 4 and 5 formations are known to produce scientifically noteworthy fossils, including vertebrate fossils such as mammals, fish and various amphibians (Cc. f. Armstrong and Wolny1989).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: If it becomes necessary to excavate into the underlying sedimentary rock formation to level the well pad or excavate the reserve/blooie/cuttings pit, there is a relatively high potential to impact scientifically noteworthy fossil resources. Excavation would destroy the context any fossil might be found in as well as potentially breaking or crushing any fossils that might be present, especially smaller fossils such as fish, or smaller mammals.

Unauthorized collection of fossils could occur due to increased human activity in the area if fossils are exposed during excavation and left exposed on the surface prior to examination by a paleontologist or interim reclamation.

Cumulative Effects: Should fossil resources be exposed or impacted by construction related to the development of the well and its supporting infrastructure it would result in an irreversible and irretrievable loss of scientific data to the regional paleontological database. The magnitude or severity of the loss would depend upon the nature of the fossils and their context that is impacted.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: There would be no new development or construction related impacts to fossil resources under the No Action Alternative. Natural weathering and erosion would be the principal impacts along with some limited unauthorized colleting from casual visitors to the area. Smaller, more fragile fossils would likely be most seriously impacted by erosion as the fossils are easier to move during wind or rain events. Smaller fossils are also easier to remove than larger fossils if a collector recognizes them as fossils

Erosion has been part of the natural process for centuries and would continue as it has resulting in a very slow loss of scientific data unless paleontologists regularly scout the area for fossils. Some loss could be reduced if unauthorized collection by casual visitors could be completely eliminated however, that seems unlikely so an unknown loss to collection will continue to occur.

Cumulative Effects: There would continue to be a very slow irreversible and irretrievable loss of scientific paleontological data but not as severe as would be the case if development were to occur in the area.

Mitigation:

1. The operator 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 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 operator 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 stone 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. 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 VRM objectives were established in the 1997 White River ROD/RMP. VRM Class I is the most restrictive with VRM Class IV being the least restrictive. The Proposed Action is located within a VRM Class III 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 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 adjacent to unsurfaced Rio Blanco County (RBC) Road 89, the key observation point, which follows the bottom of Greasewood Gulch in the lower portion of the drainage at approximately 5,975 feet elevation. The existing character of the landscape is largely natural with very few signs of human development. The enclosed-type landscape and

dominant form visual element is defined by the Greasewood Gulch drainage which consists of an approximately 400 foot wide, flat valley bottom with pale buff-colored convex slopes that rise 200-400 feet above the project area. The flat valley bottom vegetation consists of sage brush, grasses, and other mountain shrubs. An unnamed dry smaller drainage joins the primary Greasewood Gulch drainage at the project site from the south. Dark green scattered pinyon-juniper on the slopes contrasting with the exposed buff colored soils provides the dominant texture element to the landscape.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The initial disturbance during construction includes the 554 foot proposed access road and the well pad for a total of 4.9 acres. The exposed soils and linear road disturbance will create short term moderate impacts to the landscape characteristics from the key observation point of RBC Road 89. After interim reclamation is completed this disturbed area will be reduced to 1.6 acres, which will lessen the long term visual impact of the road and well pad area by reducing the size of the disturbance. Temporary above ground structures and support vehicles may cause moderate short term impacts to visuals resources but the duration is expected not to last longer than six months after initial construction begins. Permanent above ground structures could cause a moderate long term impacts to the visual resources if not mitigated. To reduce this impact, the recommended mitigation is to paint all permanent above ground structures (on-site for six months or longer) including pumping tanks and tank batteries Shale Green according to the BLM Standard Environmental Chart CC-001: June 2008. Overall, the Proposed Action will result in weak long term impacts to visual resources but the existing character of the landscape will be retained.

Cumulative Effects: There are no visual impacts to the characteristic landscape identified within 2.5 miles of the Proposed Action. It is anticipated that the Proposed Action, if mitigated as recommended, will have a sight incremental impact to visual resources in the area, but will still meet Visual Resource objectives.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Because no well would be drilled, no pad would be built, and no access road constructed there would be no impact to visual resources.

Cumulative Effects: No additional impacts identified.

Mitigation:

1. Paint and maintain paint on all permanent above ground structures (on-site for six months or longer), including pumping tanks and tank batteries, etc. *Shale Green* according to the BLM Standard Environmental Chart CC-001: June 2008.

HAZARDOUS OR SOLID WASTES

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored, or disposed of at sites

included in the project area. Most of the exploration and production wastes that would be generated by the Proposed Action would be exempt from the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations (e.g., produced water, produced gas). However, the exemption would not mean that these wastes present no hazard to human health and the environment, nor would the exemption relieve the operator from corrective action to address releases of exempt wastes. Non-exempt wastes such as lubricants, fuels, caustics or acids, and other chemicals would be used during exploration and production activities and solid waste (e.g., human waste and garbage) would be generated during the proposed activities.

The operator has not specified the chemicals that would be used for drilling, completion, and hydraulic fracturing. Constituents found in hydraulic fracturing fluids may include salts, acids, petroleum hydrocarbons, and numerous other additives. The concentrations of these constituents are not well documented.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain hazardous constituents, they would be stored, used, and transported in a manner consistent with applicable laws such that generation of hazardous wastes is not anticipated. Solid wastes would be properly disposed of off-site at an approved facility.

Accidental releases associated with equipment failures, equipment maintenance and refueling, and storage of fuel, oil, other fluids, and chemicals could cause soil, surface water, and/or groundwater contamination. Improper management of pit contents may also contribute to environmental contamination. Releases of produced water would present the greatest threat for widespread impacts. The high salinity of produced water may affect plant growth due to the high osmotic pressure of the soil solution, affecting existing vegetation adjacent to pads and greatly reducing the chance for successful reclamation. High salinity may also impact surface or ground water through run-off or leaching. The sodicity (i.e., excess sodium) of produced water causes deterioration of the soil structure, thereby increasing the potential for soil erosion and reducing the chances of reclamation success. With implementation of the mitigation measures and adherence to the COAs, impacts would likely be temporary.

Since not all chemicals that would be used on the site have been disclosed, specifically chemicals or other additives used for drilling, completion, and hydraulic fracturing operations, impacts to groundwater may occur. These chemicals and additives can also be present in the reserve pit after it is closed, as well as in drill cuttings within the cuttings pit. With proper well completion, implementation of the mitigation measures and adherence to the COAs, impacts to aquifers above the producing zone are unlikely.

Cumulative Effects: Oil and gas exploration and development, and chemicals used for livestock and rangeland management are the principal sources of hazardous and solid wastes in the upper Fletcher Gulch Watershed. Down towards the confluence of Fletcher Gulch and the White River, agriculture and human habitation also contribute. Proper implementation of the surface use plans and adherence to the COAs would greatly reduce any contribution from the

Proposed Action to cumulative adverse effects from hazardous and solid wastes on human health and/or the environment. Nonetheless, the Proposed Action is expected to contribute incrementally to release of hazardous and solid waste in the watershed.

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: The No Action Alternative would not contribute to cumulative effects from hazardous or solid wastes in the area of analysis.

Mitigation:

1. Comply with all Federal, State and/or local laws, rules and regulations, including but not limited to onshore orders and notices to lessees, addressing the emission of and/or the handling, use, and release of any substance that poses a risk of harm to human health or the environment. All spills or leakages of oil, gas, produced water, toxic liquids or waste materials, blowouts, fires, shall be reported by the operator in accordance with the regulations and as prescribed in applicable orders or notices.

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. Construction sites and all facilities shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

6. As a reasonable and prudent lessee/operator in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way holders will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a

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

7. As a reasonable and prudent lessee/operator and/or right-of-way holder in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way 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 right-of-way 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.

LANDS WITH WILDERNESS CHARACTERISTICS

Affected Environment: During the development of the White River Field Office Oil and Gas Development Draft Resource Management Plan Amendment (RMPA) and Environmental Impact Assessment (EIS), the BLM completed an initial review of its lands within the field office to determine which, if any, areas possess wilderness characteristics. This review included only BLM lands and did not include existing Wilderness Study Areas (WSAs). Lands exclusively within existing WSAs were not analyzed; however, lands with potential wilderness characteristics outside or adjacent to Wilderness Study Areas (WSAs) were assessed following BLM Manual 6310. Areas evaluated for wilderness character consisted of roadless areas greater than 5,000 acres or roadless areas less than 5,000 acres adjacent to a WSA. These areas are currently being inventoried to determine if they meet the criteria for being considered a land with wilderness character (LWC), which includes areas that exhibit "naturalness" and provide opportunities for solitude and primitive and unconfined types of recreation. The Proposed Action does occur in an area identified as containing wilderness characteristics, LWC Polygon #13-Blair Mountain /Greasewood (36,900 acres). Please refer to the *White River Field Office Oil and Gas Development Draft RMPA/EIS, Section 3.9 and Section 4.9* for a more detailed discussion of how polygons potentially containing wilderness character were identified and inventoried.

LWC Polygon 13 is located approximately 25 miles west of Meeker, CO on the south side of State Highway 64. General geography of this vast unit consists of Blair Mesa, lower Yellow Creek, Barcus Creek, Greasewood Creek, and Calamity Ridge. The southern boundary follows Rio Blanco County (RBC) Road 122 (Calamity Ridge) beginning at the intersection with BLM road 1036 (Monument Gulch). The border then travels northeast along BLM Road 1832 (Barcus Creek) until it reaches BLM Road 1287 (Yellow Creek). This border has a cherry stem around a portion of BLM 1033 (N Barcus Creek) up to where BLM 1832 turns into RBC Road 88 (Barcus). At Yellow Creek the border follows RBC Road 88 until it reaches Piceance State Wildlife Area where the border travels to BLM Road 1103. This continues to an intersection with a power line traveling northwest. Where BLM Road 1103 intersects the power line the border is brought to the inside of the power line and continues along that road until intersecting

with the power line again. Then at RBC Road 89 the border continues south until the intersection with BLM 1250. RBC Road 89 has two cherry stems to access private land, one following Greasewood Creek and the other continuing along RBC Road 89. The border continues to travel northwest until reaching BLM 1035 (Greasewood). This then brings the border south west to the intersection with BLM 1036 (Monument Gulch). From this point BLM 1036 (Monument Gulch) returns to the intersection with RBC Road 122 (Calamity Ridge).

Environmental Consequences of the Proposed Action:

Direct and Indirect Effect: The proposed well pad and access road would affect the size of Polygon 13. LWCs must be roadless and therefore the boundaries of Polygon 13 would need to be "cherry stemmed" around the new disturbed area. This would result in a long term 1.6 acres in reduction to the size Polygon 13. Because the minimum size characteristics for LWCs is 5,000 roadless acres, Polygon 13 would be reduced in size as a result of implementing the Proposed Action, but Polygon 13 would still meet the minimum size characteristic to be a LWC polygon. The wilderness characteristics of naturalness and the outstanding opportunity for solitude would be affected in the areas directly adjacent to the well pad and potentially the access road. However, not every acre of each polygon needs to possess these characteristics, just the polygon as a whole. Because of the large size of Polygon 13, the characteristics of naturalness and the outstanding opportunity for solitude would not be affected for the polygon as a whole as a result of implementing the Proposed Action.

Cumulative Effects: Combined with other existing and potential future effects to the boundaries of LWC Polygon 13, the Proposed Action could result in cumulatively affecting one or more of the wilderness characteristics in the future. There are currently no identified cumulative effects anticipated at this time that would result in LWC Polygon 13 not possessing wilderness characteristics.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: By not implementing the Proposed Action, there would be no impacts to LWCs.

Cumulative Effects: None identified.

Mitigation: None.

RANGELAND MANAGEMENT

Affected Environment: The entire proposed project is on public land within the Greasewood livestock grazing allotment (#06036). This allotment contains a total of 29,942 acres of public land. Grazing use within this allotment occurs in the spring from 4/16-6/30 and in the fall from 11/1-1/20 yearly. The total disturbance on public lands within this allotment would be 4.3 acres. There are no rangeland improvement projects within the vicinity of the proposed well pad and access road.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Until disturbed areas are successfully reclaimed there would be a short term loss of less than one AUM in the Greasewood allotment. There would be a longer-term forage loss associated with the 1.6 acres of pad surface that would not be reclaimed for the life of the pad. The short-term forage loss within the allotment would be far less than the annual fluctuation in forage production, and is not expected to result in any need for changes in livestock numbers or grazing periods. Interim reclamation of disturbed areas would likely offset the short-term forage loss on the allotment within two to three years through increased herbaceous production above current production levels. Some impacts to livestock may occur if construction occurs during the authorized livestock use period, as livestock are displaced due to activity, it is expected that displacement would be short term, livestock would habituate to activity in the area and normal grazing patterns would resume.

Cumulative Effects: Agriculture, road development, and oil and gas development which have the potential to impact rangeland management would continue to occur. The Proposed Action would remove forage temporarily in the Greasewood allotment. After project construction has been completed and grass/forb communities have returned the Proposed Action would contribute to a broader grass/forb dominated site that would provide additional forage for livestock in the area. Implementation of the Proposed Action in conjunction with existing and future uses is not expected to impede or affect the proper management of livestock on rangelands within the grazing allotment in which the Proposed Action occurs.

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, and oil and gas development would continue to occur in the area, which has the potential to impact rangeland management by removal of forage, impacts to range improvements, etc.

Mitigation:

1. Any range improvement projects such as fences, water developments, or other livestock handling/distribution facilities that are damaged or destroyed as a direct or indirect result of implementation of the Proposed Action shall be promptly repaired or replaced by the applicant to restore pre-disturbance functionality.

See the Vegetation section of this document for additional mitigation.

FLOODPLAINS, HYDROLOGY, AND WATER RIGHTS

Affected Environment: Drainage patterns around the pad site, stormwater and the improved access roads have been considered in the designs submitted with the surface use plans. Executive Order 11988 requires BLM to avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and

indirect support of floodplain development wherever there is a practicable alternative. East Greasewood Creek is an ephemeral drainage with a limited defined channel and a large contributing area. The access road will cross this channel and a tributary to East Greasewood Creek before the pad. Portions of the proposed drilling pad and the access road are in the floodplain for East Greasewood Creek. Yates estimates that 55,000 barrels of freshwater will be used for construction, drilling and completion of the well. According to the surface use plan of operations this water will hauled from Piceance Creek. Depending on the time of year this location should have adequate water rights to supply this need, but if it doesn't Yates will submit via sundry another location that has adequate water rights to supply this need.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: Yates has included estimates for freshwater use and the potential sources and water rights planned to supply this freshwater. Since freshwater use would be within existing valid water rights no impacts are expected to other water rights in Piceance Creek.

Direct impacts to floodplains from the pad would be to constrain the floodplain near the pad site during storm events. Assuming adequate engineering is employeed the 10-year event should pass through the pad site without damage. There may be some changes to sediment depositional areas moving some of these areas downstream. The 25-year event may cause minor damage that can be repaired easily but should not result in damage to infrastructure or result in a major construction or clean-up effort. Once the pad goes into interim reclamation the 50-year storm should pass without washing out the road or inundating the production equipment. Final reclamation should approximate original contours in a stable and non-erosive setting and there should be no long-term impacts to the floodplain after the original channel is re-constructed and stabilized. Inadequately sized culverts may cause impacts to infrastructure and lead to unnecessary erosion, impacts to hydrology and floodplains.

Cumulative Effects: Well pads in the general area of the Yellow Creek 5th-Level Hydrologic Unit Code are within the Mesaverde Play Area and are likely to have 2-3 multiple well pads per section. Extensive development of natural gas is foreseeable in this area. Livestock grazing and dispersed recreation 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. No other impacts other than oil and gas development, livestock and reclamation are expected in Yellow Creek. In general, soil disturbance in the Proposed Action and other activities may lead to increased erosion and increased salt or sedimentation loading.

Direct and Indirect Effects: Floodplains, water rights, hydrology would not 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. The proposed 18-inch culvert on the tributary to Greasewood Creek for the access road should be increased to at least a 24-inch culvert to allow for adequate passage of floodwaters.

RECREATION

Affected Environment: The proposed project area is located within the White River Extensive Recreation Management Area (ERMA) on BLM lands administered by the WRFO. The WRFO manages the ERMA to provide for unstructured recreation activities, and a diversity of outdoor recreation opportunities, including hunting, dispersed camping, hiking, horseback riding, wildlife viewing, and off-highway vehicle (OHV) use are to be maintained and protected.

On BLM-administered lands, the Recreation Opportunity Spectrum (ROS) is a classification system and a prescriptive tool used for recreation planning and management. ROS settings within the WRFO ERMA are not specified for the entire project area. However, the proposed project area most closely resembles a ROS class of Semi Primitive Motorized (SPM). The SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls and low interaction between users (but evidence of other users may be present). The SPM recreational experience is characterized by a high probability of isolation from the sights and sounds of humans within a setting that offers challenge and risk.

Current recreation activities in the project area include a moderate amount of elk and deer hunting during the fall with some minimal bear and lion hunting through the fall and winter. The Proposed Actions are located in Colorado Parks and Wildlife's Game Management Unit (GMU) 22. Other uses include a low amount of dispersed camping associated primarily with hunting and a low amount Off Highway Vehicle (OHV) use of the nearby roads and trails during the summer and fall. There are two valid Special Recreation Permits (SRP) for commercially guided big game hunting and 11 SRPs for commercially guiding Mountain Lion hunting in the project area. There are no known camp sites or OHV routes within the Proposed Action.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: During the construction phase of the Proposed Action it is anticipated that a short term increase in traffic along RBC Road 89 will occur. Overall, the upgrading to RBC Road 89 may improve recreational access to public lands in this area. This could affect recreationalist traveling RBC Road 89 to access hunting or OHV opportunities by increasing travel time or negatively affecting the quality of the hunting experience during the construction phase, but may provide positive long term affects to recreationalists after the construction phase as a result of an improved road to access public lands. See the Transportation Section for more information on traffic. The well drilling and associated construction activity may produce noise that affects the quality of the hunting experience for the short six month duration of the construction period. After interim reclamation and during the production phase

there will be a loss of 1.6 acres of dispersed hunting. Overall, the settings and experiences of the SPM ROS classification will be met.

Cumulative Effects: This largely natural landscape has very few developments or existing impacts to recreational experiences. After the construction phase the Proposed Action may result in improved access to public lands with the upgrading of RBC Road 89. This could result in an increase in recreational use in this area which currently receives a low to moderate amount of use.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: Because the well pad would not be built and no access road constructed, there would not be any short term impacts to recreational experiences or recreationalists. However, by not upgrading RBC Road 89 access to public lands in this area would remain the same and not be improved.

Cumulative Effects: No additional impacts were identified.

Mitigation: None.

ACCESS AND TRANSPORTATION

Affected Environment: The Proposed Action is located approximately 30 miles east of Rangely, CO. Access to the area requires traveling 26 miles east of Rangely on State Highway 64 to the junction of RBC Road 89. Then travel 6 miles south on the unsurfaced RBC Road 89 to the 554 foot proposed access road. RBC Road 89 currently receives a low amount of use from recreational users, private property owners, grazing permitees, and administrative use. There are no duplicate or existing routes to the proposed well pad location. The proposed access road would cross the primary drainage of Greasewood Gulch and a smaller drainage from the south before reaching the well pad.

Environmental Consequences of the Proposed Action:

Direct and Indirect Effects: The Proposed Action includes upgrading and construction of 5.6 miles RBC Road 89 from State Highway 64 to the proposed access road. RBC Road 89 is proposed to be widened to a 14 foot running surface and graveled for all weather use. This will have a short term negative impact during the construction phase to those traveling RBC Road 89, but potentially a beneficial long term impact to those traveling RBC Road 89 by improving access to public lands. During the construction phase of the Proposed Action heavy equipment such as road graders, dozers, scrappers, semi-trucks, and water trucks will be traveling and working on the roads as well as all equipment and light truck traffic associated with well drilling. It is anticipated that the long term affect to traffic volume would be a slight increase after the construction period and during the production period with no increase after final reclamation. The proposed 554 foot access road is proposed to be graded and unsurfaced. If commercial production is established from this well, then the access road is proposed to be surfaced with gravel. This road is authorized for this specific use and purpose only and it temporary in nature. This road will be reclaimed to its original, natural condition when no longer needed for this use.

To inform the general public about this temporary road, it is recommended that the proposed access road have signage installed stating "Authorized Use Only-Temporary Access Road" at the entrance of the access road when this road is being constructed. There is a potential for roads and routes to be damaged if activities associated with the Proposed Actions occur when roads and routes are saturated. To prevent road damage as a result of use of these roads when they are saturated is it recommended that all activity cease when soils or roads surfaces become saturated to a depth of three inches. All roads and access improvements are required to conform to the BLM/USFS publication: Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Edition-Revised 2007 (also referred to as the 'Gold Book'), with further guidance in BLM Manual 9113-Roads Manual.

Cumulative Effects: Combined with the existing access and traffic on RBC Road 89, the Proposed Action is expected to have minor short term negative impacts to traffic flow with beneficial long term effects to both traffic flow and access to public lands.

Environmental Consequences of the No Action Alternative:

Direct and Indirect Effects: By not upgrading RBC Road 89 or building the well pad and access road there would be no short term or no long term effects to existing traffic and access to public lands.

Cumulative Effects: None identified.

Mitigation:

1. To inform the public about the nature of the access road, place and maintain signs stating "Authorized Use Only-Temporary Access Road" where the access road leaves RBC Road 89.

2. All construction activity shall cease when soils or roads surfaces become saturated to a depth of three inches unless approved by the Authorized Officer.

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TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED: None.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility	Date Signed
Bob Lange	Hydrologist	Air Quality; Surface and Ground Water Quality; Floodplains, Hydrology, and Water Rights; Soils	6/24/2013
Baili Foster	Ecologist	Areas of Critical Environmental Concern; Special Status Plant Species	6/24/2013
Heather Woodruff	Range Management Specialist	Forest Management	5/8/2013
Michael Selle	Archaeologist	Cultural Resources; Native American Religious Concerns; Paleontological Resources	11/20/2012
Tyrell Turner	Rangeland Management Specialist	Invasive, Non-Native Species; Vegetation; Rangeland Management	6/26/2013
Laura Dixon	Wildlife Biologist	Migratory Birds; Special Status Animal Species; Terrestrial and Aquatic Wildlife; Wetlands and Riparian Zones	6/19/2013
Aaron Grimes	Outdoor Recreation Planner	Wilderness; Visual Resources; Access and Transportation; Recreation,	6/4/2013
Kyle Frary	Fuels Specialist	Fire Management	6/17/2013
Paul Daggett	Mining Engineer	Geology and Minerals	6/9/2013
Janet Doll	Realty Specialist	Realty	6/11/2013
Melissa J. Kindall	Range Technician	Wild Horse Management	6/7/2013

Name	Title	Area of Responsibility	Date Signed
Brett Smithers	Natural Resource Specialist	Project Lead	7/16/13
Heather Sauls	Planning & Environmental Coordinator	NEPA Compliance	7/22/2013

ATTACHMENTS:

Figure 1. Project area map.

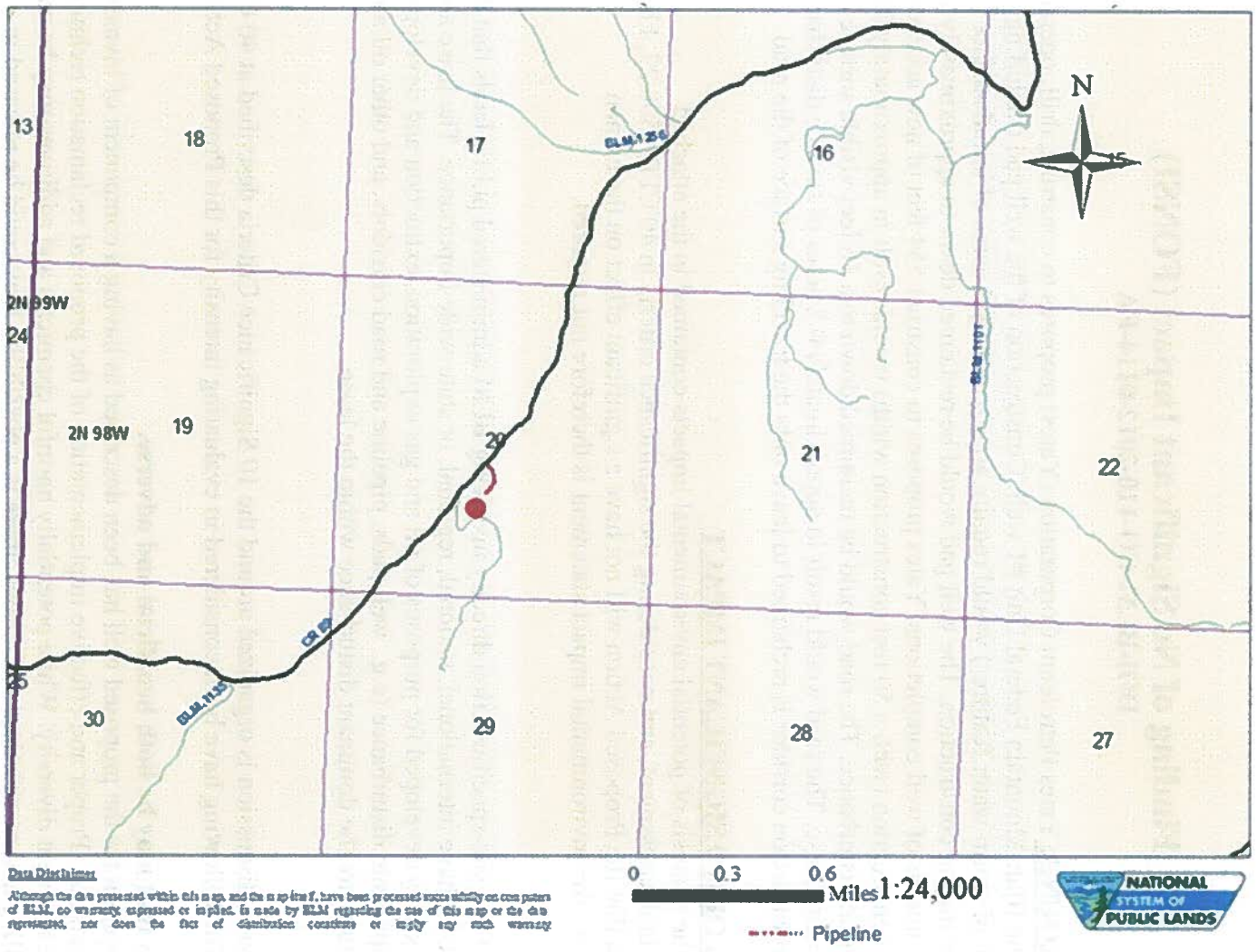

Figure 1. The figure above illustrates the geographic location of the proposed disturbance features. The proposed well pad is symbolized as a red dot and the proposed road corridor is symbolized as a red line.

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-110-2012-0114-EA

BACKGROUND: Yates Petroleum Corporation (Yates) proposes to construct, drill, operate and maintain the Blair Mountain Federal Unit #1 well. Construction of the well pad (including installation of storm water features) would require approximately 4 acres of initial surface disturbance during construction. The well pad would be reclaimed down to approximately 1 acre within six months of well completions. Yates proposes to construct 554 feet of new access road, and initial construction (with a 50 feet construction width) would result in approximately 0.6 acres of initial disturbance. The road would be reclaimed down to a 16 feet visible surface during the production phase. The road would result in approximately 0.2 acres of surface disturbance after the construction corridor is reclaimed to leave only the traveling surface of the road.

FINDING OF NO SIGNFICANT IMPACT
Based on the analysis of potential environmental impacts contained in the attached environmental assessment, and considering the significance criteria in 40 CFR 1508.27, I have determined that the Proposed Action will not have a significant effect on the human environment. An environmental impact statement is therefore not required.

Context
The project is a site-specific action directly involving BLM administered public lands that do not in and of itself have international, national, regional, or state-wide importance. The lease area has been extensively developed for purposes of oil and gas exploration, extraction and development, and anthropogenic disturbance (e.g., well pads, pipeline and road 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 site location for the proposed well has been described as having a component of invasive, annual cheatgrass. Proper and effective implementation of the proposed reclamation techniques could increase plant diversity. While potentially harmful chemicals and additives may be used during drilling and completions operations, there is a possibility they could be released in volumes that could adversely affect human health or the environment; however, the proponent provides for safe containment and disposal of each type of potential waste, and the use of these materials are expected to enhance the beneficial recovery of the natural gas resource.

2. The degree to which the Proposed Action affects public health or safety.
There would be no impact to public health and safety if the safety measures described in the operator's drilling plan and SUP are properly implemented, and the developed mitigation is adhered to.

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 wetlands, prime farmlands, parklands, or scenic rivers occur in the project area. A Class III Cultural Resource inventory identified one eligible and three potentially eligible cultural sites. Mitigation applied to this action will reduce, or avoid impacts to these sites.

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 during the public comment period.

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 review 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 have been evaluated and approved, 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 cheatgrass; implementation of the Proposed Action alone would not substantially contribute to the quality of the rangeland resources but an increase in construction-related oil and gas activities (reasonable but not yet proposed or speculated for the project area) could cumulatively result in irreversible changes to plant species composition.

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. A Class III Cultural Resource inventory identified one eligible and three potentially eligible cultural sites. Mitigation for cultural resources that may be exposed due to natural weathering has been provided. Moreover, it is assumed the mitigation applied to this action will reduce, avoid or illuminate impacts to these sites.

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

for Kent Walter

DATE SIGNED: 07/30/2013

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: Yates' Blair Mountain Federal #1 Well

ENVIRONMENTAL ASSESSMENT NUMBER: DOI-BLM-CO-110-2012-0114-EA

DECISION: It is my decision to implement the Proposed Action as mitigated in DOI-BLM-CO-110-2012-0114-EA, authorizing the construction, drilling, operation, and maintenance activities associated with the proposed Blair Mountain Federal #1 well.

MITIGATION:

1. Yates will limit unnecessary emissions from point or nonpoint 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. Yates will treat all access roads with water and/or a chemical dust suppressant during construction and drilling activities so that there is not a visible dust trail behind vehicles. Any technique other than the use of freshwater as a dust suppressant on BLM lands will require prior written approval from BLM.

3. To protect surface waters below the project area, 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. Provide adequate drainage spacing to avoid accumulation of water in ditches or on road surfaces.

4. Install culverts and low-water crossings with adequate armoring of inlet and outlet. Patrol areas susceptible to road or watershed damage during periods of high runoff.

5. Locate drainage dips and drainage ditches in such a manner as to avoid discharge onto unstable terrain such as headwalls or slumps. Provide adequate spacing to avoid accumulation of water in ditches or dips.

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 (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).

7. In addition to the design features included in the Proposed Action, the applicant shall use seed that is certified and free of noxious weeds. All seed tags will be submitted to the *designated Natural Resource Specialist* within 14 calendar days from the time the seeding activities have ended via Sundry Notice (SN). The sundry will include the purpose of the seeding activity (i.e., seeding well pad cut and fill slopes). In addition, the SN will include the well or well pad number associated with the seeding activity, if applicable, the name of the contractor that performed the work, his or 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, an estimate of the total acres seeded, an attached map that clearly identifies all disturbed areas that were seeded, and the date the seed was applied.

8. BLM recommends removing Inland saltgrass from the proposed seed mixture in the Surface Use Plan and replacing with Basin wildrye (*leymus cinereus*) at a drill seed rate of 3.5 lbs pure live seed per acre or utilizing BLM standard seed mix #5 listed below.

Seed Mix	Cultivar	Common Name	Scientific Name	Application Rate (lbs PLS/acre)
5	Magnar	Basin Wildrye	Leymus cinereus	3.5
	Rosana	Western Wheatgrass	Pascopyrum smithii	3.5
	San Luis	Slender Wheatgrass	Elymus trachycaulus ssp. trachycaulus	3
	Critana	Thickspike Wheatgrass	Elymus lanceolatus ssp. lanceolatus	3
	Timp	Northern Sweetvetch	Hedysarum boreale	4.5
	Maple Grove	Lewis Flax	Linum lewisii	1
	Alternates:*			
	Sodar	Streambank Wheatgrass	Elymus lanceolatus ssp. psammophilus	3
		Scarlet Globemallow	Sphaeralcea coccinea	0.5

9. Application rates included in the proposed seed mix are recommended for drill seed application. If drill seeding method cannot be implemented, seed should be broadcast at double the rate specified. Broadcast seed should be covered by harrowing or raking to ensure germination and establishment. Seeding should occur between September 1 and March 15.

10. Stripped topsoil shall be stockpiled for subsequent reclamation of unused areas on the well pad where it was originally removed. Properly store topsoil to protect it from erosion and compaction, assure that it remains readily identifiable (i.e., signed), viable, and available for redistribution during reclamation. Topsoil piles that will be stored for more than one month should be seeded with an approved BLM seed mix, stabilized with certified weed free erosion fabric or mulch, and may require fencing. When topsoil will be stored for more than one year and other resource values can be accommodated, topsoil will be stored in piles with a depth of two feet or less.

11. Applicant shall be responsible for reclamation of unused portions of well pads, including revegetation with a BLM-approved seed mix. Seed mixes planned for use in reclamation are provided as a design feature in the Proposed Action and are based on the ecological site defined by the soil map units within the project area.

12. If necessary to achieve successful reclamation, livestock shall be excluded from reclaimed areas. Fences, cattle guards, and gates (all built to BLM specifications per BLM manual H-1741-1) will be installed, maintained, and removed by the operator upon approval by the WRFO BLM. In specific and predetermined instances, livestock exclosures may be retained for extended periods to meet other resource objectives.

13. Upon final abandonment of well pads, 100 percent of all disturbed surfaces, including access roads, shall be restored to pre-construction contours to the extent practicable and revegetated. Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding, planting) and non-vegetative (material not harmful to wildlife, including straw bales and wattles, woody debris, biodegradable fabric) techniques. Monitoring and additional reclamation efforts shall persist until reclamation is proven successful, as determined by the BLM.

14. All equipment that may act as a vector for weeds shall be cleaned before entering the project area.

15. All seed placed on BLM lands will comply with United States Department of Agriculture (USDA) state noxious weed seed requirements and shall be certified by a qualified Federal, State, or county office as free of noxious weeds.

16. All straw, mulch, or other vegetative material used on site (e.g., for site stability or rehabilitation) shall be certified by a qualified Federal, State, or county office as free of noxious weeds or weed seed.

17. All sites shall be monitored and treated for noxious weeds on an annual basis for the life of the project until Final Abandonment has been approved by the BLM.

18. Application of herbicides shall comply with the *Vegetation Treatments on Bureau of Land Management Lands in 17 Western States Programmatic Environments Impact Statement* (EIS), and the WRFO Integrated Weed Management Plan (DOI-BLM-CO-110-2010-0005-EA).

19. Pesticide Use Proposals (PUPs) shall be submitted to and approved by the BLM before applying herbicides on BLM lands. The PUP will include target weed species, the herbicides to be used, application rates and timeframes, estimated acres to be treated, as well as maps depicting the areas to be treated and known locations of weeds.

20. All disturbed areas shall be revegetated as outlined in the mitigation measures related to *Vegetation,* and as directed by the AO.

21. If the project is not initiated within 3 years of the biological survey, all suitable habitat must be re-surveyed. The results of the survey must be provided to the BLM before further ground disturbing activities occur. If occurrences of either federally threatened *Physaria* plant species are found to occur with 600 meters of the Proposed Action, then Section 7 consultation with the U.S. Fish and Wildlife Service must be initiated. The results of the

consultation may require further mitigation measures to be implemented in the project design.

22. Vegetation removal associated with well pad and access road will take place outside the migratory bird nesting season of May 15 through July 15.

23. Although reserve pits are not planned with this project, in the event that they are built the operator shall prevent use by migratory birds of reserve pits that store or are expected to store fluids which may pose a risk to migratory waterfowl, shorebirds, wading birds and raptors during completion and after completion activities have ceased. Methods may include netting or other alternative methods that effectively prevent use and that meet BLM approval. It will be the responsibility of the operator to notify the BLM of the methods that will be used to prevent use two weeks prior to when completion activities are expected to begin. The BLM approved method will be applied within 24 hours after completion.

24. Prior to surface-disturbing activities, Yates and/or their contractors should determine if wild horses are present in the vicinity of proposed development sites. During the spring foaling period, between March 1 and June 15, if BLM determines wild horses are in the vicinity of proposed development, development activities may be delayed for a specified 60-day period from within the window of March 1 through June 15, as outlined by the White River ROD/RMP, to reduce impacts during this sensitive time period.

25. Further, project activities may need to be adjusted around a wild horse gather if scheduled during the same time as the gather.

26. The lessee may also be required to perform special conservation measures within this area including: a) habitat improvement projects in adjacent areas, if development displaces wild horses from critical habitat; b) replacement of disturbed watering sites with an equal source of water having equal utility; and c) activity/improvements providing for unrestricted movement of wild horses between summer and winter ranges.

27. To minimize the incidents of foals becoming dislocated from their mares the employees associated with this project would be required to slow or stop when wild horses are encountered thereby allowing bands to move away at a pace slow enough that the foals can keep pace and are not separated.

28. The operator 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.

29. 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. The operator 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. The operator, 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.

30. Pursuant to 43 CFR 10.4(g), the operator 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), the operator must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the AO.

31. The operator 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 fossils, collecting large amounts of petrified wood (over 25lbs./day, up to 250lbs./year), or collecting fossils for commercial purposes on public lands.

32. If any paleontological resources are discovered as a result of operations under this authorization, the operator 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.

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

34. Paint and maintain paint on all permanent above ground structures (on-site for six months or longer), including pumping tanks and tank batteries, etc. *Shale Green* according to the BLM Standard Environmental Chart CC-001: June 2008.

35. Comply with all Federal, State and/or local laws, rules and regulations, including but not limited to onshore orders and notices to lessees, addressing the emission of and/or the handling, use, and release of any substance that poses a risk of harm to human health or the environment. All spills or leakages of oil, gas, produced water, toxic liquids or waste materials, blowouts, fires, shall be reported by the operator in accordance with the regulations and as prescribed in applicable orders or notices.

36. 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.

37. 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).

38. 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.

39. Construction sites and all facilities shall be maintained in a sanitary condition at all times; waste materials shall be disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, petroleum products, ashes, and equipment.

40. As a reasonable and prudent lessee/operator in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way holders will report all emissions or releases that may pose a risk of harm to human health or the environment, regardless of a substance's status as exempt or nonexempt and regardless of fault, to the BLM WRFO (970) 878-3800.

41. As a reasonable and prudent lessee/operator and/or right-of-way holder in the oil and gas industry, acting in good faith, all lessees/operators and right-of-way 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 right-of-way 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.

42. Any range improvement projects such as fences, water developments, or other livestock handling/distribution facilities that are damaged or destroyed as a direct or indirect result of implementation of the Proposed Action shall be promptly repaired or replaced by the applicant to restore pre-disturbance functionality.

43. The proposed 18-inch culvert on the tributary to Greasewood Creek for the access road should be increased to at least a 24-inch culvert to allow for adequate passage of floodwaters.

44. To inform the public about the nature of the access road, place and maintain signs stating "Authorized Use Only-Temporary Access Road" where the access road leaves RBC Road 89.

45. All construction activity shall cease when soils or roads surfaces become saturated to a depth of three inches unless approved by the Authorized Officer.

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-110-2012-0114-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 issues. Internal scoping was initiated when the project was presented to the White River Field Office (WRFO) interdisciplinary team on 11/6/2012. External scoping was conducted by posting this project on the WRFO's on-line National Environmental Policy Act (NEPA) register on 11/15/2012.

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 CRF Part 4.

SIGNATURE OF AUTHORIZED OFFICIAL: _____

Field Manager

Per Kent Walter

DATE SIGNED:

07/30/2013